ENVIRONMENTAL ASSESSMENT
[Submitted to the DOI on August 27, 2024]

Federal Financial Assistance Grant Number: 0403.23.079269
Developing an Engaging Plum Run Trail at the Plum Run Preserve, West Chester, PA

Prepared as Part of the National Fish and Wildlife Foundation
Delaware Watershed Conservation Fund

Prepared by:

U.S. Fish and Wildlife Service

In Partnership With:

East Bradford Township

This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible Federal Official.

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Name, Title
U.S. Fish and Wildlife Service

Date

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1.0 INTRODUCTION

The Delaware Watershed Conservation Fund (DWCF) is part of the National Fish and Wildlife Foundation (NFWF) Delaware River Program, which is dedicated to restoring the fish and wildlife habitats and water quality of the Delaware River and its tributaries. The DWCF was launched in 2018 to conserve and restore natural areas, corridors, and waterways on public and private lands that support native fish, wildlife, and plants, and to contribute to the vitality of the communities in the Delaware River watershed. Since 2018, the fund has awarded $72.1 million to 239 projects, which generated $100 million in match, for a total conservation impact of $172.1 million. These projects will collectively restore over 26 miles of riparian habitat and nearly 77 miles of stream habitat, conserve and enhance 1,176 acres of wetland habitat, restore 121 acres of floodplain, improve 32,522 acres of forest habitat, and open 6,141 acres for public access. Projects are located in the following states within the Delaware River watershed: Delaware, New Jersey, New York, and Pennsylvania. Major funding for the DWCF is provided by the U.S. Fish and Wildlife Service (USFWS).

The USFWS, as lead federal agency, and its Project partners, East Bradford Township, Chester County, the Pennsylvania Department of Conservation and Natural Resources (DCNR), and the Pennsylvania Department of Community and Economic Development (DCED), are proposing to construct a 0.25-mile segment of accessible trail and accompanying 11-vehicle parking lot and outdoor heritage center at the Plum Run Preserve, opening up 12 new acres for public access to a recently restored section of the Plum Run, while simultaneously educating the public on the importance of native species conservation and reforesting 2.6 acres of riparian buffer along the Plum Run through the planting of 500 native trees, the Developing an Engaging Plum Run Trail at the Plum Run Preserve, West Chester, PA, Federal Financial Assistance Grant Number: 0403.23.079269 (Project). As the Project administrator, East Bradford Township is managing the Project activities.

This Environmental Assessment (EA) evaluates two alternatives to address the need to construct a 0.25-mile accessible trail, parking lot, and outdoor heritage center and to plant 500 trees to reforest 2.6 acres of the Plum Run Preserve: a No Action alternative and a conceptual design action alternative. The EA further analyzes the potential impacts these alternatives may have on the natural and human environment. This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations for implementing NEPA (40 Code of Federal Regulations [CFR] 1500-1508), regulations contained in 43 CFR Part 46, and USFWS policy and guidance.

1.1 Purpose and Need

The purpose of the DWCF is to support grant projects that undertake one or more of the following actions:

- Sustain and enhance fish and wildlife habitat;
- Improve and maintain water quality for fish, wildlife, and people;
- Sustain and enhance water management to benefit fish and wildlife; and
- Improve outdoor recreational opportunities.

This Project would repurpose the site of an abandoned, mostly demolished 20th century scrapple / slaughterhouse factory (Figure 1-1) into an outdoor educational center and recreational trail with ADA-accessible parking and access to a quarter mile of recently restored Plum Run streambank. East Bradford Township acquired the Project site, now part of the public Plum Run Preserve, in 2015 (Figure 1-2). Formerly used as the headquarters of the privately owned and operated Strode's Sausage and Scrapple Company, the property offered an opportunity for significant habitat restoration along the Plum Run, a

tributary of the Brandywine Creek (Brandywine/Christina Watershed). The property also provided an opportunity for East Bradford Township to improve outdoor recreational opportunities.

Figure 1-1 Photograph of Project Site, Former Scrapple Factory

To achieve the desired purpose, the Project partners propose to construct an off-road, 0.25-mile segment of the universally accessible, multiuse Plum Run Trail and an accompanying ADA-accessible 2,520 square foot outdoor heritage center at the Plum Run Preserve, located just outside of West Chester Borough in Chester County, PA (Figure 1-2). The project will improve recreational access to a recently restored section of the Plum Run. The heritage center and parking lot will be built on the site of the former sausage and scrapple factory (Figure 1-3). This land has been previously impacted by the buildings, livestock pens, and hardscaping that were part of the former factory. The outdoor heritage center will consist of free-standing walls on an existing hardscaped area. Within the walls will be 12 free-standing educational interpretive panels and benches. The original core of the barn, pictured in Figure 1-1, is undergoing restoration in the fall of 2024 with funding from the Pennsylvania Historical and Museum Commission (PHMC). The core of the barn will remain on site, but visitors will not be able to access the inside. The interpretive panels will range in size from 24" by 36" to 36" by 48". The interpretive panels will include content covering a variety of topics, from natural resources and conservation to historical information about the site and surrounding area. Examples of the proposed panel topics include the Battle of Brandywine, the Strode's Mill Historic District, and the significance of American shad in the Brandywine and Delaware River watersheds (Appendix K). The project will include the construction of an accompanying 11-vehicle parking area (with ADA access) and associated stormwater management infrastructure (including 2 underground infiltration basins and 5,025 square yards of amended soils that will be planted with 500 native trees to maximize the Plum Run riparian buffer along 0.15 stream miles). The project will include the installation of a 50-foot pedestrian bridge over Plum Run that will enable the trail to connect an existing segment of the Plum Run Trail that extends into the West Chester University campus. The project will enhance safety for pedestrians, cyclists, and multi-modal commuters along the Pennsylvania Route 52 corridor in East Bradford Township, one of the priority projects outlined in East Bradford Township's Comprehensive Plan of 2016. Currently, Route 52, also known locally as Lenape

Road, is a busy commuter road that features narrow shoulders, no sidewalks, and no bike lanes. It is dangerous for pedestrians and cyclists to travel on Route 52, especially during peak traffic hours.

The purposes of the Project are to provide new, equitable recreational access to 12.12 acres of the Plum Run Preserve while restoring 2.6 acres of riparian buffer along 0.15 miles of the Plum Run and educating an estimated 30 people daily on the significance of preserving and enhancing stream habitat for native species of concern. The Project is needed to create the on-the-ground infrastructure necessary for providing universal public access to the Plum Run Preserve and a safe off-road alternative for pedestrians, cyclists, and multi-modal commuters along the Route 52 corridor in East Bradford Township.

Figure 1-2 Project Area Overview – Plum Run Preserve, West Chester, Pennsylvania

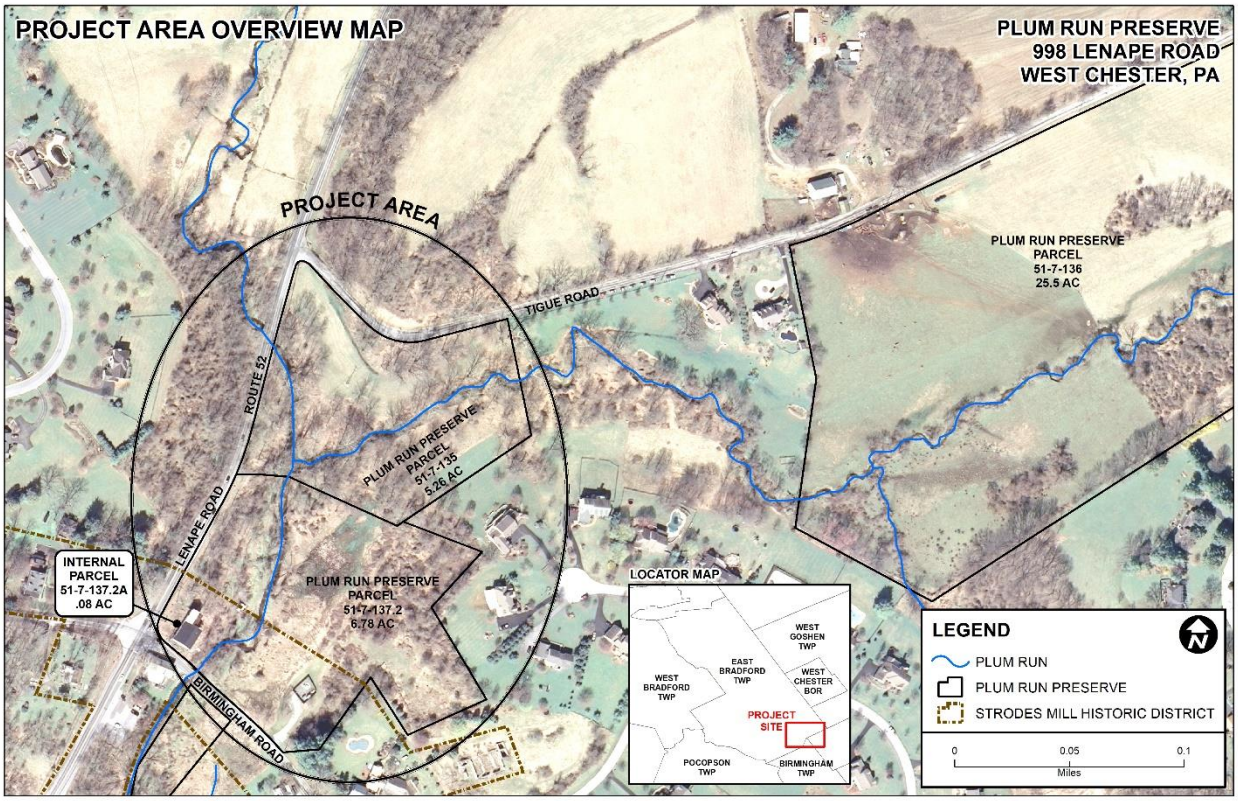


Figure 1-3 1986 Photograph of the Former Strode's Sausage and Scrapple Factory

2.0 ALTERNATIVES

An alternatives analysis was performed to determine the most feasible and prudent means of achieving the defined Project purpose and need. The ability to provide equitable recreational access to the Plum Run Preserve and educational engagement on the history of Strode's Mill and the importance of native plant species conservation. Two alternatives were analyzed: a No Action Alternative and the Proposed Action Alternative, as described below.

2.1 No Action Alternative

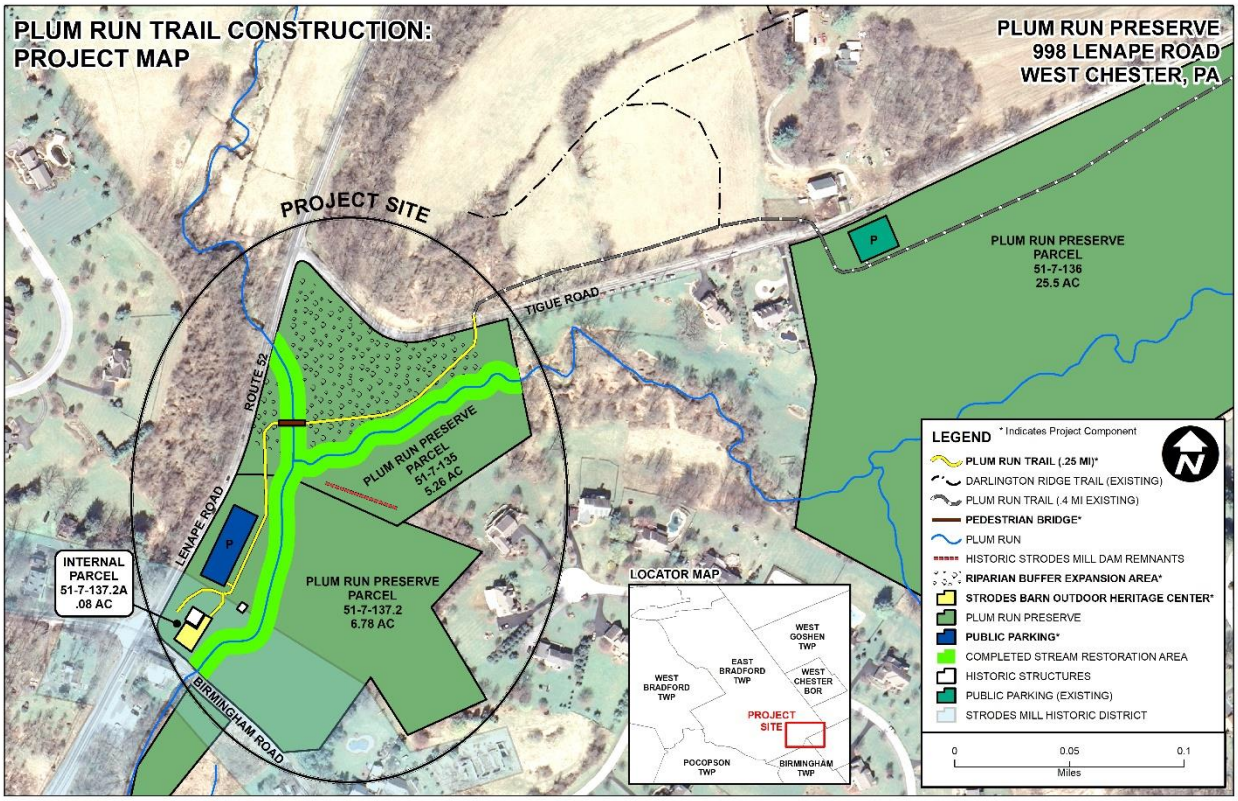
Under this alternative, no trail, outdoor heritage center, parking lot, pedestrian bridge, or associated stormwater management features would be constructed. No native trees would be planted within the Plum Run riparian buffer and no other activity would take place. Under this alternative, there would be no improvement of habitat at the Plum Run Preserve and no improvement in the water quality of Plum Run. There would be no public access for recreation at this 12.12-acre tract of the Plum Run Preserve and the public and local community would not have the ability to experience first-hand the results of completed stream restoration along the Plum Run and would not have access to any outdoor heritage center that includes educational content on the history of Strode's Mill or the importance of native species conservation. There would be no improved recreational access and infrastructure that is universally accessible and there would be no increased recreational opportunity at the Plum Run Preserve for people with mobility limitations or other physical and/or socio-economic challenges. This alternative would also result in there being no safe, off-road alternative for pedestrians, bikers, and multi-modal commuters to utilize in navigating the busy Pennsylvania Route 52 corridor in East Bradford Township. Additionally, under this alternative, there would be no repurposing of the significantly disturbed and hardscaped site of the former scrapple factory. For these reasons, the No Action Alternative would not meet the Project's

purpose and need to provide new, equitable recreational access to 12.12 acres of the Plum Run Preserve while restoring 2.6 acres of riparian buffer along 0.15 miles of the Plum Run and educating an estimated 30 people daily on the significance of preserving and enhancing stream habitat for native species of concern.

2.2 Proposed Action Alternative

The Proposed Action Alternative involves the creation of the outdoor heritage center, parking lot, pedestrian bridge, and associated stormwater management structures required to meet the Project's purpose and need. Terrestrial and in-stream habitat would be improved through the 2.6 acres of riparian buffer restoration that includes the planting of 500 native trees.

Figure 1-4 Proposed Action Alternative Project Area



The Project would include the following:

- Public access to Plum Run Preserve
- An +/- 2,520 sq. ft outdoor heritage center built on existing hardscaped land
- Planting of 500 native trees within 2.6 acres of the riparian buffer of Plum Run
- An 11 vehicle ADA accessible parking area
- A 50-foot pedestrian bridge across Plum Run
- A safe alternative for transportation through the busy Lenape Road in East Bradford Township

These improvements to the Plum Run Preserve and the extension of Plum Run Trail will not only improve the quality of the natural area protected by the preserve but also improve the safety and

educational value for the public. The outdoor heritage center will be used to inform the local population (60,000+ citizens) and the wider public about the history of Strode's Mill and the importance of native plant species conservation.

This alternative will improve recreational access through incorporation of infrastructure that is universally accessible. It will increase recreational opportunities at the Plum Run Preserve for people with mobility limitations or other physical and/or socio-economic challenges through the installation of ADA-accessible parking, and the extension of the multi-use, paved Plum Run Trail. This alternative would result in a safe, off-road alternative for pedestrians, bikers, and multi-modal commuters to utilize in navigating the busy Pennsylvania Route 52 corridor in East Bradford Township. The Project includes the installation of a universally accessible 50-foot pedestrian bridge over Plum Run that will enable the Plum Run Trail to connect with an existing segment of multi-use trail on the opposite side of Tigue Road. A crosswalk allowing pedestrians and bikers to safely cross Tigue Road is included in the proposed Project. The existing section of the multi-use trail was constructed by Toll Brothers in 2021 and is approximately 0.4 miles long. The multi-use trail will eventually be extended 0.5 miles into the West Chester University campus where it will tie into a paved, 1-mile long off-road pathway that extends down S. New Street into the heart of West Chester Borough, the Chester County seat and a major hub of commerce and social activity in southeastern Pennsylvania. West Chester University is located less than 1 mile from the project area and currently has over 18,000 enrolled students. Many of these students lack vehicular transportation and would benefit from the extension of Plum Run Trail. The existing 0.4 mile segment of the multi-use trail currently terminates at Tigue Road, where it connects to a mown grass nature trail managed by East Bradford Township (Figure 1-6). The Project proposes to create a multi-use trail that extends from the Tigue Road crossing to the outdoor heritage center and parking at the south end of the property. The Proposed Action alternative also repurposes the significantly disturbed and hardscaped site of the former scrapple factory, including significant riparian zone restoration.

Heavy equipment required for the construction necessary to achieve the desired purpose includes excavators, loaders, trucks, and asphalt pavers. Heavy equipment will be utilized in clearing for and paving the trail extension and parking lot, constructing the pedestrian bridge over Plum Run, and creating the associated stormwater basins.

A National Pollutant Discharge Elimination System (NPDES) general permit has been registered for the project (Appendix H) and a PA Department of Environmental Protection (DEP)-U.S. Army Corps of Engineers (USACE) joint permit has been approved for the stream crossing portion of the project (Appendix J).

Construction is planned to begin in 2025, but a specific start schedule is yet to be determined and will depend on seasonal restrictions for species of concern, and grant funding timelines. Project funding in the total amount of $1,100,000.00 has been secured by East Bradford Township through a variety of grant sources that include: the Pennsylvania Department of Conservation and Natural Resources ($500,000.00), Chester County ($250.000), the National Fish and Wildlife Foundation ($250,000.00), and the Pennsylvania Department of Community and Economic Development ($100,000.00). The Proposed Action Alternative meets the Project's purpose and need to provide new, equitable recreational access to 12.12 acres of the Plum Run Preserve while restoring 2.6 acres of riparian buffer along 0.15 miles of the Plum Run, creating safe off-road alternative transportation opportunities, and educating an estimated 30 people daily on the significance of preserving and enhancing stream habitat for native species of concern. For these reasons, the Proposed Action is the preferred alternative for this EA.

Figure 1-5 Aerial Image of Proposed Action Alternative

Figure 1-6 Tigue Road Crossing

3.0 AFFECTED ENVIRONMENT

The Project is located at the corner of Route 52 (Lenape Road) and Birmingham Road in West Chester, PA. The Project site is on a property formerly used as the headquarters of the privately owned and operated Strode's Sausage and Scrapple Company. The property has a rich history, as the location of successful family business endeavors for almost 300 years (Friends of Strode's Mill, 2024). The property also has historical significance related to the movement of British troops through the site during the Battle of Brandywine. The Strode's Mill Historic District, as registered on the National Register of Historic Districts, includes 120 acres of land in and around the proposed Project site. The Project site limit of disturbance (1.91 acres), is within the property currently owned by East Bradford Township as part of the Plum Run Preserve.

The existing conditions of the site are significantly disturbed, with the hardscaped site of the former scrapple factory in disrepair. The former factory operated until 1986, after which it was shut down and dismantled by private owners who prospected to adaptively redevelop the site for commercial and

residential use. The factory and land around it suffered a fate of demolition through neglect over the ensuing thirty years. With grassroot support from the community, state and local historic preservationists, and a newly formed 501(c)(3) citizen organization, the Friends of Strode's Mill, East Bradford Township purchased the derelict former factory property in 2015 with an intent to save and restore the most historically noteworthy sections of the former factory/barn complex and to repurpose the surrounding land as publicly accessible parkland and open space. Selective demolition work was carried out in 2017 to remove dilapidated wings of the barn that were not salvageable. Fortunately, most of the original historic core of the barn was able to be secured and left intact for restoration. In the fall of 2024, the original core of the barn and an associated small springhouse structure were both restored with funding from PHMC. Much of the project area is dominated by invasive species including reed canary grass (*Phalaris arudinacea*), common reed (*Phragmites australis*), and Japanese hops (*Humulus japonicus*). Plum Run and its unnamed tributary (UNT) within the Project area were recently restored through a multiphase stream restoration project. The stream restoration was completed in 2021 by Brandywine Red Clay Alliance. The stretches of streams restored as a part of these projects include Plum Run from where it crosses under Route 52 (Lenape Road) to where it passes under Birmingham Road, and the UNT to Plum Run from where it leaves the Robert B. Gordon Natural area to where it meets its confluence with Plum Run. Thus, both stream stretches within the Project area were restored as part of the previous multiphase restoration project.

3.1 Resources Eliminated from Further Analysis

The following resources were dismissed from further evaluation because the resource does not occur in the area and/or because the implementation of the Proposed Action would not affect these resources or issues, as described below.

Wetlands – According to a wetland delineation report dated June 18, 2020, prepared by Clauser Environmental, LLC, there are no wetlands located within the Project limits of disturbance (Appendix B). The 2020 wetland delineation report provides documentation of 10 wetlands and five streams on a 46.87-acre area of investigation for the "Plum Run Trail Site." This 46.87-acre area includes the limit of disturbance for the Project, in addition to 44.96 Acres adjacent to the Project limit of disturbance. All wetlands documented in this report are located outside of the Project limit of disturbance. The Project will occur strictly in upland areas and will not result in any encroachments, fills, or crossings of nearby wetland areas.

3.2 Introduction – Scope of Resources Evaluated

Environmental resources identified and analyzed in this document are listed below along with reasons for their inclusion in this EA. The evaluation of the environmental effects to these resources for each alternative is described in "Section 4.0: Environmental Consequences." Technical reports prepared by consultants for East Bradford Township and partner organizations contain more extensive descriptions of resources such as fish, wildlife, and/or cultural resources and include the Strode's Barn Natural Area Stewardship Report prepared in 2016 (Appendix A), the Plum Run 18-66 Site Wetland Delineation Report prepared in 2020 (Appendix B), and the Phase I Environmental Site Assessment (ESA) prepared in 2015 (Appendix C). A brief description of existing resource conditions is provided below.

3.3 Soils and Sediment

The Project site is located in the Glenarm Wissahickon formation, which is described as a pelitic schist and gneiss with interlayers of quartzite featuring highly variable color and mineralogy. There are no bedrock outcrops at or in the immediate vicinity of the site. There are 1.91 acres within the limits of disturbance on the Project site. Approximately 0.15 acres of the 1.91 total acres is covered by impervious surfacing previously constructed on the site to serve the former scrapple plant and associated access (in the form of concrete, macadam asphalt, and metal roofing). The remaining 1.76 acres are covered by

vegetation and consist of Hatboro silt loam (Ha) (1.67 acres) and Glenelg silt loam, 8 to 15 percent slopes (GgC) (0.09 acres). The Hatboro silt loam soil is common on floodplains and consists of deep, poorly drained soils formed in alluvium derived from metamorphic and sedimentary rock. The Hatboro silt loam soil is not prime farmland. The Glenelg silt loam soil is a common upland soil that is very deep and well drained, formed in residuum weathered from micaceous schist. The Glenelg silt loam is classified as a soil associated with farmland of statewide importance. It should be noted that the very small area of Glenelg silt loam on the Project site is relegated to a narrow strip of ground immediately adjacent to and parallel with the State Route 52 roadbed. Additionally, no portion of the Project site is currently used for agricultural purposes. A soil map of the Project area and adjacent sites is included in the Plum Run 18-66 Site Wetland Delineation Report (Appendix B).

Multiple soil probe pits were dug and auger tests were completed during the infiltration investigation to determine depth to seasonal high water and other potential limiting zones. These probes determined that the depth to seasonal high water on the site is in the range of 20" to 30". A Phase I ESA for the Project site was performed in April, 2015 (Appendix C). The ESA was performed prior to the site's acquisition by East Bradford Township. Based on the historic use of the Project site and all evidence, both visual and documented, the Phase I ESA found no existing conditions of concern pertinent to soils and sediment on the Project site.

3.4 Water Resources

The project site includes sections of two streams. The two resources are Plum Run and an unnamed tributary to Plum Run. Plum Run, including its tributaries, has a Pennsylvania Code, Title 24, Chapter 93 designation of Warm Water Fishery, Migratory Fishery (WWF, MF). Plum Run is not listed as a watercourse that supports natural trout reproduction by the Pennsylvania Fish and Boat Commission (PFBC). A major stream restoration project was completed on Plum Run and its tributaries within the Project area by the Brandywine Red Clay Alliance in 2021. Two prior stream restorations were completed directly upstream of the Project area since 2019.

3.4.1 Flood Zones

Flood zones, a commonly used term in floodplain management, are geographic areas defined by the Federal Emergency Management Agency (FEMA) reflecting the severity or type of flooding in an area. Flood zones that have special flood, mudflow, or flood-related erosion hazards are referred to as Special Flood Hazard Areas (SFHA), which are further differentiated by zones (FEMA 2020). The flood zone within the Project area is designated as Zone A, with elevations ranging from approximately 200 to 260 feet above sea level. Areas in Zone A are defined as having a 1% annual chance of flooding and a 26% chance of flooding during the life of a 30-year mortgage (FEMA 2023). Zone A areas do not have designated base flood elevations or depths.

The total floodplain area within the limit of disturbance for the project is 4,720.5 feet. Under the Floodplain Management Act (1978) municipalities in Pennsylvania must establish and enforce zoning ordinances in compliance with state and federal guidelines.

3.4.2 Surface Water and Hydrology

The Clean Water Act (CWA) of 1972 regulates activities that have the potential to impact waters of the U.S. Section 404 of the CWA (33 U.S. Code [USC] 1344) regulates discharges of dredged and fill materials into waters of the U.S. and is administered by the USACE. Section 401 of the CWA (33 USC 1341) regulates water quality and, in Pennsylvania, is administered by the PADEP.

The Proposed Action is subject to review by the USACE under Section 10 of the Rivers and Harbors Act (33 USC 403) and Section 404 of the CWA, which govern work or structures in navigable waters of the U.S. and/or the discharge of dredged or fill material into waters of the U.S., including their adjacent

wetlands. The PADEP and USACE have approved a joint permit application for the stream crossing portion of the project (Appendix J).

The Project area includes a section of Plum Run and a UNT to Plum Run. Plum Run is a tributary to the Brandywine Creek, which is included in the Christina River Basin. Plum Run meets its confluence with Brandywine Creek less than 2 miles south of the Project site.

3.5 Biological Resources and Vegetation

The debris and dilapidated Strode's Sausage and Scrapple Factory building remaining onsite have impacted the quality of the biological resources on site by inhibiting the growth of native species and disrupting stormwater drainage to Plum Run. The recently completed stream restoration will help to improve the water quality of Plum Run within the project area over time.

A wetland delineation report dated June 18, 2020, prepared by Clauser Environmental, LLC identified tree, shrub, and herbaceous species at multiple sample points within the Project area (Appendix B). Tree species identified at the sample points include sycamore (*Platanus occidentalis*), American black walnut (*Junglans nigra*), and box elder (*Acer negundo*). Invasive multiflora rose (*Rosa multiflora*) dominated the shrub stratum of all three sample sites within the project area. Dominant herbaceous vegetation throughout the Project area included invasive species such as reed canary grass (*Phalaris arudinacea*), common reed (*Phragmites australis*), and Japanese hops (*Humulus japonicus*). Additional invasive species of concern on site were identified in the Strode's Barn Natural Area Stewardship Report prepared in 2016 (Appendix A). In the 2016 report, native species such as jewelweed (*Impatiens capensis*) were present on one of the parcels within the Project area. However, the native species were threatened by the spread of invasive species including poison-hemlock (*Conium maculatum*), Japanese stiltgrass (*Microstegium vimineum*), Canada thistle (*Cirsium arvense*), crown-vetch (*Coronilla varia*), garlic-mustard (*Alliaria petiolate*), amur honeysuckle (*Lonicera maackii*), mile-a-minute (*Persicaria perfoliata*), oriental bittersweet (*Celastrus orbiculatus*), and wineberry *(Rubus phoenicolasius*), which were also identified on the parcel.

3.5.1 Common Fish and Wildlife Species and Habitats

The Project area is surrounded by residential areas and busy roadways that limit the quality of wildlife habitat on site (Figure 1-4). The Project area provides suitable terrestrial habitat for species such as whitetail deer (*Odocoileus virginianus*), eastern gray squirrels (*Sciurus carolinensis*), eastern cottontail (*Sylvilagus floridanusa*), and northern raccoons (*Procyon lotor*). The Project area is a suitable habitat for bird species that are tolerant to loud noise and artificial light from the roadways and surrounding residences. Examples of bird species that would be well-suited for such habitat include American robins (*Turdus migratorius)*, gray catbirds (*Dumetella carolinensis*), and mourning doves (*Zenaida macroura*). In the stream, Plum Run and its tributaries support the migration of American eels (*Anguilla rostrata*).

3.5.2 Special-Status Species

The Endangered Species Act (ESA) provides broad protection for species of fish, wildlife, and plants that are listed as threatened or endangered in the U.S. The USFWS online Information for Planning and Conservation (IpaC) system produced a report indicating that no critical habitat is identified at the Project location. The IpaC report indicates that four federally listed threatened or endangered species may occur in the Project area, as shown in Table 3-1. Critical habitat has only been designated for one of these species: the Indiana Bat. Appendix E contains the IpaC query run on February 28, 2024.

Table 3-1 Federal Special-Status Species in Proximity to the Project Area

Common (and Scientific) Name	Designation	Critical Habitat Designated	Description
Indiana Bat (*Myotis sodalist*)	Federally Endangered	Yes	A medium-sized bat, resembling the little brown bat but different in coloration with dull grayish chestnut fur.
Northern Long-eared Bat (*Myotis septentrionalis*)	Federally Endangered	No	A medium-sized bat distinguished by its long ears that is found across much of the eastern U.S. White-nose syndrome is the predominant threat to this bat.
Tricolored Bat (*Perimyotis subflavus*)	Federally Proposed Endangered	No	A small insectivorous bat distinguished by its unique tricolored fur that is often found in caves and abandoned mines during the winter.
Bog Turtle (*Glyptemys muhlenbergii*)	Federally Threatened	No	The smallest emydid turtle with a dark brown or black carapace that may be marked with radiating light lines or a light blotch on the vertebral and pleural scutes.

In addition, a Pennsylvania Natural Diversity Inventory (PNDI) review was conducted on July 6, 2020 and a second time on March 23, 2023, to determine if the Project area contained any state-listed species or their habitats (Appendix F). The 2020 PNDI review determined that one state-listed species of concern is potentially present in the vicinity of the Project area, the Broad-headed Skink, as shown in Table 3-2.

Table 3-2 State Special-Status Species in Proximity to the Project Area

Common (and Scientific) Name	Designation	Critical Habitat Designated	Description
Broad-headed Skink (*Plestiodon laticeps*)	State Candidate Species of Special Concern	N/A	An arboreal and semi-fossorial species whose key habitat includes large trees with snags and exfoliating bark, log piles, rock piles, root wads and ground burrows.

3.5.3 Migratory Birds

The Migratory Bird Treaty Act (MBTA) (40 Stat 755 as amended; 16 USC 703-712) is a federal law implemented to protect migratory birds. The MBTA makes it unlawful to pursue, hunt, take, capture, kill, or sell birds listed therein. The MBTA does not discriminate between live or dead birds and offers full protection to any bird parts, including feathers, eggs, and nests. The IpaC query for the Project indicated that five (5) migratory Birds of Conservation Concern have the potential to be present in the Project area for breeding, overwintering, during migration, and/or may be present year-round. Migratory bird species that may be present include black-billed cuckoo (*Coccyzus erythropthalmus*), chimney swift (*Chaetura pelagica*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), and wood thrush (*Hylocichla mustelina*). Additionally, the IpaC query for the Project indicated that the bald eagle (*Haliaeetus leucocephalus*), despite not being classified as a Bird of Conservation Concern in the Project area, warrants attention because of the Bald and Golden Eagle Protection Act of 1940.

3.6 Human Health and Safety

A Phase I Environmental Site Assessment (ESA) for a portion of the Project area was issued on April 9, 2015 (Appendix C). The ESA was performed before the sale of the property to East Bradford Township. The ESA identified debris on site, including a rusted-out drum and empty paint cans as potential hazards. While the project site is in EPA Zone 1, which is an area of high radon propensity, the radon concentrations were below the recommended action level when the ESA was performed (Appendix C). As part of the ESA, database searches of federal and state environmental records were used to identify potentially hazardous sites and other sites of interest within proximity to one of the parcels included in the project area. One site listed as a Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) No Further Remedial Action Planned (NFRAP) site was identified less than 0.5 miles southwest of the parcel. CERCLIS NFFRAP sites are sites that have been assessed by the EPA and determined to not require further action or listing on the Superfund National Priorities List (NPL). The site is Brandywine Gardens & Greenhouse, and it is listed as a removal site only in the ESA. As the Project area watershed drains to the south above the CERCLIS NFRAP site, it is unlikely that the site will impact the subsurface conditions of the streams within the Project area.

The structure on site within the project area pre-dates the discontinuation of lead-based paint, and lead-based paint may be present on the structures. Similarly, as the structure pre-dates the banning of asbestos-containing building material (ACBM), the presence of ACBM in the deteriorating structures on site was a concern. Asbestos management and abatement occurred in 2015 and an Asbestos Clearance for the former factory/barn was issued on June 29, 2015. Prior to the commencement of barn restoration work in 2024, a precautionary reassessment of asbestos-containing materials was conducted and a second Asbestos Clearance letter was issued on May 28, 2024 (Appendix L). In its current state, the mostly demolished Strode's Barn is not safe or accessible for public use, but it could be if properly rehabilitated.

3.7 Cultural Resources

Strode's Mill, which is located on the opposite side of Birmingham Road from the Project area, is registered as a historic place on the National Register of Historic Places (NRHP). The Project area is located within Strode's Mill Historic District which is also listed on the NRHP. The local nonprofit Friends of Strode's Mill has been heavily involved in project planning for the outdoor heritage center and Plum Run Trail. The historic East Bradford Boarding School for Boys (last operational in 1857), now a private residence, is also located within Strode's Mill Historic District but is separated from the Project area by Lenape Road.

Projects receiving federal funding and permitting are required to comply with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (36 CFR 800). Section 106 of the NHPA outlines the process by which federal agencies are required to determine the effects of their undertakings on historic properties. The term "historic property" refers to cultural resources that have been determined eligible for listing, or are listed, in the National Register of Historic Places (NRHP). Historic properties may include archaeological sites, historic resources, or properties of traditional cultural or religious importance to tribes. Impacts to historic properties could occur from a project if there were an alteration to the characteristics of a property that qualify it for inclusion in the NRHP.

There are no federally recognized Native American Tribes in the state of Pennsylvania (Native Languages, 2024). The Lenape Nation of Pennsylvania is a non-federally recognized organization based in eastern Pennsylvania. The group does not reside in proximity to the Project site.

3.8 Socioeconomics, Environmental Justice, and Protection of Children

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to examine proposed actions to determine whether they would have disproportionately high and adverse human health or environmental effects on minority or low-income

populations. The CEQ suggests that communities may be considered "minority" if the cumulative percentage of minorities within the affected community is greater than 50 percent, or if the cumulative percentage of minorities within the affected community is meaningfully greater[1] than the minority population percentage in the general population (reference population). Communities may be considered "low-income" if the median household income for the affected community is below the poverty line,[2] or other indications are present that indicate a low-income community is present.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, seeks to protect children from disproportionately incurring environmental health risks or safety risks that might arise as a result of federal policies, programs, activities, and standards. Environmental health risks and safety risks include risks to health and safety attributable to products or substances that a child is likely to come in contact with or ingest. For a project to affect environmental justice (EJ) populations or children, significant adverse environmental impacts must fall disproportionately upon EJ populations or children within the affected area.

Data from the U.S. Census Bureau for East Bradford Township and for Chester County (as the reference population) are provided in Table 3-3.

Table 3-3 Demographic Information for East Bradford Township and Chester County

Demographic Indicator	East Bradford Township	Chester County
Population	10,934	549,784
Race		
White	92.7%	83.7%
Black or African American	3.3%	6.3%
Asian	1.7%	7.3%
American Indian and Alaska Native	0.0%	0.3%
Hispanic or Latino (of any race)	2.2%	8.3%
Income and Employment		
Median Household Income	$151,417	$118,574
Per Capita Income	$67,926	$60,599
Percent of Population below Poverty Level	2.4%	5.6%

Source: U.S. Census Bureau 2022/2023

The population of East Bradford Township was recorded to be 10,934 in the 2023 U.S. Census Bureau data. Of this population, approximately 92.7% identify as White, 3.3% as Black, 1.7% as Asian, and 2.2% as Hispanic or Latino. This totals 7.2% of East Bradford Township's population identifying as a minority. The population of Chester County overall is 83.7% White, 6.3% Black, 7.3% Asian, and 8.3% Hispanic or Latino. Thus, Chester County's population is 22.2% minorities, higher than the rate for East Bradford Township. The data shows that 2.4% of the population of East Bradford Township lives below the poverty level, with a median household income of $151,417. The poverty rate of East Bradford Township is lower than that of Chester County as a whole, which has a poverty rate of 5.6% and a median household income of $118,574. Based on the information provided in Table 3-3, the East Bradford Township is not considered to be an EJ population based on income and race.

[1] CEQ and USEPA have not defined any percentage of the population that can be characterized as "meaningfully greater." As provided by *The National Guidance for Conducting Environmental Justice Analysis* (USEPA 1998), our analysis assumes the meaningfully greater criterion for minority populations to be equal to or greater than 120 percent (1.2 times) of the reference minority population.

[2] In the United States, the poverty line is set annually. In 2022, the poverty level was an income of $13,590 for an individual and $32,470 for a family of five.

There are no operational schools, childcare facilities, hospitals, or places of worship adjacent to the site. Adjacent parcels contain private residences, but all of these residences are situated more than 200 ft from the limit of disturbance and are separated from the project area by roadways or Plum Run and its unnamed tributary.

3.9 Land Use and Recreation

3.9.1 Land Use

According to the East Bradford Township Zoning Map, the Project area is located within the commercial (C-1) and residential (R-2) zoning districts (East Bradford Township, 2019(b)). The past and present land use is as meadow and forested open land areas upslope of the Plum Run. No wetland areas will be impacted by the project, as there are no wetlands within the limit of disturbance. There are no prime farmland soils mapped on site, but there is a narrow strip of farmland of statewide importance immediately adjacent to and parallel with the State Route 52 (Lenape Road) roadbed (Natural Resources Conservation Service, 2024). The surrounding properties are zoned for residential (R-2) and are currently used for residential developments.

3.9.2 Recreation

The Project area is a section of the Plum Run Preserve which is owned and managed by East Bradford Township. Currently, the preserve is inaccessible to the public due to a lack of safe parking space and connection to trail and/or sidewalk networks. The Plum Run Trail extension is the primary recreational amenity envisioned for the Project site. In a public survey administered as part of the development of the Plum Run Corridor Master Plan, 93% of survey respondents advocated for ADA-accessible multi-use trails for walking, jogging, and biking (East Bradford Township, 2019(a)). This data was consistent with local, state, and national public sentiment. Comprehensive and recreation plans, including the Pennsylvania Statewide Comprehensive Outdoor Recreation Plan, the Central Chester County Bike and Pedestrian Circulation Plan, and the East Bradford Township Comprehensive Plan, all endorse increasing and improving multi-use trails (East Bradford Township, 2019(a)).

3.10 Air Quality and Noise

3.10.1 Air Quality

Ambient air quality is protected by federal and state regulations. The Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for certain air pollutants, and air quality standards for each state cannot be less stringent than the NAAQS. The NAAQS determined by EPA set the concentration limits that determine the attainment status for each criteria pollutant. The EPA determines air quality attainment status based on whether the air quality in an area meets (attains) the NAAQS. Areas that violate NAAQS are designated as nonattainment areas for the relevant pollutants. Areas with insufficient data are designated as attainment/unclassified areas and are treated as attainment areas under the Clean Air Act. Areas that were previously designated nonattainment and have demonstrated compliance with a NAAQS are designated “maintenance” for 20 years after the effective date of attainment, assuming they remain in compliance with the standard.

The proposed Project site is situated in Chester County, PA, which is a maintenance area or non-attainment area for the following (USEPA, 2024):

- 2015 8-hour Ozone NAAQS (non-attainment): 0.070 ppm
- 2006 PM-2.5 NAAQS (maintenance): 35 ug/m^3

3.10.2 Noise

Noise and sound can directly or indirectly affect health, enjoyment, and well-being. High levels of noise can cause hearing loss, interfere with communication, disturb concentration, and cause stress. Noise and

sound may be continuous (constant noise at a steady level), steady (constant noise with a fluctuating level), impulsive (having a high peak of short duration), stationary (occurring from a fixed source), intermittent (at intervals of high and low levels), or transient (occurring at different levels). Sound is usually represented on a logarithmic scale with a unit called the decibel (dB). Existing ambient noise levels (background noise levels) are the sounds from natural and artificial sources present at the time a sound measurement is taken.

Existing ambient noise levels (background noise levels) are the sounds from natural and artificial sources present at the time a sound measurement is taken. Traffic from the busy Lenape, Birmingham, and Tigue Roads which surround the Project area contributes to the existing ambient noise levels. Noise from nearby residences and the West Chester University sports complex (less than a mile away from the Project site) also contribute to noise levels on site. According to the EPA, outdoor noise levels of 55 decibels prevent activity interference and annoyance (USEPA, 1974).

East Bradford Township regulates noise in Ordinance Chapter 74, Noise Disturbance (East Bradford Township, 2024). The regulations limit noise-producing activities allowed in residentially zoned areas and commercially zoned areas adjacent to residentially zoned districts between 10:00 pm and 6:00 am. Restrictions include no operation of power equipment outdoors, no use of outdoor loudspeakers, limited use of noisemaking equipment including horns, bells, gongs, sirens, and whistles, no residential off-street loading, and no operation of vehicles larger than 8,600 pounds gross vehicle weight. All construction activities will take place between the hours of 6:00 am and 10:00 pm, so these restrictions will not apply.

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Soils and Sediment

4.1.1 No Action Alternative

The No Action Alternative would result in no ground disturbance and therefore no positive impacts to soils and sediments within the Project area. As there will be no additional riparian buffer plantings under this alternative, there will be no additional protection against soil erosion, negatively impacting the soils and sediments within the Project area.

4.1.2 Proposed Action

Under the Proposed Action Alternative, some ground disturbance is necessary to complete the grading and construction work required to complete the Project. The limit of disturbance for the Project is 1.91 acres, which includes the Plum Run Trail and stream crossing, parking lot, outdoor heritage center, and the associated stormwater management features. The project includes the planting of 500 native trees in the riparian buffer of Plum Run. The establishment of native tree species will strengthen the riparian buffer of Plum Run, which has recently undergone a significant stream restoration project. These plantings would help to further stabilize the soils onsite, protecting the site for future generations. An Erosion and Sediment Control Plan has been prepared per PADEP regulations. BMPs to be utilized on the Project site include rock construction entrances, compost filter socks, filter inlet protection, erosion control blankets, pumped water filter bags, concrete washout facilities, and replanting and overseeding. All erosion and sediment controls will be maintained until the site is stabilized.

Overall, impacts to soils and sediment onsite will be minimal within the project area. The positive impacts of long-term reinforcement of streambanks outweigh the temporary negative impacts of ground disturbance during construction.

4.2 Water Resources

4.2.1 No Action Alternative

The No Action Alternative would result in no in-stream construction, and no construction work done within floodplain areas, so there would be no adverse impacts to water resources. There will be no wetland impacts, as there are no wetlands located within the limit of disturbance.

4.2.2 Proposed Action

Under the Proposed Action Alternative, the construction of the 50-foot pedestrian bridge over Plum Run will have direct impacts to a small section of the stream. The PADEP and USACE have approved a joint permit application for the stream crossing portion of the project (Appendix J). All permit special conditions or stipulations will be followed. The total stream impacts under Section 404 of the CWA are 147.3 square feet of permanent direct impacts. An NPDES General Permit for Discharges of Stormwater Associated with Construction Activities for the Project was registered to East Bradford Township by PADEP (NPDES Permit No. PAC15303 A-1). For access to the outdoor heritage center for those unable to walk the full length of the trail, an 11-vehicle parking area (with ADA access) is proposed.

Due to the lot configuration and other constraints, the parking area will slightly encroach upon the floodplain. The total floodplain area within the limit of disturbance for the project is 4,720.5 feet. Floodplain impacts include the creation and maintenance of a portion of the parking area and trail within the floodplain area. These floodplain impacts will be very minor, and will not impact downstream, or upstream areas. A floodplain compliance letter dated September 29, 2023 states that the Project complies with the East Bradford Township Floodplain District Regulations contained in the Zoning Ordinance (Appendix D).

During the design stage of the project, the design team selected the current proposed location and design of the pedestrian bridge because it minimizes site impacts by avoiding the most sensitive site areas. The stormwater management infrastructure (including two (2)) underground infiltration basins with 5,025 square yards of amended soils and the planting of 500 native trees to maximize the Plum Run riparian buffer along 0.15 stream miles) will help to reduce runoff into the stream and capture pollutants before they make their way to the stream.

Overall, the Proposed Action Alternative would help to improve the management of stormwater runoff with riparian buffer plantings and two new stormwater infiltration basins. The impacts to the stream and surrounding floodplains will be minor and mitigated through the use of BMPs.

4.3 Biological Resources and Vegetation

4.3.1 No Action Alternative

The No Action Alternative would result in no disruption to the current site conditions. The No Action Alternative would not involve any construction, grading, or paving activity so there would be no effects on listed species, fish, or migratory birds present at the Project site. However, the No Action Alternative would also entail no native plantings or seeding that could curb the spread of invasive species and help to re-establish native plants on the site.

4.3.2 Proposed Action

The addition of 500 native plantings and seeding with a native wildflower and grass mix would reduce erosion and benefit terrestrial habitats long-term by countering the invasion of non-native species. Additionally, native plantings would have an overall positive effect on biodiversity and local fauna, including butterflies and other pollinators. In the long term, the addition of native trees would provide higher quality nesting and foraging habitat for a wide variety of birds resulting in long-term beneficial

impacts to birds protected under the MBTA. Though noise levels may increase from public use of the site the impacts will be minimal as this site is kept

There may be minor disturbance to aquatic habitats during the construction of the 50-foot pedestrian bridge. BMPs, including a pump-around, will be used to keep impacts to a minimum. Additional plantings within the riparian buffer of Plum Run will help to improve water quality and habitat long-term by strengthening the streambanks and helping to capture pollutants in runoff before they enter the stream.

The IPaC query indicates four federally listed threatened or endangered species may occur in the Project area: the Indiana bat (*Myotis sodalist*), the Northern long-eared bat (*Myotis septentrionalis*), the tricolored bat (*Perimyotis subflavus*), and the bog turtle (*Glyptemys muhlenbergii*). Critical habitat has been designated for the Indiana Bat. The project applicant completed a Pennsylvania Natural Diversity Inventory (PNDI) review on July 6, 2020 that initiated a consultation with the USFWS. On September 1, 2020, the USFWS issued a response (USFWS Project No. 2020-1296) declaring that of the listed threatened or endangered species, only the bog turtle may occur in or near the project area. Based on USFWS review and site visit data collected on August 18, 2018, USFWS determined that there is no potential bog turtle habitat within 300 feet of the project area, and the Project is unlikely to adversely affect the bog turtle (Appendix F). In a site-specific consultation with the USFWS, the five (5) migratory Birds of Conservation Concern identified in the IpaC search were determined to incur no concerns or restrictions for the Project. Additionally, it was determined than no additional attention was warranted for the bald eagle (*Haliaeetus leucocephalus*) on this Project. The Project applicant completed a second PNDI review on March 23, 2023, that initiated a second consultation with the USFWS. On June 15, 2023, the USFWS issued a second response (USFWS Project No. 2023-0086493) that confirmed its original finding of no adverse effect on threatened or endangered species (Appendix F). Consultation with the USFWS on Special-Status Species has been satisfactorily completed.

Because the PNDI search for the Project yielded a potential conflict for the broad-headed skink (*Plestiodon laticeps*), the Project applicant was advised to begin consultation with the Pennsylvania Fish and Boat Commission (PFBC). The PFBC issued an initial consultation letter on July 20, 2020. On September 11, 2020, PFBC field biologists conducted an in-person site survey and habitat analysis of the Project site. Following the site survey, the PFBC submitted a conclusive consultation letter on September 21, 2020, recommending several actions that would adequately minimize impacts to the species of concern. In accepting and agreeing to implement the recommended conservation actions as part of the project, the PFBC resolved that there would be no adverse impact to the species of concern (Appendix F).In order to avoid disturbance to hibernating individuals, PFBC recommends that the project excavation and tree-clearing be conducted between April 15 and October 15 (April 15 to June 30, preferred), during the active period of broad-headed skinks. Trail construction should avoid the removal of large trees (>10" dbh), to minimize disturbance to nests. Where allowable, stumps/roots should be left intact. PFBC also recommends that potential habitat features (logs, debris, rocks, bark, etc.) be removed from the trail site prior to excavation activities. This should take place during the non-breeding season (October 15 to June 15) to avoid impacts to eggs/guarding females. In order to further minimize impacts to broad-headed skink, habitat features should be established in wooded areas, outside of the proposed trail ROW. These include log piles, rock piles, snags, coarse woody debris, etc. If any species of concern are found during project activities, the animal should be moved by a qualified herpetologist no farther than necessary out of the immediate project area (no farther than 0.25 miles away within the appropriate habitat in the same watershed). Threatened and endangered species observed during project activities should be photographed and areas they were observed/captured should be mapped accordingly. In accepting and agreeing to implement the recommended conservation actions as part of the project, the PFBC resolved that there would be no adverse impact to the species of concern (Appendix F).

Overall, while there may be temporary disturbances to wildlife species during construction, due to increased light, noise, and ground disturbance, proposed conservation measures would avoid impacts to

Federal and State Special Status Species and migratory birds. The native plantings will be beneficial to the vegetative community, and help to improve wildlife habitat and biodiversity on site.

4.4 Human Health and Safety

4.4.1 No Action Alternative

Under the No Action Alternative, the deteriorating Strode's Barn would remain in place and unsafe for public use. There would be no expansion of the trail system, which would provide commuters who lack access to vehicular transportation from walking or biking along the busy Pennsylvania Route 52 corridor in East Bradford Township.

4.4.2 Proposed Action

The Proposed Action Alternative would include rehabilitation work done to Strode's Barn to make it structurally sound and safe for public use as a part of the outdoor heritage center. Safety measures that would be in place during the implementation of the Proposed Action to ensure the safety of workers and the public in proximity to heavy equipment include proper safety procedures to protect workers, and the use of signage and temporary construction fencing where appropriate. The risks associated with the deterioration of the site will be addressed by the 2024 barn restoration project that will render a stable, secure and historically appealing structure that will help define the future outdoor heritage center space and will provide an interior shelter for the Township to store equipment and materials needed to maintain the surrounding Plum Run Preserve. Debris removed from the site will be disposed of safely. Additionally, a PA One Call will be made before subsurface construction work to ensure that underground utilities will not be impacted. Resident input from the 2016 East Bradford Township Comprehensive Plan directed that the Lenape Road (Route 52) corridor, paralleling the Plum Run, be recognized as a priority focus area in immediately pursuing efforts to enhance the safety of the corridor for those seeking non-vehicular passage (East Bradford Township, 2016). Currently, Route 52, also known locally as Lenape Road, is a busy commuter road that features narrow shoulders, no sidewalks, and no bike lanes. It is dangerous for pedestrians and cyclists to travel this section of the Route 52 corridor, especially during peak traffic hours. The Project will address this priority focus area, enhancing safety for pedestrians and multi-modal commuters in this section of Route 52 (Lenape Road) by providing a pedestrian and bike trail.

Overall, the Proposed Action Alternative would result in long-term benefits to human health and well-being through the creation of a multi-use trail and outdoor heritage center that is accessible to all individuals. These community resources will provide the opportunity to learn about the history of Strode's Mill and native species conservation, as well as make the natural space along Plum Run more accessible to the public.

4.5 Cultural Resources

4.5.1 No Action Alternative

Since there would be no ground disturbance under the No Action Alternative, there would be no effects to archaeological or historic resources, or cultural resources present in the Project area. There would be no increase in access to the Strode's Mill Historic District or in educational opportunities for the community. There would be no effects on tribal nations as there are none in the area.

4.5.2 Proposed Action

Under the Proposed Action Alternative, the old Strode's Sausage and Scrapple Company building would be refurbished into a safe and accessible Strode's Barn Outdoor Heritage Center. This project, supported by the Friends of Strode's Mill, will help to educate the local community and wider public about the history of Strode's Mill and the community around it. Topics that will be explored on educational interpretive panels include the Strode's Mill Historic District, the Battle of Brandywine, the history of the

Strode's Sausage and Scrapple Factory, and natural resources such as American shad migration, species of greatest conservation need (i.e. native brook trout, broad-headed skink), and local geology. Additionally, the creation of Plum Run Trail and the ADA-accessible parking lot will greatly increase community access to the Strode's Mill Historic District.

On November 25, 2020, the grantee filed a project review form with the Pennsylvania Historical & Museum Commission on the Proposed Action. On December 23, 2020, the SHPO noted that the project would not affect historic properties, including both archaeological resources and historic buildings (Appendix G).

Overall, this Project would be beneficial to the cultural resources on site, as it will include the restoration of the Strode's Sausage and Scrapple Company building into a usable outdoor heritage center and significantly increase community access to Strode's Mill Historic District. The educational interpretive panels will help to educate the community on a variety of relevant local historical events, National Register-listed structures and conservation work.

4.6 Socioeconomics, Environmental Justice, and Protection of Children

4.6.1 No Action Alternative

The Project site is not within an environmental justice community or located in proximity to an existing school or other facility where a significant number of children are present (the historic East Bradford Boarding School for Boys is located opposite the Lenape Road and Birmingham Road intersection, but has not been operational since 1857). Implementation of the No Action Alternative would result in no benefit to the community and no impact on socioeconomics or environmental justice populations.

4.6.2 Proposed Action

No environmental justice communities were identified in proximity to the Project area, therefore implementation of the Proposed Action Alternative would not have high or adverse impacts on low-income or minority populations. Construction would have minimal impacts on the community, with temporary impacts consisting of slightly increased noise and traffic levels. Traffic levels will only be increased by construction teams getting to and from the site. There are no schools located within a mile of the project area, so sensitive receptors will not be impacted by construction. The creation of the new Plum Run Trail to connect to the existing trail system would increase community access to the natural resources and historic features within Plum Run Preserve. Expansion of the trail system will also provide more safe transportation options for multi-modal commuters who lack access to a vehicle. In the long term, the outdoor heritage center would provide an inviting environment for all members of the community to spend time in nature and learn more about the history of Stride's Mill, and its significance in the Battle of the Brandywine. Making the historic district more accessible could motivate visitors/tourists to come to the site, which would bring in additional income to West Chester businesses from the purchase of goods and services, such as meals and events resulting in positive long-term benefits to socioeconomics.

Overall, the creation of the heritage center would be beneficial for local tourism, recreational opportunities, and informing the public of the significance of the history of the area. Plum Run Trail would provide safe and affordable means of public recreation and an alternative to vehicular transportation when eventually linked to West Chester University and a wide local or regional trail/sidewalk network as part of future extensions of the proposed Project. Because of these factors, this alternative would likely result in long-term beneficial impacts on socioeconomics.

4.7 Land Use and Recreation

4.7.1 No Action Alternative

Under the No Action Alternative, there would be no changes to land uses or zoning so no impacts to land use would occur.

The No Action Alternative would result in no improvements to the site or recreational opportunities in Plum Run Preserve or the Strode's Mill Historic District. The natural space and historic site on this property would remain inaccessible to the public. The No Action Alternative would have no measurable impact on recreation.

4.7.2 Proposed Action

The proposed land use for the project area is recreation/trail use. The Proposed Action Alternative would involve changes to the landscape of the Project area through the addition of the accessible walking and biking trail and parking lot, and the rehabilitation of the existing hardscaped area. The addition of native trees would help to strengthen the riparian zone, supporting the longevity of the Project site for its intended use. Zoning for the Project site would not change.

The Proposed Action Alternative will significantly increase recreational opportunities within Strode's Mill Historic District. The creation of Strode's Barn Heritage Center would provide a new educational recreation opportunity for the surrounding communities (60,000+ people). The ADA-accessible parking lot would make recreation in the Strode's Mill Historic District and Plum Run Preserve accessible to people of all abilities. The Proposed Action Alternative will eventually increase the natural area that West Chester University and the surrounding community will be able to access without a vehicle. This will have a beneficial impact as many of the university students lack access to vehicular transportation. The Proposed Action Alternative will offer a safe and educational recreational opportunity for the students and other members of the university community. In a survey administered as part of the Plum Run Corridor Master Plan to assess community interest in recreational opportunities, 93% of survey respondents advocated for multi-use trails for walking, jogging, and biking. This demonstrates a clear demand from the community for the trail, which will accommodate walking, jogging, and biking.

Overall, the Proposed Action Alternative will have minimal impacts on land use and significant benefits to recreation. The Project is a unique opportunity to improve recreational access to natural space, and historic sites in a highly populated area with a demand for more trails and recreational opportunities (as evidenced by the survey discussed in 3.9.2).

4.8 Air Quality and Noise

4.8.1 No Action Alternative

Under the No Action alternative, no Project activities would occur, resulting in no impacts to air quality or noise.

4.8.2 Proposed Action

Under the Proposed Action Alternative, there may be temporary, localized emission increases from heavy equipment exhaust during Project construction. Emissions from heavy equipment and haul trucks are primarily generated from diesel engine exhaust and include NOX, CO, VOCs, SO2, and particulate matter (PM10 and PM2.5). The localized emission increases would last only during the implementation of the Proposed Action Alternative, so potential impacts would be short-term. Fugitive particulate dust (PM10 and PM2.5) would be generated by grading and excavation but would be substantially reduced through the use of BMPs. The generation of fugitive dust and combustion emissions would be minimal due to the small size of the vehicle and equipment fleet, and short time required to implement Project activities, and compliance with applicable regulatory requirements and mitigation.

Chester County is designated as nonattainment for the 2015 8-hour ozone standard and is designated as maintenance for the 2006 PM2.5 standards. Temporary emissions and associated fugitive dust from fuel-burning equipment used during enhancement activities are expected to be below the general conformity *de minimus* thresholds, and therefore would not affect plans for achieving or maintaining compliance with the NAAQS. In the future, the only additional emissions generated would be the minimal emissions from gas-powered cars entering and exiting the parking area.

Noise impacts from the Proposed Action may include noise generated during construction, and the minor noise from visitors to the site after project completion. Noise from visitors will be minimal and consistent with noise from West Chester University, residences, and commercial businesses. The construction noise from machinery, workers commuting to/from the site, and haul truck trips delivering materials to the site. Elevated noise levels from construction would be short-term and limited to daytime working hours. All of the construction work would be done in accordance with East Bradford Township Ordinance Chapter 74, Noise Disturbance (East Bradford Township, 2024). The regulations limit noise-producing activities allowed in residentially zoned areas and commercially zoned areas adjacent to residentially zoned districts between 10:00 pm and 6:00 am. The Project area is partially zoned for commercial and partially zoned for residential.

BMPS that would be used to minimize the impacts to noise levels and air quality during construction include:

- Rock construction entrances, compost filter socks, filter bag inlet protection, erosion control blankets, and replanting and overseeding to minimize erosion and sedimentation, to minimize the release of dust into the air
- Abiding by the guidelines of East Bradford Township's noise disturbance ordinance
- Proper equipment maintainable, including the maintenance of mufflers and other noise-reducing systems on heavy equipment

Overall, the impacts to air quality and noise will be minor and temporary. The project site is bordered by Lenape, Birmingham, and Tigue Roads on three sides of the project area. The fourth property boundary is adjacent to residential properties. These properties are located on the opposite side of Plum Run, more than 200 ft away from the project area. There are no schools or sensitive receptors within a mile of the site.

5.0 CUMULATIVE EFFECTS

CEQ regulations stipulate that a cumulative effects analysis be conducted to consider the potential impacts to the environment potentially resulting from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Three actions near the Project area would occur during the same time period as the Proposed Action. These are provided in Table 5-1 below.

Example Table 5-1 Projects Included in the Cumulative Effects Analysis

Project Name	Project Proponent(s)	Location	Actions	Status
Plum Run Stream Restoration Projects	Brandywine Red Clay Alliance and East Bradford Township	Within the proposed Project area and adjacent parcels	Five Stream Restorations have been completed on Plum Run and its tributaries since 2010, with the most recent stream restoration being completed on a section of Plum Run within the Project area.	Complete
Brandywine Creek Greenway Projects	The Brandywine Conservancy	Throughout Chester County, and within 2 miles of the proposed Project	The creation of a 40-mile-long conservation and recreation corridor along the Brandywine Creek	Ongoing
Brandywine Battlefield Heritage Interpretation Plan	The Brandywine Conservancy	Throughout Chester County, including the Strode's Mill Historic District	The creation of heritage centers in the local area to promote local heritage interpretation, tourism, economic development, and open space preservation efforts	Ongoing

Sources: The Brandywine Conservancy, East Bradford Township

The projects listed in Table 5-1 would have a beneficial cumulative effect because the projects are focused on the conservation of natural or historical resources and improving recreational opportunities for the local community of East Bradford Township and beyond. These focuses directly align with the goals of the proposed Project.

Plum Run Stream Restoration Projects: The trail and heritage center would have beneficial cumulative effects with the recently completed stream restoration projects. The multi-use trail along the stream will give the community opportunities to observe the success of the restoration work firsthand, fostering a sense of stewardship. Additionally, adding native tree plantings to the site will support the restoration work already completed. The holistic combination of restoration work and improvements to recreation results in ecological benefits and increases community awareness of, and buy-in for, environmental restoration and conservation work.

Brandywine Creek Greenway Projects: The long-term vision of East Bradford Township and its project partners is to extend the Plum Run trail south to the Brandywine and connect the trail to the Brandywine Creek Greenway network. This vision is described in the Plum Run Corridor Master Plan as part of a second phase of projects to follow the proposed Project. This would eventually connect West Chester, the university, and the surrounding community to an extensive trail system stretching from the city of Wilmington, DE to Honey Brook Township, PA. In the short term, the proposed Project builds on the ongoing efforts by East Bradford Township, Brandywine Red Clay Alliance, and other municipalities and nonprofit organizations to prioritize conservation and recreation along streams within the Brandywine watershed.

Brandywine Battlefield Heritage Interpretation Plan: This plan is one aspect of the many plans and projects to preserve the history of the Battle of the Brandywine and create educational opportunities to teach the public about this part of history. Information about the historical events of the Revolutionary War that took place within Strode's Mill Historic District could be included on signage and interpretive panels at the proposed Project's outdoor heritage center. The proposed Project's Strode's Barn Heritage

Center would be an excellent complement to centers being created as part of the Brandywine Battlefield Heritage Interpretation Plan. The Strode's Barn Heritage Center would provide additional opportunities for tourism and community education on the history of the area.

6.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

6.1 Agency Coordination

Representatives of the following federal, state, and local agencies, and Project team members were consulted during Project planning and/or the development of this EA:

- U.S. Fish and Wildlife Service, Region 5
- U.S. Army Corps of Engineers
- Pennsylvania Department of Environmental Protection
- Friends of Strode's Mill
- Brandywine Red Clay Alliance
- The Brandywine Conservancy
- Chester County Conservation District
- Brandywine Valley Scenic Byway Commission
- Chester County Planning Commission
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Community and Economic Development

6.2 Public Involvement

The Project is undergoing local, state, and federal permitting processes, as described in Section 7 of this document. Each permit process requires extensive environmental and planning agency circulation, as well as ample public notice and involvement that provide opportunities for a wide variety of specialists, regulators, and residents to comment on and condition the Project's potential short-term and long-term impacts.

A task force was created during the development of the Plum Run Corridor Master Plan in 2018 and 2019. The groups and organizations represented in the task force included:

- East Bradford Township Planning Commission
- East Bradford Township Historical Commission
- East Bradford Township Trails Committee
- East Bradford Township Traffic Committee
- The Brandywine Conservancy
- Brandywine Red Clay Alliance
- Brandywine Valley Scenic Byway Commission
- Chester County Planning Commission

The task force participated in the development of the master plan, which was the original outline for the Proposed Action Alternative outlined in this EA (and has since been adjusted). Public meetings and surveys were used to receive community input for the project during the master plan. There was

significant support received from West Chester University, adjoining landowners, and members of the community (East Bradford Township, 2019(a)).

7.0 COMPLIANCE WITH FEDERAL, STATE, AND LOCAL LAWS

The proposed Project has been evaluated for consistency with applicable federal, state, and local laws, regulations, and programs. In addition to this EA, the following permits and/or consultations are also required by local, state, and federal agencies:

- NPDES General Permit (Appendix H)
- Pennsylvania Department of Transportation – Highway Occupancy Permit (Appendix I)
- PA DEP and U.S. Army Corps of Engineers – Joint Permit (Appendix J)
- U.S. Fish and Wildlife Service, Region – listed species consultation (Appendix E)
- Pennsylvania Fish and Boat Commission – listed species consultation (Appendix F)
- State Historic Preservation Office – historic and cultural resources consultation (Appendix G)

Consultations with federal and state regulatory agencies and officials have been held to confirm the soundness of the Project and the ability to receive permits. All necessary permits have been secured. Refer to Appendices F through J for agency consultation and permit authorizations received for this Project.

8.0 LIST OF PREPARERS

The following contributed to the development of this EA/

U.S. Fish and Wildlife Service

Name	Role

East Bradford Township

Name	Role
Richard A. Phifer	Director of Property & Recreation

Clauser Environmental, LLC

Name	Role	Project Responsibility
Kora S. Clauser, MBA	Biologist	EA Writing and Review
Aaron S. Clauser, PhD	Co-Owner/Lead Scientist	EA Writing and Review

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APPENDIX A

STRODE'S BARN NATURAL AREA STEWARDSHIP REPORT (NOVEMBER 2016)

Strode's Barn

Natural Area Stewardship Report

East Bradford Township, Chester County, PA

November 2016

Natural Lands Trust®

Strode's Barn

Natural Area Stewardship Report

East Bradford Township, Chester County, PA

Natural Lands Trust

Hildacy Farm Preserve
1031 Palmers Mill Road
Media, PA 19063
610-353-5587
natlands.org

November 2016

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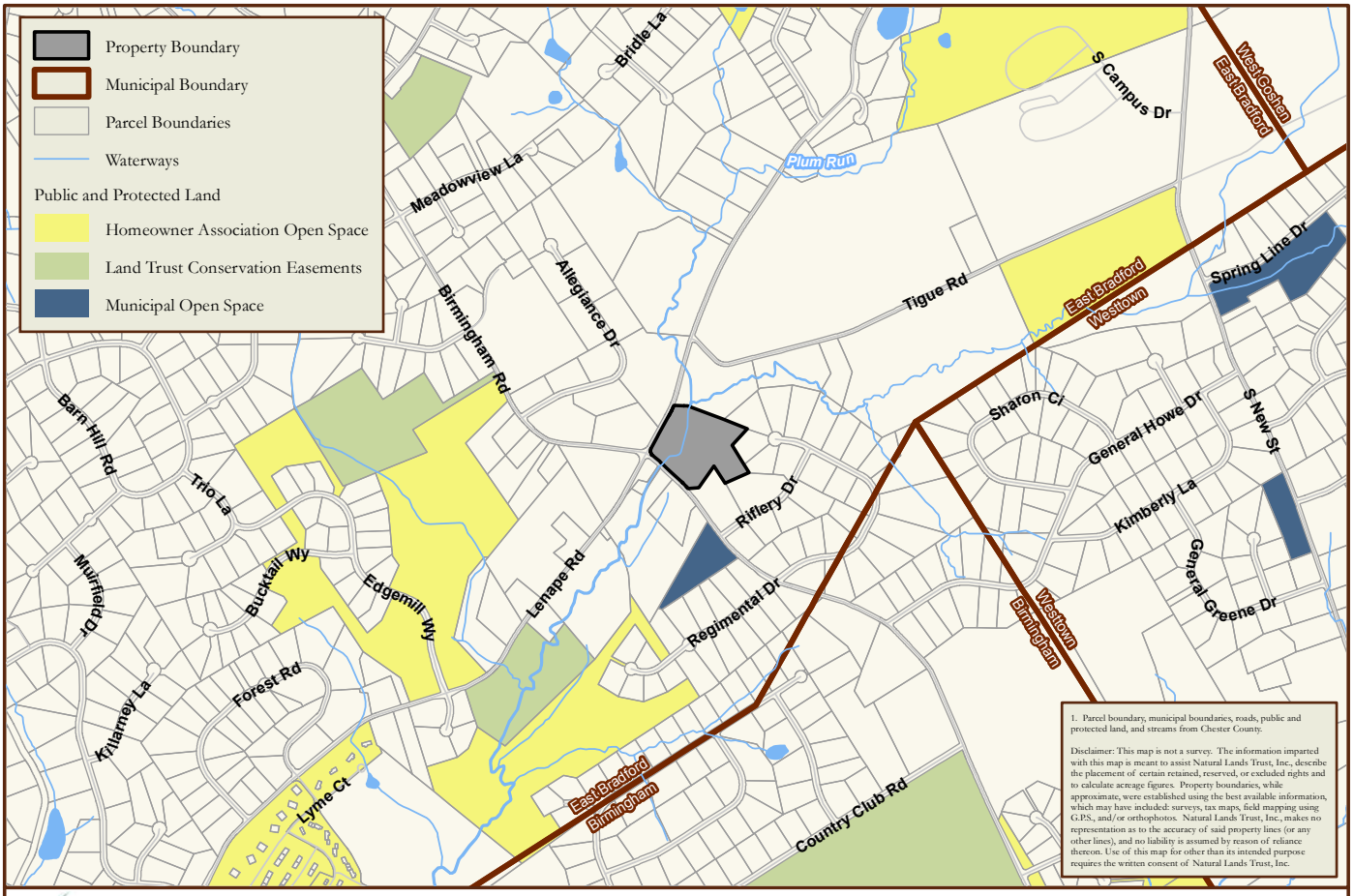
APPENDIX 27

Invasive Plants in Pennsylvania - Poison Hemlock


Property Boundary
Municipal Boundary
Parcel Boundaries
Waterways
Public and Protected Land
Homeowner Association Open Space
Land Trust Conservation Easements
Municipal Open Space
Bridle La
Meadowview La
Plum Run
S Campus Dr
West Goshen
East Bradford
Birmingham Rd
Allegiance Dr
Tigue Rd
East Bradford
Westtown
Spring Line Dr
Barn Hill Rd
Trio La
Sharon Ct
General Howe Dr
S New St
Riflery Dr
Kimberly La
Muirfield Dr
Bucktail Wy
Edgemill Wy
Lenape Rd
Regimental Dr
General Greene Dr
Westtown
Birmingham
Forest Rd
Killarney La
Lyme Ct
East Bradford
Birmingham
Country Club Rd
1. Parcel boundary, municipal boundaries, roads, public and protected land, and streams from Chester County.
Disclaimer: This map is not a survey. The information imparted with this map is meant to assist Natural Lands Trust, Inc., describe the placement of certain retained, reserved, or excluded rights and to calculate acreage figures. Property boundaries, while approximate, were established using the best available information, which may have included: surveys, tax maps, field mapping using G.P.S., and/or orthophotos. Natural Lands Trust, Inc., makes no representation as to the accuracy of said property lines (or any other lines), and no liability is assumed by reason of reliance thereon. Use of this map for other than its intended purpose requires the written consent of Natural Lands Trust, Inc.
Natural Lands Trust
1031 Palmers Mill Road, Media, PA 19063
610-353-5587 ~ www.natlands.org
Public and Protected Land
STRODE'S BARN PROPERTY
Tax ID: 51-7-137.2 (+/- 6.9 acres)
East Bradford, Chester County, PA
N
0
500
1,000
Feet
Compiled By: KEB 06/06/16

INTRODUCTION

GENERAL PROPERTY DESCRIPTION

The 6.9-acre Strode's Barn Property (Property) is located in East Bradford Township, Chester County at the intersection of Lenape Road and Birmingham Road. The Property was acquired by the Township in 2012 to protect the historic barn on the Property as well as the surrounding natural resources. The Property is adjacent to Strode's Mill, another historic site. Historically, the Property was used for agriculture and was largely open fields through 1971, as evidenced by historical aerial photography (see *Historical Aerial Photography maps, 1937 and 1971*).

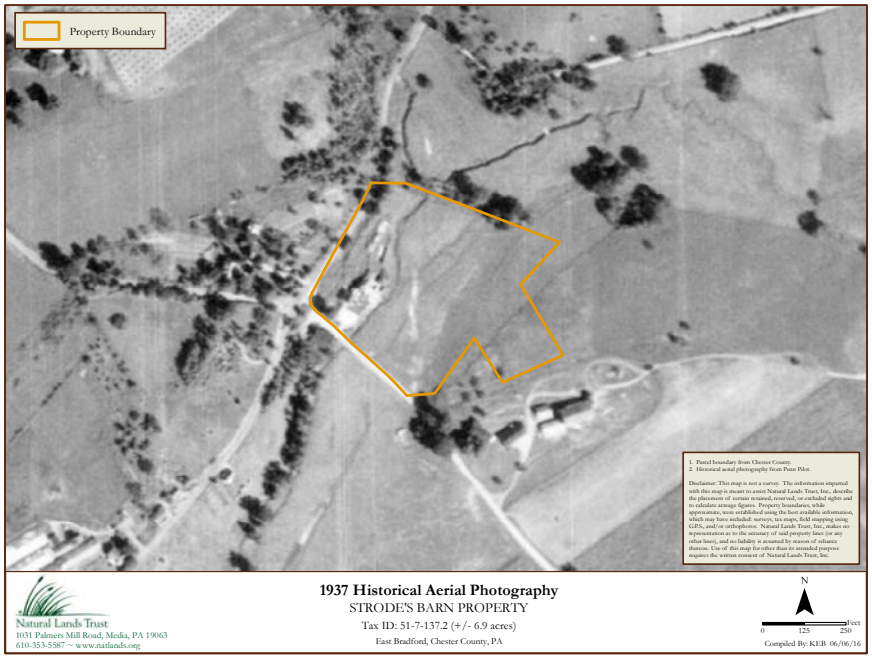
Natural Lands Trust staff, accompanied by Mandie Cantlin, Assistant Township Manager, and Tenley Adams, Property and Recreation Assistant, conducted a field inspection of the Property on June 22, 2016. The Property's natural resources were assessed and documented in field notes and photographs.

HISTORIC SIGNIFICANCE

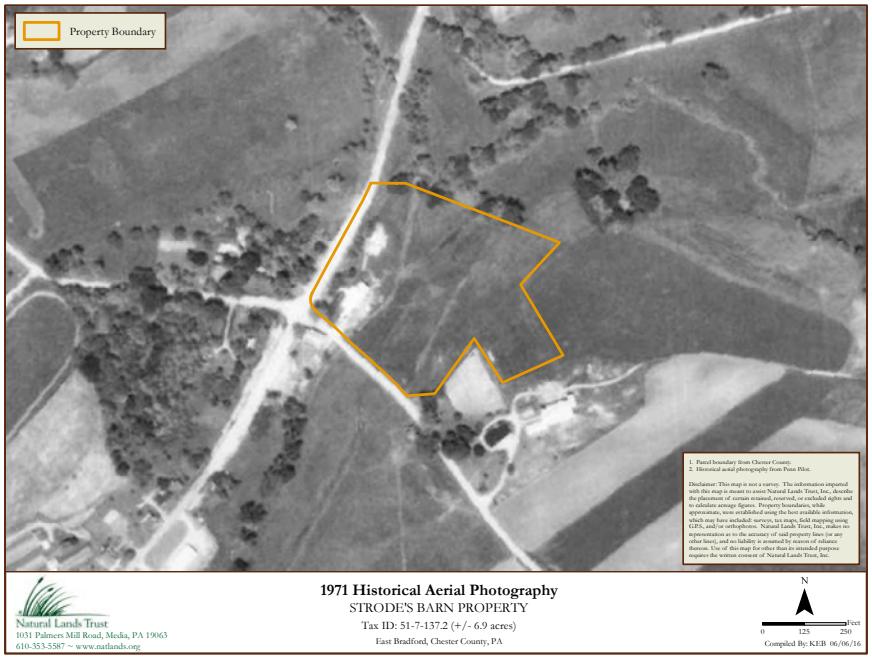
The Property was purchased by the Strode family in the mid 18th century and used as a farm and creamery. The Property is significant due to its proximity to the Battle of the Brandywine, which took place during the Revolutionary War. Prior to the battle, British Troops marched past the Strode Property along Birmingham Road and stopped in the area before continuing to the battle. The Barn, built in the early 18th century, represents another important chapter in the Property's history. In the mid-19th century, the Strode family began to produce pork and scrapple. The business was a staple of the community into the mid-20th century. The Friends of Strode's Barn and The Strode's Barn Study Committee are assessing the current state and potential future use of the Barn to ensure its continued existence as a key piece of the Township's history.

Protection of the open space around the Barn preserves the connection between open space and the history of the structure and Property. The

Colonial landscape was typically composed of farms with large open spaces, hedgerows, and minimal development. The landscape influenced the path of armies and tactical strategy during the Revolution as troops had to navigate hills and streams to gain the best possible advantage[1]. The agricultural history of the area is also reflected in the landscape, again through the presence of open fields and hedgerows. Protecting the landscape and managing the natural resources will preserve a key part of the area's history.



Strode's Barn



[1] Chester County Planning Commission and John Milner Associates, Inc. *The British Left Hook-Preparing for Battle: Sconnelltown & Strodes Mill Strategic Landscapes Plan, A Specific Plan for the Brandwine Battlefield Preservation Plan*. December 2015.

SITE ANALYSIS

NATURAL FEATURES

Topography

The elevation of the Property ranges from approximately 208 to 260 feet above mean sea level (see *Natural Features* map). The highest elevation is found along the eastern border. The lowest elevation is found within the stream valley along Plum Run. The Property generally slopes from both the east and west toward Plum Run in the center of the Property. Steep slopes (15–25% and greater than 25%) are found along Plum Run and on the sides of the eastern and western hills.

Water Resources

The Strode's Barn Property is located within the Upper Brandywine watershed. Approximately 545 feet of Plum Run crosses the Property, flowing from north to south. Plum Run is a tributary to the Brandywine Creek, which flows into the Christina River, a tributary of the Delaware River. Hydric soils and a 100-year floodplain accompany the stream and cover the entire valley within the Property. Accounts from neighbors during the public meetings indicate that the Property floods one to three times annually.

Plant Resources

Four vegetation communities are found within the Property (see *Vegetation* map). The remainder of the area is comprised of the barn site and a pump station and lawn. Communities are described below with invasive species highlighted in **bold** type.

Mixed Hardwood Woodland

The eastern third of the Property is a 2.7-acre Mixed Hardwood Woodland. This area is heavily dominated by invasive vines and shrubs.

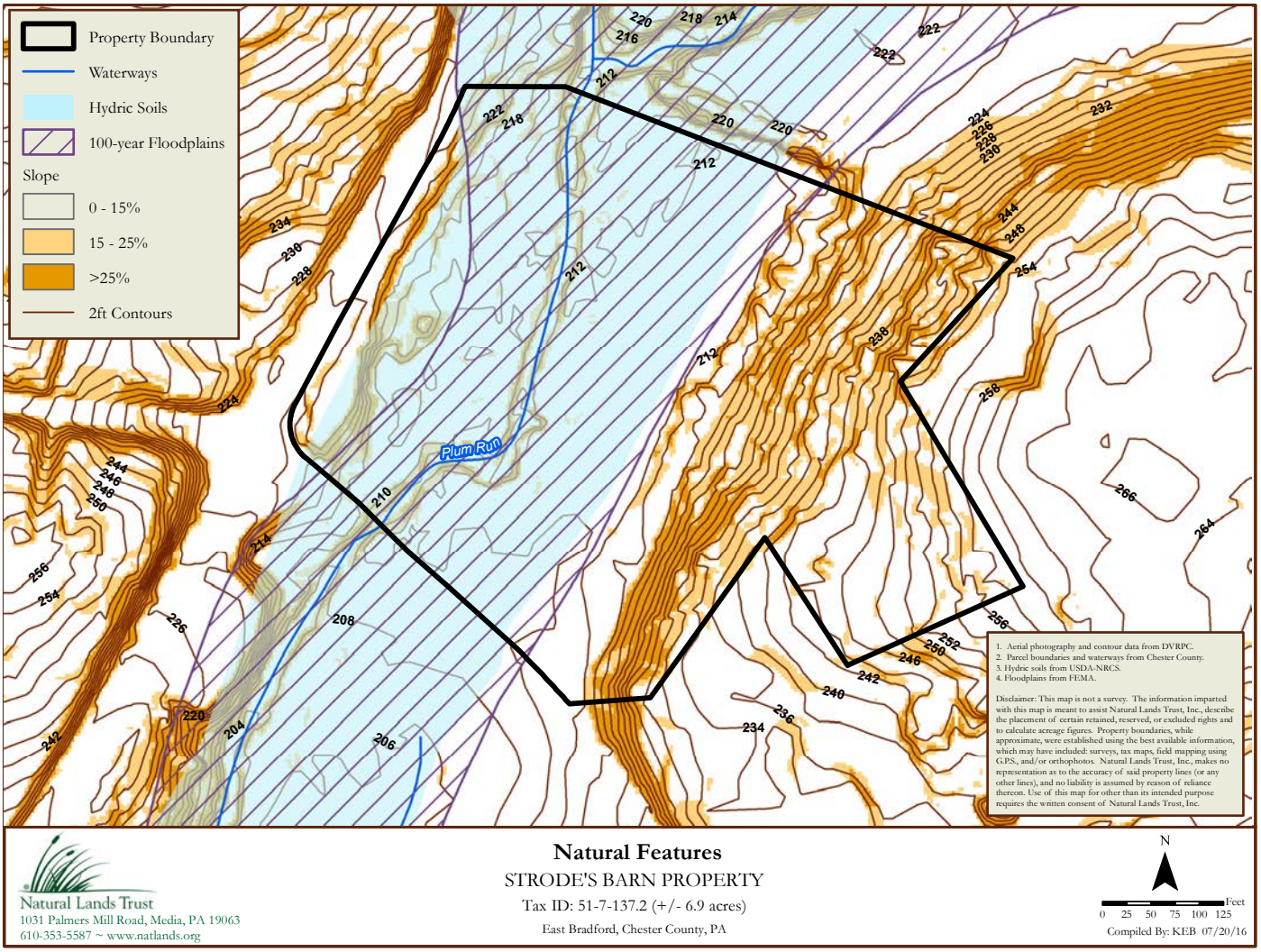
The canopy is composed of box-elder *(Acer negundo)*, sycamore *(Platanus occidentalis)*, black walnut *(Juglans nigra)*, black locust *(Robinia psuedoacacia)*, black cherry *(Prunus serotina)*, Eastern white pine *(Pinus strobus)*, and **princess-tree *(Palownia tomentosa)***. The understory includes **tree-of-heaven *(Ailanthus altissima)***. The shrub and vine layer includes brambles *(Rubus* spp.*)*, **multiflora rose *(Rosa multiflora)***, **porcelain-berry *(Ampelopsis brevipedunculata)***, **Japanese honeysuckle *(Lonicera japonica)***, **amur honeysuckle *(Lonicera maackii)***, **mile-a-minute *(Persicaria perfoliata)***, **oriental bittersweet *(Celastrus orbiculatus)***, and **wineberry *(Rubus phoenicolasius)***. The herbaceous layer is comprised of common milkweed *(Asclepias syriaca)*, fleabane *(Erigeron* sp.*)*, goldenrods *(Solidago* spp.*)*, dogbane *(Apocynum androsaemifolium)*, stinging nettles *(Urtica dioica)*, pokeweed *(Phytolacca americana)*, **Japanese stiltgrass *(Microstegium vimineum)***, **Canada thistle *(Cirsium arvense)***, **poison-hemlock *(Conium maculatum)***, **reed canary-grass *(Phalaris arundinacea)***, **crown-vetch *(Coronilla varia)***, and **garlic-mustard *(Alliaria petiolata)***.

Sycamore Floodplain Forest

The western forest is a Sycamore Floodplain Forest covering 2.1 acres. The canopy is dominated by sycamore. Other canopy species include box-elder and willow *(Salix* sp.*)*. The understory contains

black cherry. The shrub and vine layer is mainly comprised of invasive species. Species present include wild cucumber *(Echinocystis lobata)*, tearthumb *(Persicaria sagittata)*, **multiflora rose**, **wineberry**, **mile-a-minute**, and **porcelain-berry**. Plants present in the herbaceous layer include common milkweed, stinging nettle, mullein *(Verbascum thapsus)*, jewelweed *(Impatiens* sp.*)*, horsetail *(Equisetum* sp.*)*, **reed canary-grass**, **Canada thistle**, **poison-hemlock**, **crown-vetch**, Japanese **stiltgrass**, and **garlic-mustard**.

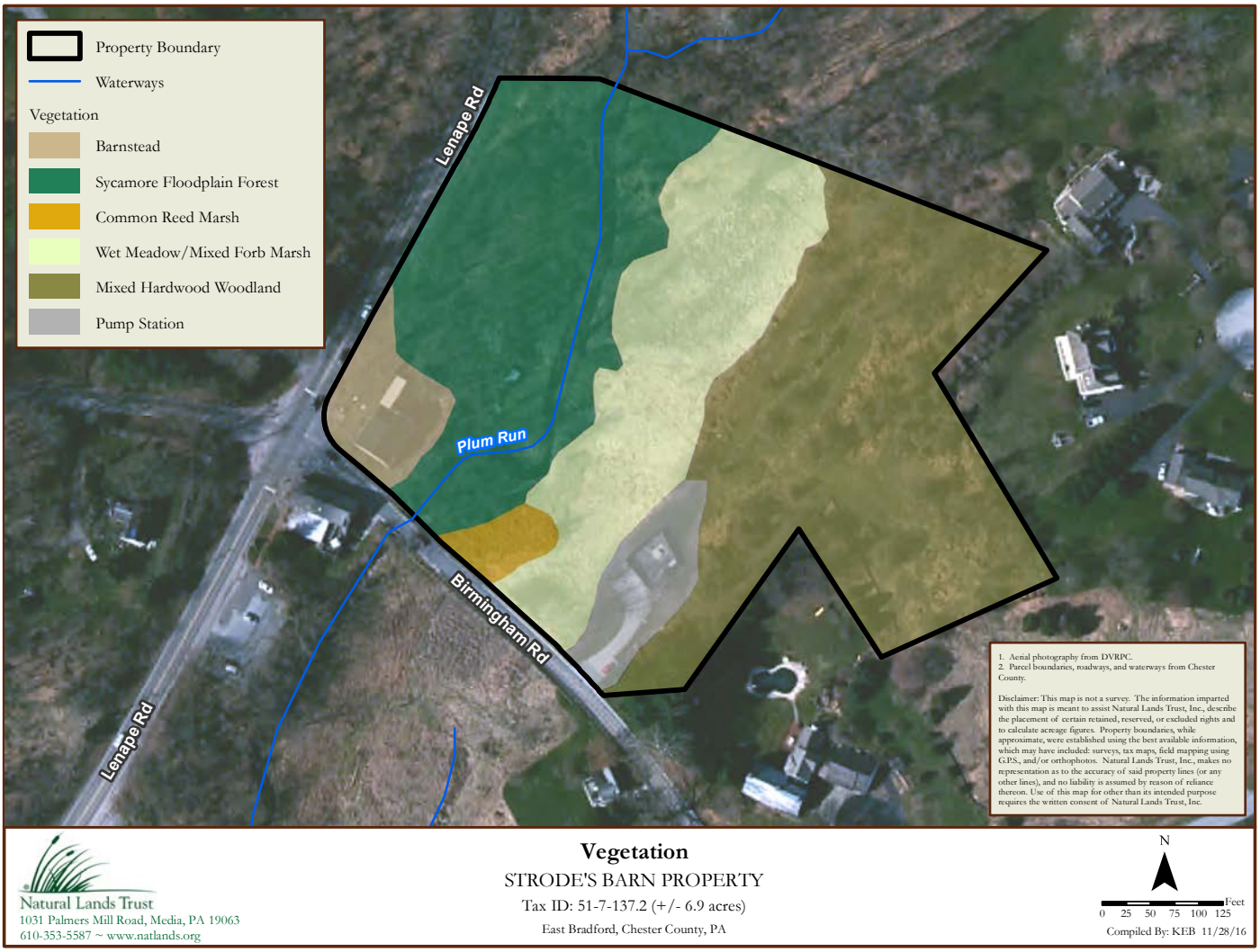
Sycamore Floodplain Forest



Wet Meadow / Mixed Forb Marsh

The center of the Property is a 1.5-acre Wet Meadow/Mixed Forb Marsh. **Reed canary-grass** dominates the Wet Meadow areas. The Mixed Forb Marsh areas are dominated by forbs (non-grass flowering plants). These include common cat-tail *(Typha latifolia)*, jewelweed, rushes *(Juncus* spp.*)*, sedges *(Carex* spp.*)*, tearthumb, duck-potato *(Sagittaria latifolia)*, sensitive fern *(Onoclea sensibilis)*, skunk-cabbage *(Symplocarpus foetidus)*, and **common reed *(Phragmites australis)***.

Wet Meadow / Mixed Forb Marsh



Common Reed Marsh

A 0.13-acre marsh containing a **common reed** monoculture is located at the southern boundary of the Property.

CURRENT USE

The majority of the Property is currently unused. The Barn was abandoned approximately 30 years ago and has been deteriorating since then. A pump station located along the southern boundary is used by the Township. A sewer line right-of-way (ROW) crosses the eastern part of the Property from north to south.

Common Reed Marsh

STEWARDSHIP ISSUES, OPPORTUNITIES, AND RECOMMENDATIONS

The following stewardship issues and opportunities were observed during a visit to the Property on June 22, 2016. They are described in the context of two overall stewardship goals for the Property's natural areas:

1. to protect and enhance plant communities that support resident and migratory wildlife; and
2. to provide a safe and enjoyable environment for passive recreation and historical interpretation.

Each stewardship issue and opportunity is followed by general recommendations to address the issue or fulfill the opportunity. The *Stewardship Issues and Opportunities* map shows the vegetation communities and recommended trail layout and amenities.

STEWARDSHIP GOALS AND STRATEGIES

Invasive Plants

Invasive plants are a common problem when stewarding natural lands. They pose a significant threat to natural environments as they out-compete native vegetation and can drastically reduce species diversity, leading to degraded wildlife habitat. Invasive plants edge out native species through a multitude of factors including early reproductive maturity, quick seed germination, long distance seed dispersal, and vegetative and sexual reproduction. They have the ability to adapt to varied habitats, have few predators, accumulate biomass quickly, and may also alter soil chemistry. Invasive plants tend to proliferate in disturbed areas faster than native species. They are not readily used as a food source by native animals, including deer. This can lead to overgrazing of native species, allowing invasive plants to further colonize the area.

The Strode's Barn Property has invasive plants throughout all vegetation communities. The Common Reed Marsh is the most heavily invaded area, as it is made up entirely of an invasive species—**common reed**. The Mixed Hardwood Woodland has the next highest density of invasive species, with **poison-hemlock** and the multitude of vines being of greatest concern. **Poison-hemlock** is highly toxic to people and animals and spreads rapidly. As such, it is the top priority for removal throughout the Property. Aggressive vines can smother seedlings and can increase a tree's vulnerability to blow-down by increasing the weight on the tree as well as increasing surface area, which can accumulate snow and ice, and act as a sail in high wind. The Sycamore Floodplain Forest has moderate levels of invasive species. Again, **poison-hemlock** and aggressive vines are of high concern. The Mixed Forb Marsh has the fewest invasive species present.

Recommendations

As invasive plants can decrease the dominance and diversity of native plants, as well as negatively impact wildlife habitat, we recommend the following strategies to control invasive species at the Strode's Barn Property. In general, it is best to address invasive plant control with a *top-down* (starting in the canopy and working down through understory, shrub, and groundcover layers), *least-first strategy* (starting in the least impacted areas). Exceptions to this include highly toxic and/or rapidly spreading invasive plants

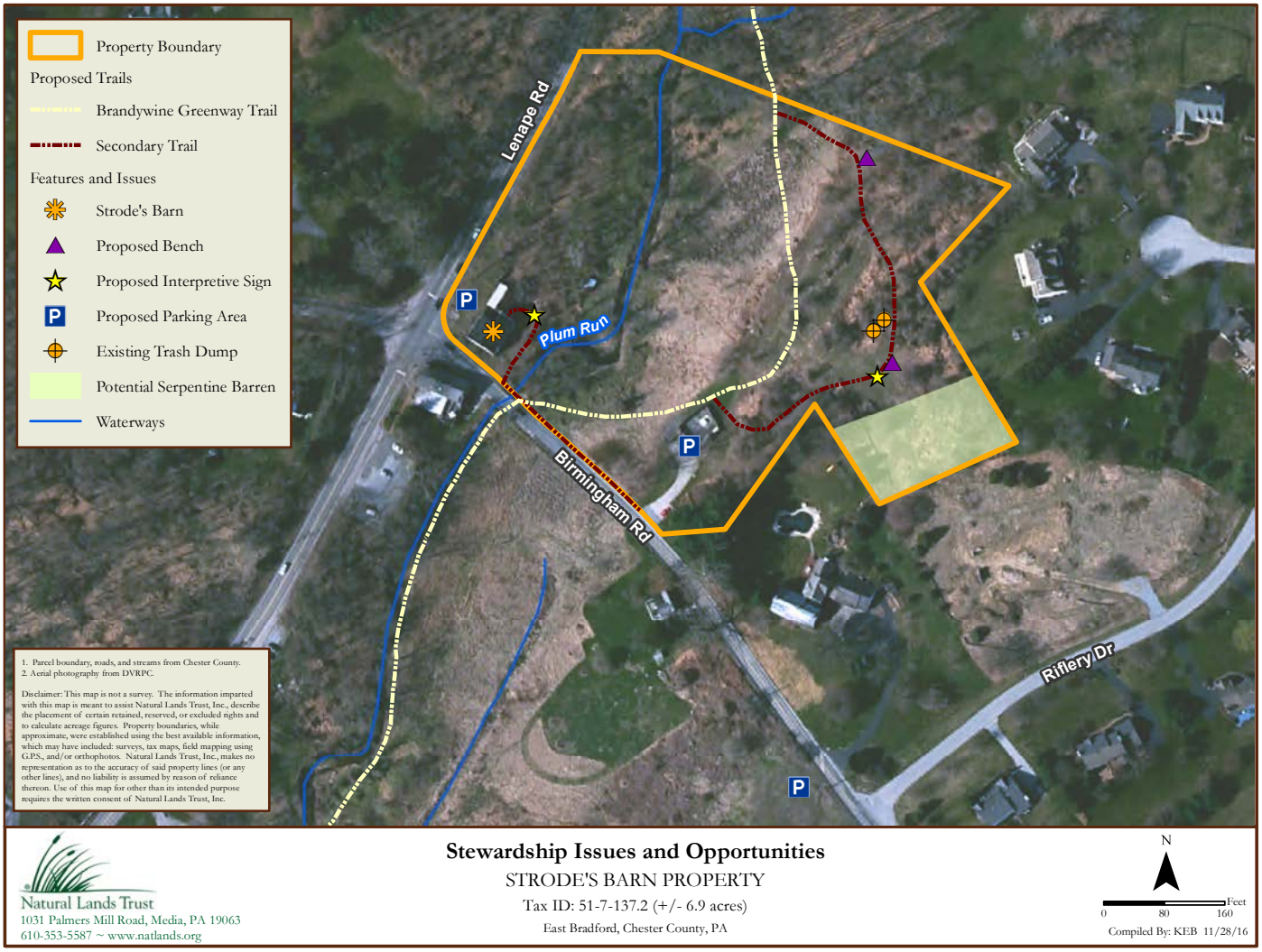
such as **poison-hemlock**, which has both qualities, and should be the top priority for control. Highly visible areas can be prioritized as they can increase community support for stewardship, such as around the Barn or near the road.

In addition to managing invasive plants already present, it is important to monitor for colonization by new invasive species. It is easier to control and eliminate a species if it is found early, when the population is small and requires far fewer resources to manage.

After removing invasive plants, install native species to restore habitat, deter recolonization by invasive plants, and control soil erosion on steep hillsides. The "Native Plant Materials" section of Natural Lands Trust's *Land for Life: A Handbook on Caring for Natural Lands* (2014) also provides a list of native species that are appropriate for the natural areas.

In order to successfully revegetate an area with native species, deer populations will have to be kept to a sustainable level. New plantings should be monitored for deer browsing. If needed, protect newly planted trees from deer browsing using tree shelters for plants less than 6 feet in height. For trees over 6 feet in height, tree wraps limit damage from buck rubbing. Newly planted shrubs should be protected with wire fencing. For information on deer management, see "Forest Sustainability" section below.

The following invasive species management recommendations for the Strode's Barn Property are listed in general order of priority. The "Invasive



Poison Hemlock and Canada Thistle

Porcelain-berry

Vegetation Management" section of Natural Lands Trust's *Land for Life: A Handbook on Caring for Natural Lands* (2014) also provides guidelines for monitoring and controlling invasive plants typical of the southeastern Pennsylvania landscape.

Any volunteer or contractor involved with invasive plant control should be able to distinguish native species from invasive species (e.g., native poison-ivy from non-native **oriental bittersweet**). In areas near water resources on the Property (the stream, marshes, hydric soils, floodplain), only herbicides approved for aquatic use (e.g., Rodeo) should be applied.

Where trade names are used, no endorsement is implied; Natural Lands Trust and the authors of this document are not liable for problems associated with the use of herbicides described therein.

- Monitor the Property for new colonies or invasive species and address new populations before they mature.
- Control **poison-hemlock** as the top priority throughout the entire Property. **Poison-hemlock** can be hand pulled using rubber gloves for small infestations. Larger populations should be treated with a glyphosate application (using wetland approved herbicides where needed) in the early spring prior to flowering.
- Control invasive plants in the least degraded vegetation communities first, i.e., (1) Mixed Forb Marsh, (2) Sycamore Floodplain Forest, (3) Mixed Hardwood Woodland, (4) Common Reed Marsh. *Vine removal and control within the Mixed Hardwood Woodlands, particularly along Birmingham Road could be prioritized as a highly visible, community building project.*
- Control invasive plants using a top-down approach, i.e., (1) vines and canopy trees, (2) understory trees, (3) shrubs, (4) herbaceous layer.
- In the meadow openings within the Mixed Hardwood Woodland, which are composed almost entirely of invasive plants, a forestry mower or goats can be used to clear vegetation.
- **Japanese honeysuckle**, **porcelain-berry**, and **oriental bittersweet** vines should be cut at ground level and at least 5 feet above the ground. Stumps can be treated with a wetland approved herbicide such as Rodeo from fall to mid-winter. Cutting vines is an appropriate project for volunteers.
- **Tree-of-heaven** should be treated with a triclopyr basal bark application during the fall. After the tree has died it can be removed by cutting if it poses a hazard. Cutting before the tree is dead will result in extensive root sprouting. The recent discovery of a native pathogen of **tree-of-heaven** (a verticillium wilt) holds promise to address this species without herbicides. If available, bringing infected wood from another site will speed up the spread of this pathogen.
- **Princess-tree** can be treated with a basal bark application of tryclopyr.
- **Mile-a-minute** weed can be controlled by repeated mowing or herbicide application. Smaller infestations may be hand pulled. Hand pulling **mile-a-minute** (while wearing gloves) is an appropriate project for volunteers.
- **Wineberry** and **shrub honeysuckle** should be cut and then treated with an herbicide. Stumps can be treated with triclopyr or sprouted foliage can be treated with glyphosate.
- **Multiflora rose** can be managed by allowing the rose rosette disease to reduce populations.
- Hand pull **garlic-mustard** in early spring when the plants have flowered. Plants should be bagged and removed from the site to prevent spreading more seed. In heavily invaded areas the basil rosette can be sprayed with glyphosate, which would be followed by hand pulling of any remaining plants approximately two weeks later. Hand pulling **garlic-mustard** is an appropriate volunteer project.
- **Reed canary-grass** may be controlled by cover and mulch, or wetland approved herbicides. Hand pulling or edging out by shading or fast

growing plants may be effective for newer populations. Prescribed grazing may also be effective.

- **Japanese stiltgrass** should be mowed or hand pulled in late summer or can be treated with glyphosate.
- For small colonies, **Canada thistle** can be controlled by hand pulling, being sure to include the taproot, or cutting during the early spring. For larger colonies, Crossbow can be used with moderate results. Hand pulling **Canada thistle** is an appropriate volunteer project (volunteers should wears gloves).
- **Crownvetch** can be controlled by treating with herbicide once in mid-summer and once in the fall.
- **Common-reed** can be controlled by applying a wetland approved herbicide such as Rodeo either directly to the stalks or by first cutting the stalks and then applying a drip application of herbicide inside the cut.
- Plant native species once invasive plants are removed to restore habitat, as well as prevent soil erosion and recolonization by invasive species; protect plantings with tree shelters or fencing. Monitor for deer browsing.

Water Resources

Plum Run is an important natural resource both within the Property and throughout the surrounding area. The 2008 *Restoration Plan for Plum Run Watershed*, created as part of the Red Streams Blue Program by the Brandywine Red Clay Alliance, outlines restoration efforts throughout the watershed. The *Restoration Plan* gives recommendations for issues directly upstream and downstream of the Property, but does not indicate any issues on the Property. The general recommendations from the *Restoration Plan* include improving the riparian buffer.

Riparian buffers are vegetated areas along waterways that protect water quality and quantity. By having an established root system and providing vegetative cover, riparian buffers can lower water temperature, promote infiltration and groundwater recharge, mitigate flooding, filter nutrients, and provide food and habitat for aquatic organisms. A riparian buffer will be of increasing importance as the effects of climate change are felt. Climate change is predicted to increase temperatures and change current precipitation patterns, with higher overall rainfall and more intense events, but with rainfall concentrated in the spring and fall and potential drought conditions over the summer. A riparian buffer could help mitigate these impacts on water quality and flow by maintaining lower water temperatures (through stream shading) and by increasing infiltration into groundwater reserves that slowly feed waterways throughout the year.

In order for riparian buffers to adequately perform these functions, the U.S. Forest Service recommends at minimum a 95-foot buffer, broken into three different sections. Following their recommendations, the 15 feet closest to the stream is undisturbed forest; this will shade the stream to maintain cool water temperatures and provide detritus.

Plum Run

The next 60 feet is managed forest to promote nutrient filtration and prevent excess sediment from reaching the stream. Trees and shrubs in this zone are periodically pruned to promote rapid growth, which results in increased intake of nutrients that would otherwise enter the waterway. The last 20 feet is grasses or a grass and shrub mix to reduce water runoff. Stream bars and conservation swales can help increase stormwater infiltration further.

Recommendations

The Mixed Forb Marsh provides an effective buffer. The adjacent forest and woodland provide some additional buffering as well. There is an area between the Mixed Forb Marsh and Sycamore Mixed Hardwood Woodland which is a non-marsh area with no trees. Enhancing the riparian buffer by removing invasive plants and adding trees and shrubs in this open area would help protect and improve water quality.

- Protect the existing riparian buffer by controlling invasive plants (see "Invasive Plants" section above) and managing deer populations (see "Deer Management" below).
- Plant trees and shrubs in the gap between the Mixed Forb Marsh and Mixed Hardwood Woodlands.

Deer browsing

Forest Sustainability

A healthy, sustainable forest has well established canopy, understory, shrub and vine, and herbaceous layers. Within each layer a diverse range of plants provide important ecological functions, such as water filtration and habitat for wildlife. A forest with high biological and structural diversity can more easily recover from short- and long-term disturbance events, such as droughts or strong storm events that cause blow-down. New plantings in structural gaps or where there is low diversity can improve forest sustainability, but should only be done after invasive plants in the area are controlled.

Deer overabundance is a common problem in the region which can affect forest health negatively. Deer consume seeds and browse on seedlings, shrubs, and herbaceous plants. A high deer population can decimate structural layers and prevent regeneration. Because they prefer native plants over invasive species, deer can increase the dominance of invasive plants. As the structural and biological diversity is compromised, other wildlife, especially songbirds, is affected by habitat loss. Overabundant deer populations can have direct effects on people as well, as they cause vehicular accidents and are a critical link in the life cycle of the tick that spreads Lyme disease.

Recommendations

In order to determine if the deer population is too high, the Property should be monitored for signs of browsing and lack of regeneration of native plants. If deer populations are unsustainable, a deer management program should be considered. The recommended deer density to perpetuate a healthy native forest with a diversity of native shrubs and wildflowers is 10 deer per forested square mile (one deer per 64 acres). As the Property is only 6.9 acres, only a portion of which is forested, it cannot sustainably support any deer population. Due to the close proximity of residential houses, a public deer management program is not recommended. Instead, a

cull can be implemented—ideally in coordination with adjoining landowners—to reduce the deer population. The cull may have to be repeated over multiple years to reach a sustainable level. As any deer management program will take time to implement and achieve results, new plantings should be protected with tree shelters or fencing (see "Invasive Plants" section above for more information).

- Plant a diverse range of native species in areas where invasive plants have been removed or regeneration of native plants is low. Protect plantings with tree shelters or fencing.
- Monitor the Property for signs of deer browsing. If high levels of browsing are noted, contact the USDA about a deer cull using professional sharpshooters.

Serpentine Barrens

The eastern and western hills are underlain by serpentine geology. This geology can support the unique and globally rare serpentine barrens vegetation community. The soil which sustains this community is very shallow, low in nutrients, and high in metals (magnesium, chromium), producing harsh conditions that prohibit many plants from colonizing. Of the few species that can tolerate the harsh conditions, many are species of concern. Fires and grazing often helped maintain these communities as barrens by preventing soil accumulation and invasion by successional species[2].

Recommendations

Restoration of serpentine plant communities should only be considered if: 1) there is historical proof that they once existed on this site; and 2) serpentine bedrock is within six inches of ground level. A historic occurrence of serpentine communities would ensure that the seed bank would include serpentine adapted species. To create a serpentine barren from a currently vegetated area, the topsoil needs to be scraped off down to mineral soil and the existing vegetation needs to be removed. The area could then be vegetated with serpentine barren species from the seed bank, augmented by plantings. Maintenance of this area would require more resources as management would be needed to prevent the encroachment of the surrounding woodlands. The potential area for a serpentine barren at the Strode's Barn Property only includes the top of the eastern hill. The western hill should not be considered for conversion as it includes the Barn and provides an even smaller area within which to work.

Wildlife Enhancement

Wildlife habitat can be enhanced by leaving dead wood and brush piles within the forest and woodland as they can serve as dens for wildlife and reintroduce nutrients into the soil. Dead standing trees (snags) should also be left if they are located in areas that are not heavily used by the public. Snags benefit wildlife by providing cavities and loose bark for nesting and shelter, perching sites, and decaying wood for insects that provide food for birds such as woodpeckers and nuthatches. Visitors should also be reminded to keep their dogs on leashes through educational signage. This will help prevent wildlife from being disturbed by off-leash dogs, particularly during breeding season.

Recommendations

- Provide educational signage for visitors related to the effects of leaving their dogs off-leash—including disturbance of wildlife and other visitors.
- Leave brush piles, dead wood, and snags where they are not hazardous to visitors.

Hazards and Unwarranted Use

There is a potential for hazard trees (trees that due to structural defects could fall in part or whole on a "target" such as a road, residence, or person) along roadways, trails and other locations where the public might pause for any extended time—such as a sign, bench, or the Barn area. As the landowner, East

[2] Zimmerman, E., T. Davis, G. Podniesinski, M. Furedi, J. McPherson, S. Seymour, B. Eichelberger, N. Dewar, J. Wagner, and J. Fike (editors). 2012. *Terrestrial and Palustrine Plant Communities of Pennsylvania, 2nd Edition*. Pennsylvania Natural Heritage Program, Pennsylvania Department of Conservation and Natural Resources, Harrisburg, Pennsylvania.

Bradford Township is responsible for preventing trees and branches from falling into the adjacent right-of-way on the bordering roads through the monitoring and removal of hazard trees. The Property abuts Lenape and Birmingham Roads along two sides and will have at least one trail through the woodlands; these areas should be monitored regularly. The forest around the Barn should also be monitored, as this area will be a gathering point for the public. Vines growing on the trees in these areas create a greater risk as they can both kill trees and increase their susceptibility to wind due to increased weight.

Unwarranted use is another concern for the Property given the large extent of road frontage. Although only a small amount of trash was noted during the site visit, it is best to address this issue as soon as possible to deter further occurrences.

Recommendations

- Monitor potential hazard tree areas—public roads, trails, the Barn, benches, and interpretive signs—by foot once each year and following severe storms. Address potential hazard trees (prune or remove) as needed. Ideally, a certified arborist should be hired to complete this task and address any identified hazards through pruning or removal. See the "Hazard Tree Monitoring Program" section of the Natural Lands Trust's *Land for Life: A Handbook on Caring for Natural Lands* (2014) for information about procedures for hazard tree monitoring.
- Remove vines from trees near roads, trails, or public gathering areas (see "Invasive Plants" section above).
- Monitor and remove scattered trash regularly.

Boundary Encroachment

Proper maintenance of property boundaries is an important stewardship priority on open space parcels. Undeveloped properties are often subject to unwarranted and frequently unintentional use by neighbors due to poorly marked boundaries. These activities may include dumping of yard waste or placements of sheds, fences and other structures on the Township property. The Township has already posted boundary signs on the Property boundary to address the potential for unwarranted use.

Recommendations

- Maintain boundary postings to assist in preventing encroachment issues and to inform passing motorists about the location of the public open space.

PASSIVE RECREATION AND HISTORIC INTERPRETATION

The Strode's Barn Property is an important site for passive recreation due to its rich history and future inclusion in the Brandywine Greenway.

The Brandywine Greenway Trail is planned to cross Plum Run above the Strode's Barn Property and traverse the Property from north to south along the sewer right-of-way (see *Stewardship Issues and Opportunities* map). Specifications for the Trail should follow the plan designed by the Brandywine Greenway. Secondary trails can be added to connect to points of interest on the Property—one climbing the eastern hill to a scenic overlook and one from the Trail to the Barn. If the Birmingham Road bridge is rebuilt with a pedestrian walkway, the second trail can run along the road and connect to the Barn. Because the Brandywine Greenway Trail will be crossing Birmingham Road, traffic calming measures should be implemented along Birmingham Road.

The Property is included in the County's plans for the Brandywine Battlefield area as a potential interpretive site with a visitor center[3]. If the Barn does become a visitor center, it will offer a greater opportunity to show visitors how the landscape and the history of the site influenced each other. Interpretive signage along the trails can connect visitors to the landscape and history of the area. In the overlook area, an interpretive sign that describes how the landscape has changed from a farm field to its current state and how it was used at

[3] Chester County Planning Commission and John Milner Associates, Inc. *Brandywine Battlefield Preservation Plan: Revolution in the Peaceful Valley*. December 2013.

different points in time can help visitors understand the evolution of the Property. Alternatively, the sign could focus on how the landscape would have looked at a specific point in time, such as during the Revolutionary War. A second interpretive sign on the trail leading to the Barn can describe the history of the structure. Other opportunities for interpretive signs include:

- How the landscape influenced troop movement
- The importance of streams and fords during the Battle of the Brandywine and the condition of streams then and now
- How the British used the area as a resting point before battle

The Township should consider installing a property entrance sign along Birmingham Road near the trail entrance. The entrance area could also include a kiosk with trail map and a dog station. Beautification plantings such as flowering trees and shrubs could be installed in this area. In addition, benches would be appropriate at the scenic overlook and along the Brandywine Greenway Trail as desired.

Opportunities for parking on the Property are very limited due to wetlands, hydric soils, and poor access options. Installation of a small parking lot between the Barn and Lenape Road can be considered if regrading between the road and Barn occurs during Barn demolition. Another option would be to expand the paved area around the pump station. This would only be feasible if the area is redesigned to either move the pumps or submerge them. A grass parking area, used only during events, may be a viable option, as it would not have a significant impact on the natural resources. Other areas along Birmingham Road should be explored for possible parking locations, including the municipal parcel southeast of the Property (dependent upon any restrictions) since it is close to the Property and the planned path of the Brandywine Greenway Trail. If this option is chosen, traffic calming measures will be needed to allow for safe access to the Trail. Alternatively, an events only parking area can be designated in the mown area around the pump station. Which option the Township chooses may depend on the type and level of use the Barn receives; higher visitation levels may necessitate a paved parking lot off site.

Pump station and potential events parking area

Recommendations

- Install the Brandywine Greenway Trail as determined by the Brandywine Greenway Plan
- Create secondary trails that connect to the Barn and an overlook area
- Install interpretive signage to connect the history of the area to the landscape
- Install a property entrance sign with a kiosk and dog station
- Install benches

VOLUNTEERS

Volunteers can be a great asset when managing conserved lands as many stewardship tasks are well suited to them. These can include cutting and pulling invasive plants as well as providing routine trail

maintenance. One of the most important roles for volunteers is to be eyes and ears on the Property. By having an active volunteer presence, unwarranted uses can be more quickly identified and addressed.

Outreach to community members, especially neighbors, should be conducted to generate a stewardship volunteer base. Conservation oriented groups such as school clubs, hiking groups, and birding groups could be contacted for organized volunteer days. Environmentally themed holidays, such as Earth Day and Arbor Day, are great times to recruit volunteers for one day projects.

Natural Lands Trust has developed methods to involve trained and invested volunteers. Similar volunteer opportunities can be implemented at the Property for engaging the community. Effective methods of engaging volunteers include:

Volunteer Groups

Volunteer groups can engage a range of audiences, such as work groups, sports teams, school classes, and civic organizations, in a day of service. Designed to both educate and engage volunteers, group service days are an opportunity for all ages to take an active role in caring for the Property through tasks such as invasive plant control and tree planting. Service groups should be considered an important part of volunteer programming.

Friends of Strode's Barn Stewardship Corps

A dedicated volunteer group could benefit the Property by providing regular care and maintenance under the direction of the Township. Additionally, a Friends group could monitor the Property for inappropriate uses, trail issues, or trash problems and report any concerns to the Township.

Natural Lands Trust's Force of Nature Volunteer Training Program

The Friends group could benefit from training similar to Natural Lands Trust's Force of Nature volunteer program. NLT's Force of Nature volunteers have participated in an in-depth training program, preparing them to assist with stewardship and visitor outreach as either a Trail Ambassador or Team Leader. Trail Ambassadors walk the trails, greeting visitors and helping with property care. Team Leaders lead volunteer groups or help with ongoing volunteer projects in our offices and on our preserves.

Recommendations

- Establish a Friends of Strode's Barn Stewardship Corps. Train volunteers in common stewardship practices
- Host events and group work days for community members and groups

FUTURE ACQUISITIONS

To improve the environmental and recreational benefits of the Property, emphasis should be placed on expanding connections to other land held as conservation areas. Connecting preserved lands can increase habitat area and preserve the historic and cultural landscape. In this case, the Brandywine Greenway Trail would benefit from protection of connecting lands to create a scenic corridor for the trail. The Property is in close proximity to other preserved land including homeowner association open space, municipal open space, and conservation easements. Undeveloped land that is either adjacent to the Strode's Barn Property or can provide a connection to other preserved lands should be priority preservation targets.

PUBLIC PARTICIPATION

Public meetings were held at the East Bradford Township building to connect with and gather input from community members. The first public meeting was held June 15, 2016 and the second meeting was held July 7, 2016. Background information about the Property, including current resources and past uses and issues, was presented to community members. Feedback about desired uses was then solicited from the audience. Community members were also encouraged to submit input after the meeting. In general, discussion focused on the history of the Property, parking, stream restoration, invasive plants, and the Brandywine Greenway Trail.

STEWARDSHIP PRIORITIES AND IMPLEMENTATION SCHEDULE

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
FIRST YEAR			
Invasive Plants			
1	Control **poison-hemlock**	Spring	Township Staff or Contractor
1	Monitor the Property for new colonies of invasive species	Anytime	Township Staff
1	Control invasive plants in the least degraded vegetation communities first: (1) Mixed Forb Marsh, (2) Sycamore Floodplain Forest, (3) Mixed Hardwood Woodland, (4) Common Reed Marsh)	Spring - Based upon the vegetation communities habitat value priority ranking, begin focused invasive removal using techniques described below.	Township Staff
1	Control **oriental bittersweet**, **porcelain-berry**, and **Japanese honeysuckle**; prioritize highly visible areas for volunteer projects	Anytime - cut vines at ground level and at 5 feet above the ground; Fall - cut and herbicide stumps	Township Staff or Volunteers
2	In heavily invaded forest canopy gaps, use Fecon mower or goats to remove invasive species	Anytime	Township Staff or Contractor
2	Control **mile-a-minute**	Spring - pull with gloves; Summer and Fall - mow repeatedly or herbicide	Township Staff or Volunteers
2	Control **shrub honeysuckle** and **wineberry**	Fall - cut to stump and herbicide	Township Staff
2	Control **garlic-mustard**	Early Spring and summer - pull, bag, and remove from site or treat with glyphosate using wick application	Township Staff or Volunteers

[1] 1 = high priority; 2 = mid-priority; 3 = low priority
[2] Must have PA Pesticide Applicator Certification to apply herbicides on public property

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Invasive Plants, *continued*			
2	Control **Japanese stiltgrass**	Late summer - mow or hand pull	Township Staff or Contractor
2	Control **reed canary-grass**	Fall	Township Staff or Contractor
2	Control **Canada thistle**	Spring - hand pull, cut, or apply spot herbicide	Township Staff or Volunteers
3	Control **crown-vetch**	Mid-Summer and Fall - herbicide	Township Staff
2	Revegetate after invasive removal	Spring or Fall	Township Staff or Volunteers
N/A	**Multiflora rose**	Can be managed by allowing the rose rosette disease to naturally reduce the population	N/A
Deer Management			
1	Monitor plantings for deer over-browsing; if indicative of unsustainable population levels, consider implementing a cull	Year-round	Township Staff
Wildlife Enhancement			
2	Leave dead wood and snags for wildlife habitat	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
2	Leave brush piles for wildlife	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
Hazards and Debris			
1	Monitor for hazard trees	Annually and after severe storms	Township Staff
1	Remove scattered trash	Year-round	Township Staff or Volunteers
2	Monitor for new signs of trash	Year-round	Township Staff or Volunteers
Boundary Encroachment and Illegal Use			
1	Add property boundary signs where lacking	Anytime	Township Staff
1	Monitor for signs of encroachment	Annually	Township Staff

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Volunteers			
2	Host events and group work days for community members and groups	Anytime	Township Staff
SECOND YEAR			
Invasive Plants			
1	Control **poison-hemlock**	Spring	Township Staff or Contractor
1	Monitor the Property for new colonies of invasive species	Anytime	Township Staff
1	Control invasive plants in the least degraded vegetation communities first: (1) Mixed Forb Marsh, (2) Sycamore Floodplain Forest, (3) Mixed Hardwood Woodland, (4) Common Reed Marsh)	Spring - Based upon the vegetation communities habitat value priority ranking, begin focused invasive removal using techniques described below.	Township Staff
1	Control **oriental bittersweet**, **porcelain-berry**, and **Japanese honeysuckle**	Anytime - cut vines at ground level and at 5 feet above the ground; Fall - cut and herbicide stumps	Township Staff or Volunteers
2	In heavily invaded forest canopy gaps, use Fecon mower or goats to remove invasive species	Anytime	Township Staff or Contractor
2	Control **tree-of-heaven**	Fall - basal bark application	Township Staff
2	Control **Princess-tree**	Fall - basal bark application	Township Staff
2	Control **mile-a-minute**	Spring - pull with gloves; Summer and Fall - mow repeatedly or herbicide	Township Staff or Volunteers
2	Control **shrub honeysuckle** and **wineberry**	Fall - cut to stump and herbicide	Township Staff
2	Control **garlic-mustard**	Early Spring and summer - pull, bag, and remove from site or treat with glyphosate using wick application	Township Staff or Volunteers
2	Control **Japanese stiltgrass**	Late summer - mow or hand pull	Township Staff or Contractor
2	Control **reed canary-grass**	Fall	Township Staff or Contractor

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Invasive Plants, *continued*			
2	Control **Canada thistle**	Spring - hand pull, cut, or apply spot herbicide	Township Staff or Volunteers
3	Control **crown-vetch**	Mid-Summer and Fall - herbicide	Township Staff
3	Control **common-reed**	Fall - herbicide	Township Staff or Contractor
2	Revegetate after invasive removal	Spring or Fall	Township Staff or Volunteers
N/A	**Multiflora rose**	Can be managed by allowing the rose rosette disease to naturally reduce the population	N/A
Forest Communities			
2	Plant trees and shrubs in areas of low regeneration; protect with tree tubes	Spring or Fall	Township Staff or Volunteers
Deer Management			
1	Monitor plantings for deer over-browsing; if indicative of unsustainable population levels, consider implementing a cull	Year-round	Township Staff
Wildlife Enhancement			
2	Leave dead wood and snags for wildlife habitat	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
2	Leave brush piles for wildlife	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
3	Install educational signage about effects of dogs off-leash on wildlife	Anytime	Township Staff
Passive Recreation			
2	Install the Brandywine Greenway Trail	Anytime	Township Staff or Volunteers
3	Install secondary trails	Anytime	Township Staff or Volunteers
Hazards and Debris			
1	Monitor for hazard trees	Annually and after severe storms	Township Staff
2	Monitor for new signs of trash	Year-round	Township Staff or Volunteers

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Boundary Encroachment and Illegal Use			
1	Monitor for signs of encroachment	Annually	Township Staff
Volunteers			
2	Host events and group work days for community members and groups	Anytime	Township Staff

THIRD YEAR			
Invasive Plants			
1	Control **poison-hemlock**	Spring	Township Staff or Contractor
1	Monitor the Property for new colonies of invasive species	Anytime	Township Staff
1	Control invasive plants in the least degraded vegetation communities first: (1) Mixed Forb Marsh, (2) Sycamore Floodplain Forest, (3) Mixed Hardwood Woodland, (4) Common Reed Marsh)	Spring - Based upon the vegetation communities habitat value priority ranking, begin focused invasive removal using techniques described below.	Township Staff
1	Control **oriental bittersweet**, p**orcelain-berry**, and **Japanese honeysuckle**	Anytime - cut vines at ground level and at 5 feet above the ground; Fall - cut and herbicide stumps	Township Staff or Volunteers
2	Control **tree-of-heaven**	Fall - basal bark application	Township Staff
2	Control **Princess-tree**	Fall - basal bark application	Township Staff
2	Control **mile-a-minute**	Spring - pull with gloves; Summer and Fall - mow repeatedly or herbicide	Township Staff or Volunteers
2	Control **shrub honeysuckle** and **wineberry**	Fall - cut to stump and herbicide	Township Staff
2	Control **garlic-mustard**	Early Spring and summer - pull, bag, and remove from site or treat with glyphosate using wick application	Township Staff or Volunteers
2	Control **Japanese stiltgrass**	Late summer- mow or hand pull	Township Staff or Contractor

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Invasive Plants, *continued*			
2	Control **reed canary-grass**	Fall	Township Staff or Contractor
2	Control **Canada thistle**	Spring - hand pull, cut, or apply spot herbicide	Township Staff or Volunteers
3	Control **crown-vetch**	Mid-Summer and Fall - herbicide	Township Staff
3	Control **common-reed**	Fall - herbicide	Township Staff or Contractor
2	Revegetate after invasive removal	Spring or Fall	Township Staff or Volunteers
N/A	Multiflora rose	Allow the rose rosette disease to naturally reduce the population	N/A
Riparian Buffer			
2	Plant trees and shrubs in gap between the Mixed Forb Marsh and Mixed Hardwood Woodlands	Spring or Fall	Township Staff or Volunteers
Forest Communities			
2	Plant trees and shrubs in areas of low regeneration; protect with tree tubes	Spring or Fall	Township Staff or Volunteers
Deer Management			
1	Monitor plantings for deer over-browsing; if indicative of unsustainable population levels, consider implementing a cull	Year-round	Township Staff
Serpentine Barren			
3	Consider converting eastern hill; if desired begin conversion process	Anytime	Township Staff
Wildlife Enhancement			
2	Leave dead wood and snags for wildlife habitat	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
2	Leave brush piles for wildlife	Anytime - in areas not accessed by visitors	Township Staff or Volunteers

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Passive Recreation			
1	Maintain trails	Year-round	Township Staff or Volunteers
2	Install property entrance sign with kiosk and dog station	Anytime	Township Staff
3	Install interpretive signage	Anytime	Township Staff
Hazards and Debris			
1	Monitor for hazard trees	Annually and after severe storms	Township Staff
2	Monitor for new signs of dumping	Year-round	Township Staff or Volunteers
Boundary Encroachment and Illegal Use			
1	Monitor for signs of encroachment	Annually	Township Staff
Volunteers			
2	Host events and group work days for community members and groups	Anytime	Township Staff
3	Establish a Friends of Strode's Barn Volunteer Corps	Anytime	Township Staff
ON-GOING			
Invasive Plants			
1	Control **poison-hemlock**	Spring	Township Staff or Contractor
1	Monitor the Property for new colonies or invasive species	Anytime	Township Staff
1	Control invasive plants in the least degraded vegetation communities first: (1) Mixed Forb Marsh, (2) Sycamore Floodplain Forest, (3) Mixed Hardwood Woodland, (4) Common Reed Marsh)	Spring - Based upon the vegetation communities habitat value priority ranking, begin focused invasive removal using techniques described below.	Township Staff

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Invasive Plants, *continued*			
1	Control **oriental bittersweet**, **porcelain-berry**, and **Japanese honeysuckle**	Anytime - cut vines at ground level and at 5 feet above the ground; Fall - cut and herbicide stumps	Township Staff or Volunteers
2	Control **tree-of-heaven**	Fall - basal bark application	Township Staff
2	Control **Princess-tree**	Fall - basal bark application	Township Staff
2	Control **mile-a-minute**	Spring - pull with gloves; Summer and Fall - mow repeatedly or herbicide	Township Staff or Volunteers
2	Control **shrub honeysuckle** and **wineberry**	Fall - cut to stump and herbicide	Township Staff
2	Control **garlic-mustard**	Early Spring and summer - pull, bag, and remove from site or treat with glyphosate using wick application	Township Staff or Volunteers
2	Control **Japanese stiltgrass**	Late summer - mow or hand pull	Township Staff or Contractor
2	Control **reed canary-grass**	Fall	Township Staff or Contractor
2	Control **Canada thistle**	Spring - hand pull, cut, or apply spot herbicide	Township Staff or Volunteers
3	Control **crown-vetch**	Mid-Summer and Fall - herbicide	Township Staff
3	Control **common-reed**	Fall - herbicide	Township Staff or Contractor
2	Revegetate after invasive removal	Spring or Fall	Township Staff or Volunteers
N/A	**Multiflora rose**	Can be managed by allowing the rose rosette disease to naturally reduce the population	N/A
Riparian Buffer			
2	Plant trees and shrubs in gap between the Mixed Forb Marsh and Mixed Hardwood Woodlands	Spring or Fall	Township Staff or Volunteers

PRIORITY[1]	STEWARDSHIP RECOMMENDATIONS	SEASON	WHO COULD IMPLEMENT?[2]
Forest Communities			
2	Plant trees and shrubs in areas of low regeneration; protect with tree tubes	Spring or Fall	Township Staff or Volunteers
Serpentine Barren			
3	Consider converting eastern hill; if desired begin conversion process	Anytime	Township Staff
Deer Management			
1	Monitor plantings for deer over-browsing; if indicative of unsustainable population levels, consider implementing a cull	Year-round	Township Staff
Wildlife Enhancement			
2	Leave dead wood and snags for wildlife habitat	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
2	Leave brush piles for wildlife	Anytime - in areas not accessed by visitors	Township Staff or Volunteers
Passive Recrearion			
1	Maintain trails	Year-round	Township Staff or Volunteers
Hazards and Debris			
1	Monitor for hazard trees	Annually and after severe storms	Township Staff
2	Monitor for new signs of dumping	Year-round	Township Staff or Volunteers
Boundary Encroachment and Illegal Use			
1	Monitor for signs of encroachment	Annually	Township Staff
Volunteers			
2	Host event and group work days for community members and groups	Anytime	Township Staff
3	Establish a Friends of Strode's Barn Volunteer Corps	Anytime	Township Staff

APPENDIX

Invasive Plants in Pennsylvania

Poison Hemlock

Conium maculatum

Pedro Tenorio-Lezama
www.forestryimages.org

Background:

In the 1800s, poison hemlock was brought to the United States from Europe as an ornamental. In ancient times, it was probably used to poison Socrates, a famous Greek philosopher.

Range:

Poison hemlock is native to Europe, western Asia and North Africa. It is now wide-spread throughout much of North America. It has also been introduced to other continents, such as South America and Australia.

pennsylvania
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
www.dcnr.state.pa.us

Description:

Poison hemlock is a biennial herb with hollow, purple-spotted stems that can reach eight feet in height. Its finely dissected leaves emit a foul, parsnip-like odor when crushed. Plants begin as a rosette of leaves and flower in the second year of growth. The small, white flowers are borne in umbrella-shaped clusters.

Eric Coombs, Oregon Dept. of Ag.
www.forestryimages.org

Habitat:

This plant commonly occurs in dense stands along roadsides, field margins, irrigation ditches and waste areas. It also invades native plant communities in riparian woodlands, open floodplains and along stream banks.

Biology and Spread:

A single poison hemlock plant can produce over 30,000 seeds. These seeds can adhere to farm machinery, vehicles, fur and clothing, as well as be carried by water, and to a limited extent, wind. Poison hemlock is capable of rapid establishment, particularly in disturbed sites.

Ecological Threat:

Poison hemlock can be a tenacious weed, particularly in moist sites. As a pioneer species, it quickly colonizes disturbed sites, displacing natives. All parts of the plant, especially the seeds, are extremely poisonous to humans and livestock.

John D. Byrd, Mississippi State U.
www.forestryimages.org

How to Control this Species:

Physical

Hand-pulling works best for wet soils with small infestations. Because poison hemlock is not a perennial, removal of the entire root system is not necessary.

Mowing or cutting the plant close to the ground just before flowering is often effective, but may require retreatment if new growth is produced at the base.

Poison hemlock remains toxic for several years after being pulled. Ensure that the material is kept out of reach of children and wildlife.

Chemical

The application of herbicides, such as glyphosate and 2,4-D can effectively control large infestations.

Complete eradication may be difficult if a viable seedbank is present.

Barry Rice, sarracenia.com
www.forestryimages.org

Pedro Tenorio-Lezama
www.forestryimages.org

Look-A-Likes:

Poison hemlock is sometimes confused with the invasive giant hogweed (*Heracleum mantegazzianum*) and our native water hemlock (*Cicuta maculata*). Deaths have occurred from mistaking the roots for wild carrots.

Steve Dewey, Utah State University
www.forestryimages.org

References:

Center for Invasive Species and Ecosystem Health: http://www.invasive.org/browse/subinfo.cfm?sub=4365#maps

USDA Forest Service: http://www.invasive.org/weedcd/pdfs/wow/poison-hemlock.pdf

For More Information:

DCNR Invasive Species Site: http://www.dcnr.state.pa.us/conservationscience/invasivespecies/index.htm

DCNR Invasive Exotic Plant Tutorial for Natural Lands Managers: http://www.dcnr.state.pa.us/forestry/invasivetutorial/poison_hemlock.htm

Natural Lands Trust

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Media, PA 19063
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APPENDIX B

PLUM RUN 18-66 SITE WETLAND DELINEATION REPORT (JUNE 2020)

Plum Run Trail Site
Wetland Delineation Report

East Bradford Township
Chester County
Pennsylvania

June 18, 2020

Prepared for:
East Bradford Township
666 Copeland School Road
West Chester, PA 19380

CLAUSER
environmental llc

Prepared by:
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1.0 INTRODUCTION

Clauser Environmental, LLC has prepared this wetland delineation report for East Bradford Township to document the locations and characteristics of jurisdictional wetland habitats and "waters of the United States"/ "waters of the Commonwealth" that exist on the Plum Run Trail Site.

2.0 SITE DESCRIPTION

The Plum Run Trail Site is located in East Bradford Township, Chester County, Pennsylvania and appears on the West Chester, Pennsylvania U.S. Geological Survey (USGS) 7.5-minute quadrangle (Latitude 39.93059° N and Longitude 75.61373° W) (Appendix A). The area of investigation for this project includes approximately 46.87 acres. Of the area of investigation, 32.57 acres were delineated by Del Val Soil & Environmental Consultants, Inc. A Preliminary Jurisdictional Determination (JD) was issued by the United States Army Corps of Engineers (USACE) on March 18, 2016 (Appendix F). Clauser Environmental, LLC completed the wetland delineation on the remaining 14.30 acres of the area of investigation. Clauser Environmental, LLC reviewed the wetland boundaries that are presented here in the field in the Spring of 2020 and confirmed that the wetland boundaries presented here are still accurate. A major stream restoration project was completed in the Spring of 2020 on the site by Brandywine Red Clay Alliance. The surrounding parcels are primarily residential, open space, and commercial. The area of investigation includes a section of Plum Run Watershed that drains from east to west across the property. The Pennsylvania Code, Title 25, Chapter 93, Water Quality Standards assigns Plum Run including its tributaries within the area of the site a water quality designation of Warm Water Fishery, Migratory Fishery (WWF, MF). Plum Run is not listed as a watercourse that supports natural trout reproduction by the Pennsylvania Fish and Boat Commission (PFBC).

2.1 Topography and Drainage

The Plum Run Trail Site is comprised of gently sloping to nearly flat topography. Review of the West Chester, Pennsylvania USGS 7.5-minute quadrangle map revealed that the existing topography on the site ranges between approximately 200 and 310 feet in elevation above mean sea level (Appendix A). Surficial drainage is conveyed off-site by overland flow and Plum Run.

2.2 Soil Survey

The Soil Survey of Chester County (USDA, Web Soil Survey) indicates Chrome silt loam, 8 to 15 percent slopes (ChC2), Chrome silt loam, 15 to 25 percent slopes (ChD2), Codorus silt loam (Co), Cokesbury silt loam, 0 to 3 percent slopes (CpA), Gladstone gravelly loam, 3 to 8 percent slopes (GdB), Gladstone gravelly loam, 8 to 15 percent slopes (GdC), Gladstone-Parker gravelly loams, 15 to 25 percent slopes (GeD), Glenelg

silt loam, 8 to 15 percent slopes (GgC), Hatboro silt loam (Ha), Neshaminy silt loam, very deep over mafic gneiss, 8 to 15 percent slopes (NvC), Parker gravelly loam, 3 to 8 percent slopes (PaB), Parker gravelly loam, 8 to 15 percent slopes (PaC), Parker gravelly loam, 15 to 25 percent slopes (PaD), Parker gravelly loam, 25 to 35 percent slopes (PaE), and Urban land-Udorthents, schist and gneiss complex, 9 to 25 percent slopes (UugD). The Chrome series consists of well drained soils that are typically found on hills. The parent material consists of residuum weathered from serpentinite. The Codorus series consists of moderately well drained soils with a depth of greater than 60 inches to bedrock, high permeability that formed on floodplains and toeslopes. The Cokesbury series consists of poorly drained soils that typically are found on toeslopes and footslopes. The parent material consists of colluvium derived from granite and gneiss. The Gladstone series consists of well drained soils with a depth of greater than 60 inches to bedrock, very low to high permeability that formed on the tops and sides of hills. The Gladstone-Parker series consists of well drained soils with a depth of 60 to 100 inches to Lithic bedrock, a moderately high to high permeability that formed on the tops and sides of hills. The Glenelg series consists of well drained soils located on hillslopes and hills. The parent material consists of residuum weathered from mica schist. Hatboro soils consist of deep, poorly drained soils found on floodplains and valleys. The Neshaminy series consists of well drained soils on hillslopes. The parent material is residuum weathered from diabase. The Parker series consists of somewhat excessively drained soils on hill and uplands. The parent material consists of residuum weathered from granite and gneiss. Urban lands consist of typically well drained soils that are heavily impacted by human activities. The Chester County Natural Resource Conservation Service lists Co, CpA, Ha, and UugD as being or having inclusions of hydric soils.

2.3 National Wetlands Inventory Map

A review of the U.S. Fish and Wildlife Service's National Wetland Inventory (NWI) Map for the West Chester, PA USGS 7.5-minute quadrangle indicates three previously identified water resources located on the Plum Run Trail Site (Appendix B). One wetland area that contains the east branch of Plum Run and another area that lies along the southern border of the site are mapped as palustrine, emergent, *Phragmites australis*, temporarily flooded (PEM5A) wetlands. Plum Run is mapped as a riverine, upper perennial, unconsolidated bottom, permanent (R3UBH) watercourse. NWI maps typically do not show all of the wetland or watercourse resources within any given area and are designed for general planning purposes only.

3.0 METHODS

Clauser Environmental, LLC used the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region to collect data related to the soils, vegetation, and hydrology of the site (U.S. Army Corps of Engineers 2012). The methodology was in accordance with the on-site routine criteria outlined in the *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory 1987)

in conjunction with the 1992 Regulatory Guidance Letter. Aaron S. Clauser, PhD, a qualified wetland biologist, conducted on-site investigations on January 16 and 19, 2017 and May 21, 2020 (Appendix G). At each sample point, a four-stratum vegetation sampling design was utilized. Each point included a plot of approximately 30 ft. radius for trees and woody vines, a 15 ft. radius for saplings/shrubs, and a 5 ft. radius for herbs. Within each plot, dominant species were determined by visually estimating the percent cover of each species within the plot and then applying the 50/20 rule. The dominant species were identified (Newcomb 1977, Rhoads and Block 2000, 2005). The identified plant species were assigned a wetland indicator status from the national wetland plant list (Lichvar *et al.* 2016). Hydrophytic species are those wetland plants with indicator statuses of OBL (obligate wetland), FACW (facultative wetland), or FAC (facultative). Species listed as FACU (facultative upland) and UPL (upland) are more indicative of upland areas and generally do not occur in wetlands. Some species are not considered to be reliable indicators of wetland or upland conditions; these are designated as NI (no indicator). Soils were examined by using a sharp-shooter shovel to a depth of approximately 20 inches or refusal. Soil colors were determined using Munsell Soil Color Charts. Hydric soils develop from periodically, seasonally or permanently saturated soil conditions and generally exhibit the characteristics of indicators identified in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (U.S. Army Corps of Engineers 2012).

Indicators of wetland hydrology (saturated or inundated soils) along with signs of previous prolonged inundation during the growing season were also noted at each sampling location. All wetland habitats were classified according to the U.S. Fish and Wildlife Service, *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin *et al.* 1979). Field data sheets are located in Appendix C. Photographs are provided in Appendix D.

Clauser Environmental, LLC flagged and located the wetland boundary and sample points using a Trimble Geo7X Global Positioning System (GPS) receiver with H-Star and Floodlight enabled decimeter accuracy configuration during the site visit. The instrument smart settings were used per manufacturer's recommendation. Logging interval was set at 1 second with typically a minimum of 30 readings collected at each point. Data collected in the field was downloaded to a personal computer for differential correction using GPS Pathfinder Office software (Version 5.6). Correction files were obtained from dedicated base stations located in Coatesville, York and Philadelphia, Pennsylvania; Mount Laurel, New Jersey; Wilmington, Delaware; and Baltimore, Maryland. Mission planning, parameter settings, and post processing typically allow an accuracy of 10 centimeters (Trimble Navigation 2014). The precision of GPS collected data is subject to variation caused by canopy cover, atmospheric interference, time of day, and satellite geometry. GPS collected data should not be used in situations involving high property values, controversial projects, or in situations where legal questions may arise (Hook et al. 1995).

4.0 RESULTS AND DISCUSSION

The following descriptions provide a summary of each sample location. The investigation determined that ten wetlands and five streams exist within the area of investigation on the Plum Run Trail Site.

5.0 SAMPLE LOCATIONS

Sample Points 1, 2, 3, 7, 8, 9, and 10 lacked dominant hydrophytic vegetation, hydric soil characteristics and/or primary or secondary indicators of wetland hydrology. These sample points were determined to be within non-wetland areas.

Sample Points 4, 5, 6, and 11 had dominant hydrophytic vegetation, hydric soil characteristics and primary/secondary indicators of wetland hydrology. These sample points were determined to be within wetland areas. Field data sheets are included within Appendix C and include specific hydrology, vegetation, and soils information for each sample point.

6.0 WETLANDS

Clauser Environmental, LLC's investigation determined that ten wetlands exist within the area of investigation on the Plum Run Trail Site. Wetlands 3, 4, 5, 6, 11, and 12 are palustrine emergent (PEM) wetlands. Wetlands 7, 8, and 9 are palustrine emergent/ shrub scrub (PEM/SS) wetlands. Wetland 10 is a palustrine emergent/ palustrine forested (PEM/FO) wetland.

Wetland	Latitude	Longitude	Class	Acreage	Drains to	Notes
3	39.929853 N	75.615585 W	PEM	1.59	Plum Run	
4	39.930231 N	75.611238 W	PEM	0.07	E. Branch Plum Run	
5	39.930003 N	75.610613 W	PEM	0.38	E. Branch Plum Run	
6	39.931311 N	75.607877 W	PEM	2.44	E. Branch Plum Run	continues off-site
7	39.930801 N	75.609620 W	PEM/SS	0.04	E. Branch Plum Run	
8	39.931006 N	75.608731 W	PEM/SS	0.08	E. Branch Plum Run	
9	39.931287 N	75.606858 W	PEM/SS	0.04	E. Branch Plum Run	continues off-site
10	39.929987 N	75.612396 W	PEM/FO	0.014	E. Branch Plum Run	
11	39.930920 N	75.613636 W	PEM	0.016	E. Branch Plum Run	
12	39.929627 N	75.616408 W	PEM	0.007	Plum Run	

7.0 "WATERS OF THE UNITED STATES" / "WATERS OF THE COMMONWEALTH"

Clauser Environmental, LLC's investigation determined that five watercourses exist on the Plum Run Trail Site. The five watercourses include Plum Run and unnamed tributaries to Plum Run. Plum Run, including its tributaries, has a Pennsylvania Code, Title 25, Chapter 93 designation of Warm Water Fishery, Migratory Fishery (WWF, MF). Plum Run is not listed as a watercourse that supports natural trout reproduction by the Pennsylvania Fish and Boat Commission (PFBC).

Stream	Latitude	Longitude	Class	Drains to	Notes
1	39.935048 N	75.611321 W	R2UB	Plum Run	continues offsite
3	39.931047 N	75.616231 W	R4UB	UNT to Plum Run	
4	39.930616 N	75.610068 W	R2UB	South Branch of Plum Run	continues offsite
5	39.929645 N	75.611302 W	R4UB	UNT to South Branch of Plum Run	continues offsite
6	39.931169 N	75.607047 W	R4UB	UNT to South Branch of Plum Run	continues offsite

8.0 CONCLUSIONS

Clauser Environmental, LLC identified ten wetlands and five streams on the Plum Run Trail Site. Wetlands, man-made ponds, and stream channels, intermittent or perennial, are regulated by the United States Army Corps of Engineers (USACOE) and the Pennsylvania Department of Environmental Protection (PADEP) and any encroachments, fills, or crossing of these areas will require the proper State and/or Federal permits.

9.0 DISCLAIMER

Clauser Environmental, LLC, to the best of its ability, accurately delineates the wetlands and watercourses on a site based on current regulations and the field investigator's experience with the public agencies. Clauser Environmental, LLC cannot guarantee that the agencies will concur with this estimate of the limits of the delineated areas. All mention of regulations and laws are Clauser Environmental, LLC's interpretation of state and federal regulations and/or laws, and should not be taken as legal advice.

10.0 LITERATURE CITED

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* US Department of Interior, Fish and Wildlife Service, Biological Services Program FWS/OBS-79/31, 103 pp.

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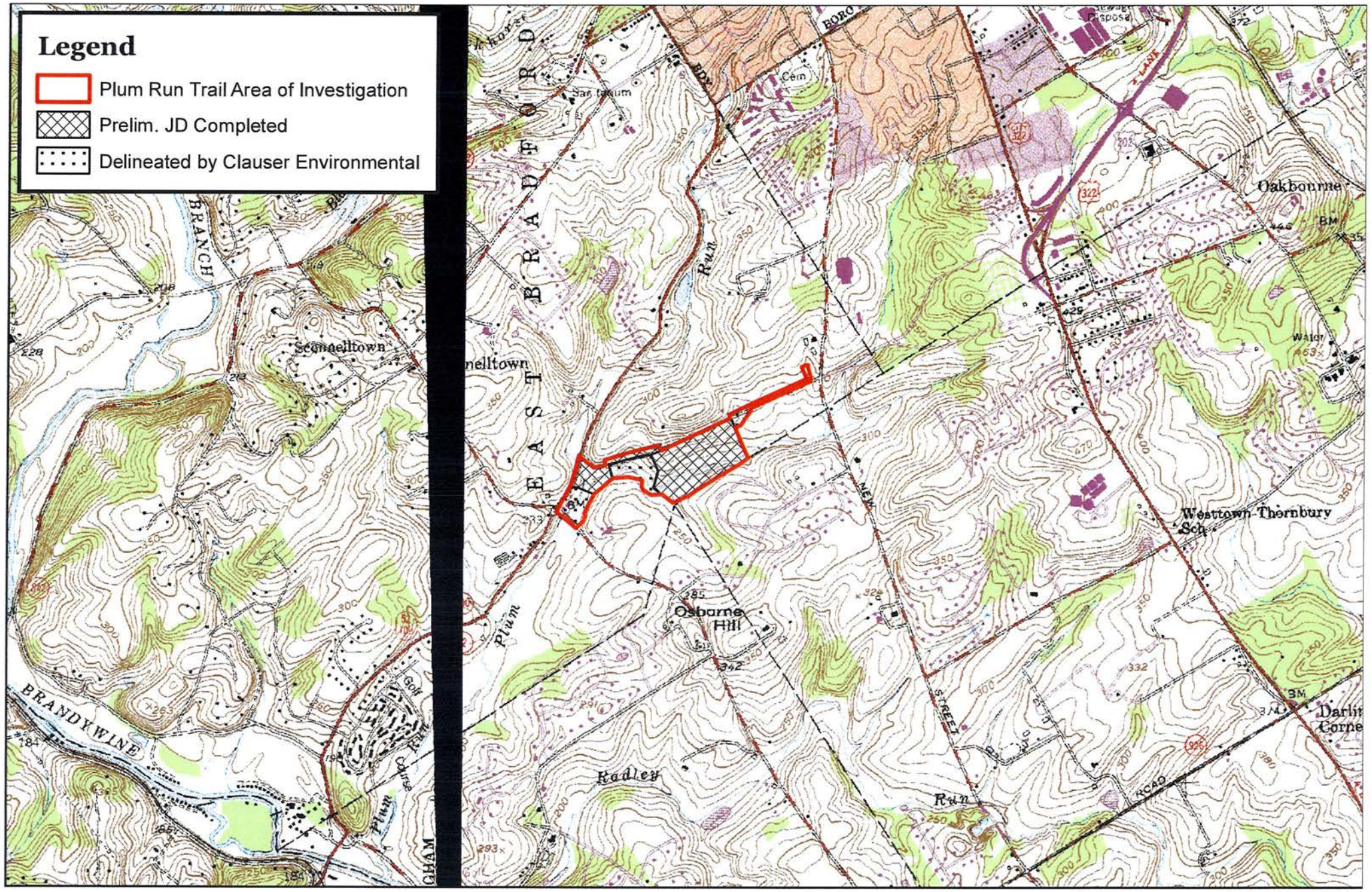
USDA, NRCS Web Soil Survey. *https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx.* Viewed on December 28, 2016.

APPENDIX A

SITE LOCATION MAP



Data Sources:
Clauser Environmental, LLC
Del Val Soil and Environmental Consultants, Inc.
USGS

Plum Run Trail
Project Location Map
Unionville and West Chester, PA
USGS 7.5-Minute Quadrangles

N
W E
S

0 750 1,500 3,000 Feet

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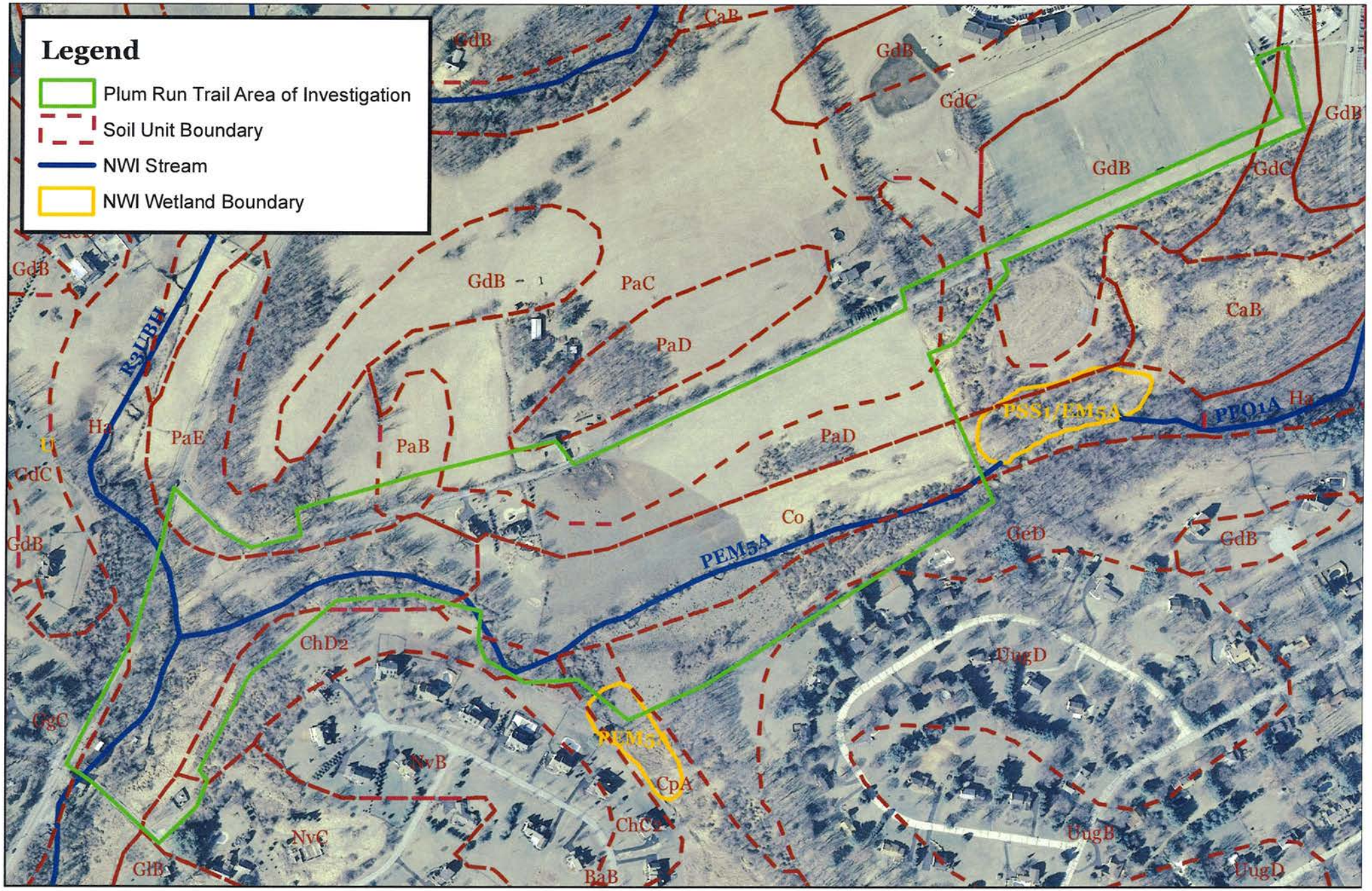
APPENDIX B

SOILS AND NWI WETLANDS MAP



Data Sources:
Clauser Environmental, LLC
Chester County GIS Department
www.pasda.psu.edu

Plum Run Trail
Soils and NWI Map
East Bradford Township
Chester County, PA

N
W E
S

0 200 400 800 Feet

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APPENDIX C

FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/16/17

Applicant/Owner: BRC State: PA Sampling Point: 1

Investigator(s): Aaron S. Clauser, PhD Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Convex Slope (%): <5%

Subregion (LRR or MLRA): S Lat: 39.93061°N Long: 75.61399°W Datum: NAD83

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ (No)	**Is the Sampled Area within a Wetland?** Yes _____ (No)
Hydric Soil Present?	Yes _____ (No)	
Wetland Hydrology Present?	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)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): 0"
Water Table Present?	Yes _____	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >20"

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: 1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Galium triflorum	50	X	FACU
2. Allium vineale	10		FACU
3. Urtica dioica	20	X	FACW
4. Persicaria sagittata	20	X	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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 (circled)

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

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/3	100	—	—	—	—	Sandy loam	—

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes _____ (No)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/16/17

Applicant/Owner: BRC State: PA Sampling Point: 2

Investigator(s): Aaron S. Clauser, PhD Section, (Township), Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): None Slope (%): < 5%

Subregion (LRR or MLRA): S Lat: 39.93059°N Long: 75.61373°W Datum: NAD83

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	(No)	**Is the Sampled Area within a Wetland?** Yes ____ (No)
Hydric Soil Present?	Yes ____	(No)	
Wetland Hydrology Present?	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)
- ___ 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)

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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):
Water Table Present?	Yes ____	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):

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: 2

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	30	X	FACU
2. Crataegus sp.	5		
3.			
4.			
5.			
6.			
7.			
8.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	10	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	100	X	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Celastrus orbiculatus	10	X	FACU
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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 (circled)

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

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR4/4	100	—	—	—	—	silt loam	moist

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes ___ (No)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/16/17

Applicant/Owner: BRC State: PA Sampling Point: 3

Investigator(s): Aaron S. Clausen, PhD CPESC Section, (Township), Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Concave Slope (%): <5%

Subregion (LRR or MLRA): S Lat: 39.92992°N Long: 75.6123°W Datum: NAD83

Soil Map Unit Name: ChD2 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ (No)	**Is the Sampled Area within a Wetland?** Yes _____ (No)
Hydric Soil Present?	Yes _____ (No)	
Wetland Hydrology Present?	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)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): 0"
Water Table Present?	Yes _____	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >20"

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: 3

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	35	X	OBL
2. Acer negundo	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	20	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	50	X	FAC
2. Solidago juncea	20	X	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. Celastrus orbiculatus	15	X	FACU
2.			
3.			
4.			
5.			
6.			
	15	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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.)

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100	—	—	—	—	silty loam	
4-20	10YR 4/3	100	—	—	—	—	Sandy loam	

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): 20"

Hydric Soil Present? Yes ___ (No)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/16/17

Applicant/Owner: BRC State: PA Sampling Point: 4

Investigator(s): Aaron S. Clauser, PhD, CPESC Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor - old channel Local relief (concave, convex, none): Concave Slope (%): 5-10%

Subregion (LRR) or MLRA): S Lat: 39.93000°N Long: 75.61235°W Datum: NAD83

Soil Map Unit Name: ChO2 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland #10

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): 0"
Water Table Present?	Yes X	No ___	Depth (inches): 6"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 1"

Wetland Hydrology Present? Yes X 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: 4

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix nigra	50	X	OBL
2. Acer negundo	20	X	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	5	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	

Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Celastrus orbiculatus	25	X	FACU
2.			
3.			
4.			
5.			
6.			
	25	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species		x 2 =	
FAC species	20	x 3 =	60
FACU species	30	x 4 =	120
UPL species		x 5 =	
Column Totals:	100 (A)		230 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

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

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

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 or equal to 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.)

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	2.5Y 3/1	60	5YR 3/4	40	C	M	sandy loam	
5-20	2.5Y 3/1	95	2.5Y 2.5/1	5	C	M	sandy	

[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 (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)
- X 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)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): 7.20

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/16/17

Applicant/Owner: BRC State: PA Sampling Point: 5

Investigator(s): Aaron S. Clausen, PhD, CRESC Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor - swale Local relief (concave, convex, none): Concave Slope (%): 5-10%

Subregion (LRR or MLRA): S Lat: 39.93093°N Long: 75.61361°W Datum: NAD83

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland 11 PEM

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): 0"
Water Table Present?	Yes ___	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 10"

Wetland Hydrology Present? Yes X 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: 5

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	10	X	FACU
2. Platanus occidentalis	10	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	20	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.	—	—	—
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Persicaria sagittata	50	X	OBL
2. Microstegium vimineum	30	X	FAC
3. Impatiens capensis	20	X	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.	—	—	—
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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.)

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 3/1	95	10YR 3/6	5	C	M	Silt loam	Moist
15-20	10YR 5/2	90	5YR 3/4	10	C	M	Silt loam	Moist

[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 (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)
- X 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)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester / Chester Sampling Date: 1/19/17

Applicant/Owner: BAC State: PA Sampling Point: 6

Investigator(s): Aaron S. Clausen, PhD, CPESC Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): <5%

Subregion (LRR or MLRA): S Lat: 39.92903°N Long: 75.61616°W Datum: NAD83

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland 11

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- X 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)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0"
Water Table Present?	Yes ____	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes X 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: 6

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	5	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	2	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	2	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	85	X	FACW
2. Phragmites australis	5		FACW
3. Persicaria Sagittata	5		OBL
4. Impatiens capensis	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.	—	—	—
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.6% (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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 or equal to 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.)

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					silt loam	
4-10	2.5Y 4/2	90	10YR 4/6	10	C	M	silt loam	
10-20	2.5Y 3/1	98	2.5Y 4/3	2	C	M	silt loam	

[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 (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)
- X 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)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes X No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: West Chester/Chester Sampling Date: 1/19/17

Applicant/Owner: BBC State: PA Sampling Point: 7

Investigator(s): Aaron S. Clauser, PhD, CPESC Section, (Township) Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Convex Slope (%): < 5%

Subregion (LRR or MLRA): S Lat: 39.92904°N Long: 75.61647°W Datum: NA083

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____ (No)	**Is the Sampled Area within a Wetland?** Yes ____ (No)
Hydric Soil Present?	Yes ____ (No)	
Wetland Hydrology Present?	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)
- ___ 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)

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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0"
Water Table Present?	Yes ____	No X	Depth (inches): 720"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 720"

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

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	25	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	25 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	15	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Allium vineale	25	X	FACU
2. Humulus japonicus	65	X	FACU
3. Microstegium vimineum	10		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. Celastrus orbiculatus	25	X	FACU
2.			
3.			
4.			
5.			
6.			
	25 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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.)

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/3	100	—	—	—	—	Silt loam	

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): 7 2011

Hydric Soil Present? Yes ___ (No)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run 18-66 City/County: Chester / West Chester Sampling Date: 1/19/17

Applicant/Owner: BRC State: PA Sampling Point: 8

Investigator(s): Aaron S. Clausen, PhD, CPESC Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Convex Slope (%): 5-10%

Subregion (LRR or MLRA): S Lat: 39.92955°N Long: 75.61657°W Datum: NAD83

Soil Map Unit Name: Ha 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____ (No)	**Is the Sampled Area within a Wetland?** Yes ____ (No)
Hydric Soil Present?	Yes ____ (No)	
Wetland Hydrology Present?	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)
- ___ 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)

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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches):
Water Table Present?	Yes ____	No X	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches):

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: 8

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	35	X	FACW
2. Juglans nigra	40	X	FACU
3. Acer negundo	25	X	FAC
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	30	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	15	X	FACU
2. Microstegium vimineum	15	X	FAC
3. Urtica dioica	15	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. Vitis labrusca	15	X	FACU
2. Celastrus orbiculatus	20	X	FACU
3.			
4.			
5.			
6.			
	35	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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.)

SOIL

Sampling Point: 8

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1"	7.5YR 2.5/1	100	—	—	—	—	Silt loam	
1-20"	10YR 3/3	100	—	—	—	—	Silt loam	Very stony

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): 7 2011

Hydric Soil Present? Yes _____ No (circled)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run Trail City/County: West Chester / Chester Sampling Date: 5/21/20

Applicant/Owner: East Bradford Twp. State: PA Sampling Point: 9

Investigator(s): Aaron S. Clauser, PhD Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): hillslope drainage way Local relief (concave, convex, none): Concave Slope (%): 5-10%

Subregion (LRR or MLRA): S Lat: 39.93314°N Long: 75.60748°W Datum: NAD83

Soil Map Unit Name: PaC 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____ No (circled)	**Is the Sampled Area within a Wetland?** Yes ____ No (circled)
Hydric Soil Present?	Yes ____ No (circled)	
Wetland Hydrology Present?	Yes ____ No (circled)	

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)
- ___ 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)

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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0"
Water Table Present?	Yes ____	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): >20"

Wetland Hydrology Present? Yes ____ No (circled)

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

Remarks:

Some overland flow through this natural drainageway occurs during heavy rains. Area is an upland drainageway.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 9

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus americana	50	X	FACW
2. Acer negundo	30	X	FAC
3. Platanus occidentalis	20	Y	FACW
4.			
5.			
6.			
7.			
8.			
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	15	X	FACU
2. Lonicera tatarica	15	X	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	45	X	FACU
2. Microstegium vimineum	50	X	FAC
3. Parthenocissus quinquefolia	5		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Vitis labrusca	15	X	FACU
2. Lonicera japonica	2		FACU
3.			
4.			
5.			
6.			
	17	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 37.5% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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.)

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 4/3	100					silt loam	
7-20	10YR 4/4	100					silt loam	

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ———

Depth (inches): >20"

Hydric Soil Present? Yes ___ **No** (circled)

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run Trail City/County: West Chester/Chester Sampling Date: 5/21/20

Applicant/Owner: East Bradford Twp. State: PA Sampling Point: 10

Investigator(s): Aaron S. Clausen, PhD Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): drainageway Local relief (concave, convex, none): Convex Slope (%): 5-10%

Subregion (LRR or MLRA): S Lat: 39.93274°N Long: 75.60735°W Datum: 5-10%

Soil Map Unit Name: PaC 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes _____ (No)	**Is the Sampled Area within a Wetland?** Yes _____ (No)
Hydric Soil Present?	Yes _____ (No)	
Wetland Hydrology Present?	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)
- ___ 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)

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 Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): 0"
Water Table Present?	Yes _____	No X	Depth (inches): >20"
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): >20"

Wetland Hydrology Present? Yes _____ (No)

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

Remarks:

Upland dry stormwater ditch flows through this area.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 10

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Acer negundo	80	X	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Elaeagnus umbellata	20	X	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Microstegium vimineum	50	X	FAC
2. Alliaria petiolata	45	X	FACU
3. Toxicodendron radicans	5		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. Vitis labrusca	10	X	FACU
2.			
3.			
4.			
5.			
6.			
	10	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40% (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[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

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 or equal to 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 (circled)

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

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR3/3	100	—	—	—	—	S:lt loam	
6-20	10YR4/4	100	—	—	—	—	S:lt loam	

[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 (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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes ___ **No**

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Plum Run Trail City/County: West Chester/Chester Sampling Date: 5/21/20

Applicant/Owner: East Bradford Twp. State: PA Sampling Point: 11

Investigator(s): Aaron S. Clausen, PhD Section, Township, Range: East Bradford

Landform (hillslope, terrace, etc.): hillslope drainageway Local relief (concave, convex, none): Concave Slope (%): 5-10%

Subregion (LRR or MLRA): S Lat: 39.93258°N Long: 75.60739°W Datum: NAD83

Soil Map Unit Name: PaC 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? N Are "Normal Circumstances" present? Yes X No

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

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

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

Remarks: Wetland 6

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): ½"
Water Table Present?	Yes X	No ____	Depth (inches): 3"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes X 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

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Malus coronaria	20	X	UPL
2. Salix nigra	30	X	OBL
3. Acer negundo	30	X	FAC
4.			
5.			
6.			
7.			
8.			
	80	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	3	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	3	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Phalaris arundinacea	40	X	FACW
2. Persicaria sagittata	30	X	OBL
3. Alliaria petiolata	30	X	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. Vitis labrusca	5	X	FACU
2.			
3.			
4.			
5.			
6.			
	5	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 60	x 1 = 60
FACW species 40	x 2 = 80
FAC species 30	x 3 = 90
FACU species 38	x 4 = 152
UPL species	x 5 =
Column Totals: 168 (A)	382 (B)

Prevalence Index = B/A = 2.27

Hydrophytic Vegetation Indicators:

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

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

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 or equal to 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.)

SOIL

Sampling Point: 11

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100	—	—	—	—	Silt loam	
3-11	10YR 3/1	100	—	—	—	—	clay loam	
11-20	2.5Y 4/2	95	7.5YR 5/6	5	C	M	clay loam	

[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 (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)
- X 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)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: —

Depth (inches): >20"

Hydric Soil Present? Yes X No

Remarks:

APPENDIX D

SITE PHOTOGRAPHS

Photo 1 (January 2017): Facing east from a point near the western site boundary. Viewing Plum Run (Stream 1) looking upstream. The restoration of the stream has not yet been completed in this area.

Photo 2 (January 2017): Facing northeast from Sample Point 6, viewing Wetland 3.

Photo 3 (January 2017): Facing west from Sample Point 8. Viewing typical site uplands.

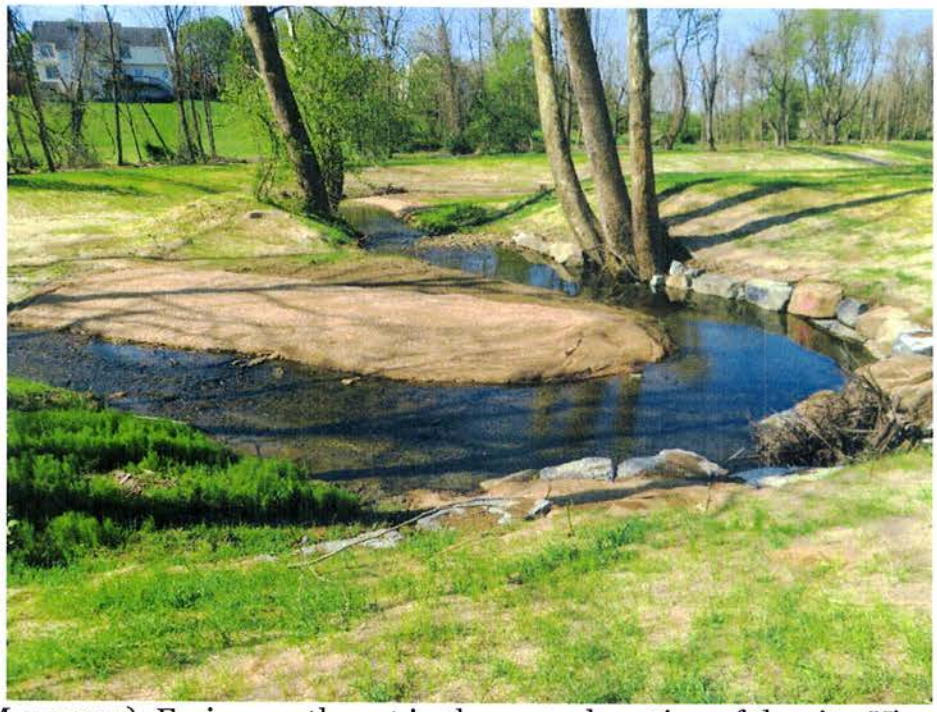


Photo 4 (May 2020): Facing southwest in the central portion of the site. Viewing typical site uplands and the south branch of Plum Run (Stream 4). Looking downstream.

Photo 5 (January 2017): Facing northeast from Sample Point 2. Viewing typical site uplands.

Photo 6 (January 2017): Facing west from Sample Point 2. Viewing typical site uplands.

Photo 7 (January 2017): Facing west from Sample Point 4. Viewing Wetland 10.

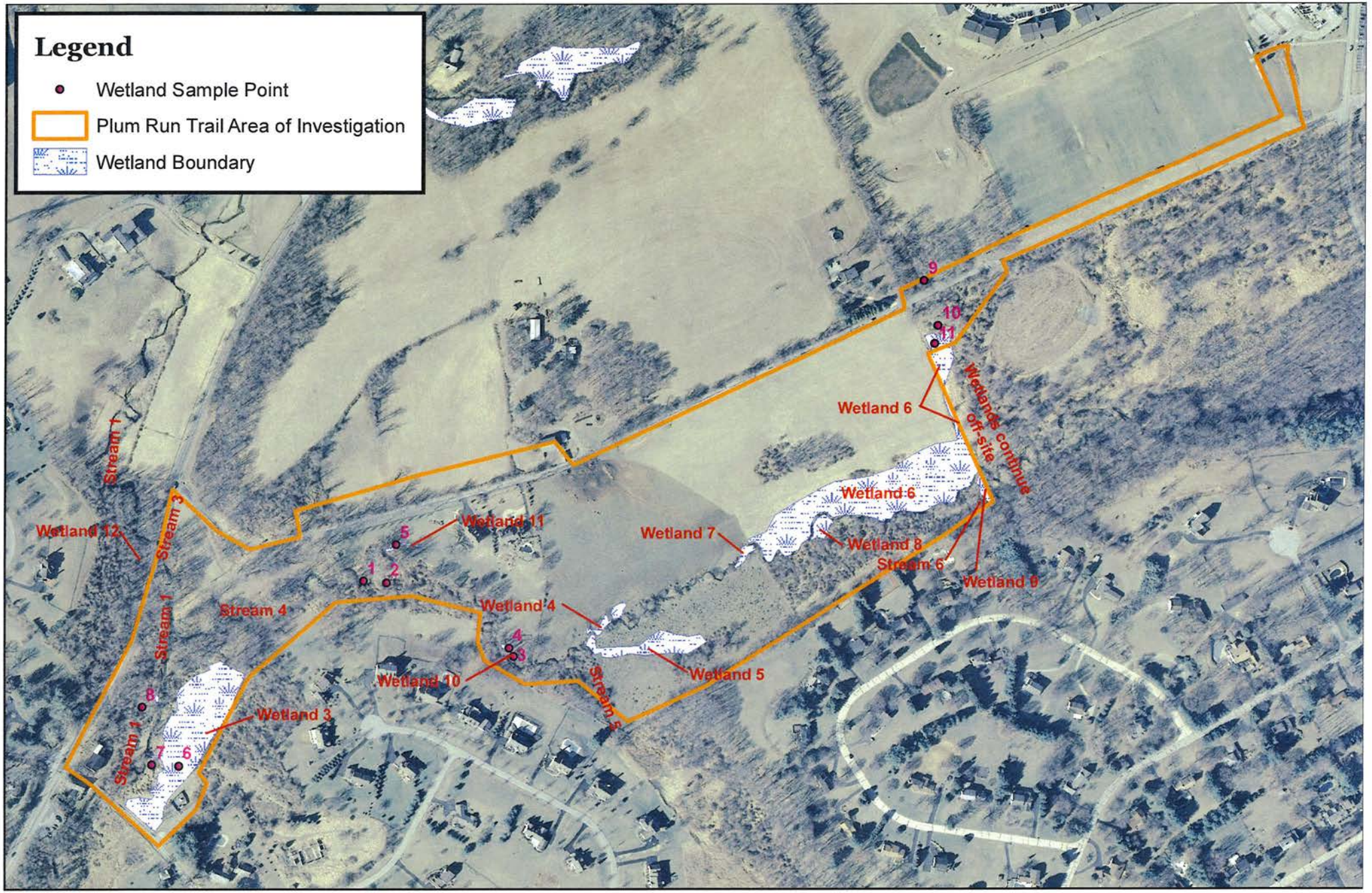
Photo 8 (January 2017): Facing west from Sample Point 5. Viewing Wetland 11.

Photo 9 (May 2020): Facing north along the eastern site boundary. Viewing typical site uplands and an existing, maintained stormwater basin.

Photo 10 (May 2020): Facing south from Sample Point 11. Viewing Wetland 6.

APPENDIX E

WETLAND LOCATION PLAN



Data Sources:
Clauser Environmental, LLC
Del Val Soil and Environmental Consultants, Inc.
Chester County GIS Department
www.pasda.psu.edu

Plum Run Trail
Wetland Location Plan
East Bradford Township
Chester County, PA

N

0 175 350 700 Feet

CLAUSER
environmental llc

APPENDIX F

PRELIMINARY JD LETTER FOR PORTION OF SITE

DEPARTMENT OF THE ARMY

PHILADELPHIA DISTRICT CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

REPLY TO
ATTENTION OF

MAR 18 2016

Regulatory Branch
Application Section II

SUBJECT: CENAP-OP-R 2015-1122 (Preliminary Jurisdictional Determination)
Project Name: Tigue Property
Latitude and Longitude: 39.933120 ° N, -75.610301° W

Mr. Michael Downs
250 Gibraltar Road
Horsham, PA. 19044

Dear Mr. Downs:

This letter is written with regard to your request for verification of a preliminary jurisdictional determination based on the plans and information as submitted by DelVal Soil & Environmental Consultants, Inc. The property associated with this request is located at 945 Tigue Road, West Chester, Chester County, Pennsylvania

Pursuant to Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, a Department of the Army permit is required for work or structures in navigable waters of the United States and the discharge of dredged and/or fill material into waters of the United States, including adjacent and isolated wetlands. Any proposal to perform the above activities within any waters of the United States, including wetlands, requires the prior approval of this office.

The plans identified on the following page depict all delineated waters and wetlands that may be jurisdictional under Section 10 of the Rivers and Harbor Act and/or Section 404 of the Clean Water Act. This preliminary determination has been conducted to identify the location(s) of waters and wetlands that may be waters of the United States for the particular site identified in this request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If you or your tenant are U.S. Department of Agriculture (USDA) program participants, or anticipate participating in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

This preliminary jurisdictional determination is non-binding and indicates that there may be waters of the United States, including wetlands, on the parcel. Preliminary JDs are advisory in nature and may not be appealed (See attached Notification of Appeal Form (Enclosure 1); however, the applicant retains the right to request an approved Jurisdictional Determination, which may be appealed, for the site. Also enclosed (Enclosure 2) is a copy of the Preliminary

Jurisdictional Determination Form signed by the applicant or his agent agreeing to accept a preliminary jurisdictional determination. Please be aware that for purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S.

This letter is valid for a period of five (5) years. This preliminary jurisdictional determination is issued in accordance with current Federal regulations and is based upon the existing site conditions and information provided by you in your application. This office reserves the right to re-evaluate and modify the preliminary jurisdictional determination at any time should existing site conditions or Federal regulations change, or should the information provided by you prove to be false, incomplete, or inaccurate.

If you have any questions regarding this matter, please contact me at (215) 656-6729 or email at peter.t.romano@usace.army.mil or write to the above address.

Sincerely,

Peter Romano

Biologist

****

SUBJECT PROPERTY: The subject property consists of +/- 54 acres. The site is an existing farmstead with associated pasture lands. The majority of the property consists of undisturbed pasture lands, a residential structure, a couple of out buildings, riparian forested areas, emergent wetlands, and Plum Creek and an un-named tributary to Plum Creek

****

SURVEY DESCRIPTION: "Wetlands Plan, Tigue Property, East Bradford Township, Chester County, Pennsylvania," sheet 1 through 5 of 5, scale as indicated, dated November 9, 2015, no revisions, drawn by ESE Consultants, Inc., 516 North Newtown Street Road, Newtown Square, PA. 19073.

****

COMMENTS: A site inspection by representatives of this office was completed on March.14, 2016. Wetlands and waters were observed onsite and are being verified under this Preliminary Jurisdictional Determination.

****

Enclosures

Copies Furnished:

PADEP, SE Regional Office (Norristown, PA)
Chester County Conservation District

Agent: Mr. John J. Willis
Delval Soil & Environmental Consultants, Inc.
4050 Skyron Drive
Doyelstown, PA. 18902

Single File Copy

APPENDIX G

PROFESSIONAL QUALIFICATIONS

Aaron S. Clauser, Ph.D., CPESC –
At Clauser Environmental, LLC, he serves as the technical/production lead on scientific projects. Dr. Clauser has his bachelor's degree in Biology and Environmental Studies from East Stroudsburg University of Pennsylvania and a doctorate in Environmental Science from Lehigh University. Dr. Clauser is a Certified Professional in Erosion and Sediment Control. He has experience as an environmental regulator with the Berks and Schuylkill Conservation Districts where he has served at both the technician and managerial levels. Dr. Clauser began consulting as a Senior Environmental Scientist and Project Manager for RETTEW Associates, Inc. He has given oral presentations at conferences held by the Ecological Society of America, American Society of Limnology and Oceanography, Coldwater Heritage Partnership, Partnership for the Delaware Estuary, Delaware Riverkeeper, Pocono Comparative Lakes Program and Schuylkill and Berks Conservation Districts and has collaborated on an article published about Pacific Northwest amphibians in a peer-reviewed journal. Dr. Clauser has completed numerous training courses including DEP sponsored NPDES, Chapter 102 and 105 technical seminars, Applied Fluvial Geomorphology for Engineers (FGE) by Wildland Hydrology, Inc., and Environmentally Sensitive Maintenance of Dirt and Gravel Roads Training. Dr. Clauser served in the PA Air National Guard where he attained the rank of Staff Sergeant. His doctoral dissertation entitled "Zooplankton to Amphibians: Sensitivity to UVR in Temporary Pools" includes quantitative optical and organismal level models that are extended to landscape level variations in pool optical properties and population level sensitivity to Ultraviolet Radiation.

Krista S. Clauser –
As the President of Clauser Environmental, LLC, she is responsible for overall client satisfaction, quality assurance, educational outreach programs, and project management. Ms. Clauser has her bachelor's degree in Special Education and Elementary Education from Kutztown University of Pennsylvania and graduate level coursework in Education from Kutztown University of Pennsylvania and Indiana Wesleyan University. She has experience as a Special Education Teacher at Schuylkill Intermediate Unit and a homeschool educator at the elementary and secondary levels. Ms. Clauser has expertise in integrating environmental/outdoor curricula into a diversity of subjects and educational settings.

APPENDIX C

PHASE I ENVIRONMENTAL SITE ASSESSMENT – FORMER STRODE'S MILL PORK PROCESSING PLANT (APRIL 2015)

Phase

Phase I Environmental Site Assessment

Former *Strode's Mill Pork Processing Plant*
635 Birmingham Road, West Chester
East Bradford Township
Chester County, Pennsylvania

Project Number: 15-284.10
Date Issued: April 9, 2015
Date of Site Inspection: April 2, 2015

Prepared For:

East Bradford Township
666 Copeland School Road
West Chester, PA 19380

By:

e Phase, Inc.
P.O. Box 44
West Chester, PA 19381-0044
(610) 692-7007
www.ephase.com

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Executive Summary

At the request of Ms. Mandie Cantlin, Assistant Township Manager of East Bradford Township (the Client), *e Phase, Inc.* has performed a Phase I Environmental Site Assessment (ESA) of the former *Strode's Mill Pork Processing Plant*, tax parcel 51-7-137.2, located at 635 Birmingham Road, East Bradford Township, Chester County, Pennsylvania, the Site.

The Site consists of a 6.9-acre, irregularly-shaped parcel of land situated on the northeast side of Lenape and Birmingham Roads in East Bradford Township. The Site houses the former *Strode's Mill Pork Processing Plant* and is part of the Strode's Mill Historic District. The subject property contains a two-story banked stucco over coarse stone (serpentine) barn with a large cinder block addition on its south side. This building now sits vacant, collapsing and deteriorating from years of neglect. The Site also consists of a spring house to the northeast of the barn, an enclosed, fenced-in sewage pumping station on the east side of the Site, deteriorating surface-level asphalt and concrete surfaces surrounding the barn and an asphalt driveway used to access the sewage pumping station along the north side of Birmingham Road. Remnants of a stone wall are also present in the northern portion of the Site. Survey stakes and flagging are present which mark the property outline and possibly on-Site wetland areas/the flood plain. The majority of the Site landscape is hilly and rocky, with dense vegetation. Plum Run Creek flows in a southwesterly direction through the property.

The Strode family had occupied the Site as early as 1879 when they began making sausage and pork products within the barn/slaughterhouse to supplement their farming and agricultural income. This operation continued until 1985 when Site operations finally ceased. Historic records indicate that the original barn dates back as early as 1815 (the northernmost section of the present-day barn). Additions to the original structure were placed on the building over the years, and by 1975, the barn/slaughterhouse appears to be at its largest size. Sections of the building began to collapse over time and by 1990, only a portion (i.e., the present-day portion) of the barn/slaughterhouse remains. Due to its small size, it is not known when the spring house was built but this was observed since at least as early 1965. Another building farther north of the slaughterhouse/barn was observed historically. Use of this building is unknown but it was built sometime between 1937 and 1958 and was demolished sometime between 1985 and 1990. Finally, it appears that there may have been up to four structures on the Site noted as far back as 1912. These were likely related to the meat processing occurring on Site at this

time. The present-day owner of the property *Black Rowan, Inc*. has owned the property since 1988.

The Site is located in a largely residential area of East Bradford Township. The subject property is bounded to the north by vacant land and Tigue Road, to the south by Birmingham Road, beyond which lies the *Strode's Mill Gallery*, to the east by a number of residential properties, and to the west by Lenape Road beyond which lies a residential property. Based upon topography and proximity of surface waterbodies, *e Phase, Inc.* infers groundwater flow to be to the south.

This ESA has been prepared in general accordance with the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Any exceptions to, or deletions from, this practice and any site-specific limiting conditions and/or data gaps are described in Sections 1.4 and 11.0 of this report. Any additional services requested by the Client which were conducted beyond the scope of this practice are described in Section 12.0 of this report.

The purpose of this ESA was to evaluate the surficial conditions at the Site to identify any *recognized environmental conditions* (*RECs*), *historical recognized environmental conditions* (*HRECs*) and *controlled recognized environmental conditions (CRECs)* in connection with the subject property. In addition, *e Phase, Inc.* conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements.

e Phase, Inc. has identified the following evidence of *RECs, HRECs and CRECs* in connection with the subject property and/or vicinity:

Summary of *RECs*, *HRECs* and *CRECs*

	Identified	Conclusions	Recommendations
Recognized Environmental Conditions	No	NA	NA
Historical Recognized Environmental Conditions	No	NA	NA
Controlled Recognized	No	NA	NA

	Identified	Conclusions	Recommendations
Environmental Conditions			
The information presented in this summary table is a synopsis of the conclusions and recommendations for the RECs, HRECs and/or CRECs identified in connection with the Site and vicinity. Additional details on the RECs, HRECs and/or CRECs are provided in the report text; therefore, this summary table should not be used as a stand-alone document.			

e Phase, Inc. has identified the following evidence of significant environmental concerns, moderate environmental concerns, and *de minimis* conditions in connection with the subject property and/or vicinity:

Summary of Other Environmental Findings

	Identified	Conclusions	Recommendations
Significant Environmental Concerns	Yes (1)	1) Possible presence of ACBMs within the former barn/slaughterhouse and spring house (roofing material) based on the ages of these structures.	Comprehensive asbestos survey by a licensed asbestos inspector if significant renovations/demolition is proposed.
Moderate Environmental Concerns	Yes (4)	1) Possible presence of LBP within the Site structures.	None, as the Site is not used for residential purposes.
		2) According to the database report, radon concentrations in the vicinity of the Site average 3.4 picocuries per liter (pCi/L), which is below the EPA's recommended action level of 4.0pCi/L. However, according to the EPA's radon zone map, the Site is in Zone One, an area of high radon propensity. Thus, it is possible that the Site has elevated radon levels.	None, as the Site is not used for residential purposes.
		3) Unidentified subsurface piping observed adjacent to the east side of the slaughterhouse/barn.	Properly identify the historical use of the piping to determine if an environmental risk exists; characterize/abandon in accordance with local, state, and Federal regulations.
		4) Various construction and waste debris, including paint cans, a rusted drum, and debris mounds of unknown material were observed on the northeast side of the former slaughterhouse/barn possibly the result of portions of this building's collapse or by trespassers. Staining in and around these areas was not noted.	Remove debris/mounds and visually assess the soils beneath these areas. Additional environmental activities may be recommended following the completion of this task.
de minimis Conditions	Yes (1)	1) Within the prescribed radius, *Brandywine Gardens &*	No further action.

	Identified	Conclusions	Recommendations
		Greenhouse was identified by the database search as a CERCLIS NFRAP facility. Based upon the predicted groundwater flow to the south, the identified site lies in the downgradient location and, as such, is unlikely to be impacting Site subsurface conditions.	

The information presented in this summary table is a synopsis of the conclusions and recommendations for the significant environmental concerns, moderate environmental concerns, and/or de minimis conditions identified in connection with the Site and vicinity. Additional details on these environmental findings are provided in the report text; therefore, this summary table should not be used as a stand-alone document.

1.0 Introduction

This report describes the Phase I ESA performed by *e Phase, Inc.* at the former *Strode's Mill Pork Processing Plant*, tax parcel 51-7-137.2, located at 635 Birmingham Road, East Bradford Township, Chester County, Pennsylvania (the Site). *e Phase, Inc.* conducted this ESA at the request of Ms. Mandie Cantlin, Assistant Township Manager of East Bradford Township (the Client) who authorized this project on March 25, 2015.

1.1 Purpose

This ESA has been prepared in general accordance with the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ASTM standard practice is designed to "define good commercial and customary practice in the United States of America for conducting an environmental site assessment of a parcel of commercial real estate with respect to the range of contaminants within the scope of CERCLA and petroleum products." As such, this practice is intended to constitute "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice," which is one of the requirements necessary to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on CERCLA liability (landowner liability protection). The purpose of this ESA was to evaluate the surficial conditions at the Site to identify any *recognized environmental conditions, historical recognized environmental conditions* or *controlled recognized environmental conditions* in connection with the subject property.

A *recognized environmental condition (REC)* is defined as "the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a Site*:* (1) due to any *release* to the *environment;* (2) under conditions indicative of a *release* to the *environment;* or (3) under conditions that pose a *material threat* of a *release* to the *environment*."

A *historical recognized environmental condition (HREC)* is defined as "a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the Site and had been addressed to the satisfaction of the applicable regulatory authority, without subjecting the Site to any required controls."

A *controlled recognized environmental condition (CREC)* is defined as "a *recognized environmental condition* resulting from a past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority, with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls." Note that a condition identified as a *CREC* does not imply that the *environmental professional* has evaluated or confirmed the adequacy, implementation, or continued effectiveness of the require control that has been, or is intended to be, implemented.

In addition, *e Phase, Inc.* conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements. Determinations of these other environmental findings were based on the inspector's interpretation and the judgment and opinion of the environmental professional. In general, for the purposes of this report a significant environmental concern is defined as representing a significant threat to the environmental condition of the Site, a moderate environmental concern is defined as representing a moderate threat to the environmental condition of the Site, and a *de minimis* condition is defined as representing a minimal threat or no threat to the environmental condition of the Site. These other environmental findings do not rise to the level of a *recognized environmental condition* but may warrant further environmental investigation, as determined on a case-by-case basis.

1.2 Scope of Services

In general accordance with the guidelines set forth in the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*, *e Phase, Inc.* performed the following activities as part of our assessment:

- Conducted a visual review of surface conditions at surface portions of the Site on April 2, 2015 to evaluate the current environmental condition of the Site;

- Conducted a visual review of surface conditions at adjoining properties from within the boundaries of the Site or other vantage point to assess the potential environmental threat to the Site from these properties;

- Interviewed the Site representative, John Spangler, Esq., on April 6, 2015 to identify specialized knowledge or experience in regards to Site characteristics;

- Reviewed publicly-available local records on file at the East Bradford Township municipal offices to ascertain the activities and uses of the subject property by previous and/or current Site occupants;

- Interviewed local agency officials regarding environmental issues at and in the immediate vicinity of the Site;

- Reviewed online resources and resources retained by Chester County municipal offices to ascertain the history, physical setting, and environmental issues at and in the immediate vicinity of the Site;

- Reviewed a report of Federal and state environmental records conducted by a database search contractor to identify any Federal- or state-listed sites within the search radii specified in the ASTM E 1527-13 standard which have the potential to impact the environmental condition of the Site;

- Visually evaluated the Site buildings for the presence of friable suspect ACBM and flaking, peeling, and/or chipping suspect LBP; and,

- Requested records retained for the Site by the Pennsylvania Department of Environmental Protection (PADEP).

e Phase, Inc. did not conduct laboratory analyses for the presence of ACBM, LBP, drinking water quality, radon, urea foam formaldehyde insulation, or electromagnetic radiation. Our preliminary inspections for friable suspect ACBM and flaking suspect LBP consisted of only a visual inspection of readily-accessible areas of the Site buildings. It was not intended to substitute for a comprehensive survey for the purposes of the renovation/demolition of the Site buildings or to evaluate potential health risks. Although the accepted method of evaluating subsurface conditions at the Site in more detail would be to conduct a *subsurface evaluation* (including the collection and analysis of soil and groundwater samples), such evaluation was beyond the scope of this ESA. Lastly, this ESA was not intended to substitute for a regulatory compliance audit of the Site.

1.3 Significant Assumptions

The recommendations and conclusions discussed herein are based solely and in reliance upon information collected as a result of the activities and services described above in the "Scope of Services." *e Phase, Inc.* neither certifies as to the accuracy nor renders an opinion as to the accuracy or completeness of the statements of the individuals interviewed, governmental records obtained, environmental reports prepared by other consultants, analytical results, or the database search results provided by the database contractor. There is a possibility that even with the proper application of these methodologies property conditions may exist that could not be identified within the scope of the assessment or which were not reasonably identifiable from the available information. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide the Client with information relating to the property.

1.4 Limitations and Exceptions

The observations in this ESA are valid on the date of the site reconnaissance and made under the limitations and conditions noted herein. *e Phase, Inc.* renders no opinion as to the presence of hazardous substances or petroleum products at portions of the Site that were unavailable for direct observation.

e Phase, Inc. has drawn conclusions and developed recommendations with information obtained from "publicly available," "reasonably obtainable," and "practically reviewable" information available at the time of this ESA and an evaluation of Site surficial conditions. The results and conclusions of the Phase I ESA process were limited to Site surficial conditions observed at the time of the site reconnaissance and by the completeness and accuracy of information obtained from records of various sources and interviews with persons that might be knowledgeable of the Site and the conditions thereof.

No reasonable level of Site inspection or records evaluation can completely guarantee that a property is totally free of environmental contamination or potential exposure to some degree of environmental liability. Rather, this site assessment effort was structured to provide "appropriate inquiry" and adequate "environmental due diligence" to qualify our Client for protection under the "innocent landowner defense," the "bona

fide prospective purchaser defense," and the "contiguous property owner defense" as described by both CERCLA and the Superfund Amendments and Reauthorization Act.

Subsurface investigations may result in the discovery of conditions in addition to or different from the conditions discovered by surficial observation only. *e Phase, Inc*. does not give any warranty, either expressed or implied, as to the presence of hazardous substances or petroleum products other than set forth elsewhere in this ESA.

Specific limiting conditions and/or data gaps encountered during this ESA are set forth below:

- Limited interior Site building access and review due to the unsafe, deteriorating conditions of the Site structures.
- Our inspection did not include the building rooftops; areas behind existing walls, above existing ceilings, or beneath existing flooring; and areas obstructed by thick vegetation.
- Usage of the Site was identified back to 1815, at which time the subject property contained a barn and was part of a larger estate owned by the Strode family. Historical sources prior to 1815 were not uncovered within the scope of this investigation and, as such, a data failure is indicated, which is a type of data gap. The surrounding properties appear sparsely developed with farm homesteads and various mills. However, since the subject property was used as a barn since 1815, it is likely that the Site was developed for this purpose. As such, this data gap does not appear to be significant and is unlikely to affect the conclusions of this report.

e Phase, Inc. is of the opinion that the first two limitations may have impacted our ability to render conclusions with regard to the environmental condition of the subject property.

1.5 Special Terms & Conditions

Authorization to perform this work was given by a directive from the Client listed on the cover page of this document.

1.6 User Reliance

This report has been prepared exclusively for the party to whom it has been delivered to by *e Phase, Inc*. It is confidential and proprietary. It may not be copied, disseminated,

distributed or disclosed to any other parties without the expressed written permission of *e Phase, Inc.* No third party may rely on the information contained herein.

2.0 Site Description

2.1 Site Location and Legal Description

Provided below is a description of the Site:

Table 1: Site Description

Property Name:	Former *Strode's Mill Pork Processing Plant*
Site Address:	635 Birmingham Road
Site Location:	Northeast corner of Lenape and Birmingham Roads
Closest Cross Street:	Lenape Road
Site Access:	From Birmingham Road, which forms the southern boundary of the Site
Site Acreage:	6.9 acres
Type of Property:	Commercial
County Assessor Map Number, Block, and Lot:	51-7-137.2
Deed Book and Page:	1154, 42
Current Owner:	*Black Rowan, Inc.*
Date Purchased:	May 1, 1988
Previous/Historic Use:	Former slaughterhouse and pork processing plant

e Phase, Inc. did not uncover any information in Chester County Recorder of Deeds records to indicate any environmental liens or deed restrictions (i.e., activity and use limitations, institutional and engineering controls, etc.) on the property.

2.2 Site and Vicinity General Characteristics

The Site consists of a 6.9-acre, irregularly-shaped parcel of land situated at the northeast corner of Lenape and Birmingham Roads. The Site is in a largely residential area of East Bradford Township. The subject property is designed for commercial purposes but is unoccupied. The Site served as a former slaughterhouse and pork processing facility from 1879 until it ceased operations in 1985 and is a part of the Strode's Mill Historic District. The *Strode's Mill Gallery* is located just south of the Site on the adjacent corner of Lenape and Birmingham Roads and was, at one time, part of the Strode family holdings,

operating as a grist mill. The surrounding adjacent areas have sizable residential development.

e Phase, Inc. did not observe any properties that pose a material threat of release of hazardous substances or petroleum products (such as gasoline stations, industrial properties, dry cleaners, or manufacturing facilities) in the immediate vicinity of the Site.

2.3 Current Site Ownership and Use

Chester County Assessor's Office records identify the current owner of the Site as *Black Rowan, Inc*. The subject property is currently unoccupied and includes an aged, long-standing stone/block barn which now sits vacant and in disrepair, a deteriorating spring house, surface-level asphalt and concrete paving used to access the Site along the east side of Birmingham Road, and an enclosed, fenced-in area containing a sewage pumping station. Remnants of a stone wall are also present in the northern portion of the Site.

Since the Site does not contain tenants, an evaluation of tenant activities' potential environmental impact to the Site is not warranted.

2.4 On-Site Structures, Utilities, and Improvements

Table 2 provides a description of the Site structures and other improvements:

Table 2: Site Structures and Improvements

Number of Structures:	Two
Number of Stories and Usage:	Two-story slaughterhouse/barn and spring house
Construction Date:	Circa 1815 for original portion of the barn, unknown for the spring house
Building Materials:	Stucco over course stone (serpentine); brick, cinder block
Roofing Materials:	Metal over shingle (gable roof)
Basement Type:	None
Percent Structures Cover Site:	5%
Paving Materials:	Asphalt and concrete
Percent Paved Surfaces Cover Site:	5%
Pervious surfaces description:	Trees, brush, grass, wetland vegetation
Percent Pervious Surfaces Cover Site:	90%

Table 3 provides a listing of the Site infrastructure:

Table 3: Site Utilities

Utility	Source	Supplier
Heating:	None observed	NA
Air Conditioning:	None observed	NA
Electric:	Aboveground lines	*PECO*
Water:	On-Site spring house	NA
Sewer:	Unknown what system the processing plant once utilized; however, according to a Site plan from 1987, an existing cesspool is/was present on the eastern side of the Site.	NA

2.5 Current Uses of Adjoining Properties

North Vacant land followed by Tigue Road abut the Site to the north.

South Birmingham Road abuts the Site to the south, beyond which lies the *Strode's Mill Gallery*, which is also part of the Strode's Mill Historic District.

East Large residential properties abut the Site to the east, beyond which lies Riflery Drive and further residential development.

West Lenape Road abuts the Site to the west, beyond which lies a residential dwelling.

3.0 Physical Setting

3.1 Topography

The Site is at an elevation of approximately 200 feet (in the south-central portion of the Site) and 230 feet (in the northeastern portion of the Site) above the National Geodetic Vertical Datum of 1929 according to the USGS *West Chester, PA Quadrangle*. The Site slopes generally to the south. However, on both sides of the on-Site stream, topography slopes downward in the direction of the stream. Land near the Site generally slopes down towards the south.

3.2 Geology/Soils

e Phase, Inc. did not observe any bedrock outcrops at or in the immediate vicinity of the Site. According to the Pennsylvania Department of Conservation and Natural Resources website, the Site is underlain by the Ultramafic rocks of lower Paleozoic era. The bedrock type locality is identified as serpentinite. Ultramafic rocks are magnesium-rich rocks derived from pyroxenite and peridotite.

According to the Natural Resources Conservation Service websoil survey, the Site is underlain by soils classified as Neshaminy gravely silt loam with 8 to 15 percent slopes, Chrome gravelly silty clay loam with 15 to 25 percent slopes and Wehadkee silt loam.

3.3 Surface Water

The Site is in the Plum Run Regional Basin with Plum Run located in the central portion of the Site. Surface runoff would be to the southeast and southwest, towards the on-Site stream.

3.4 Flood Zone

The Federal Emergency Management Agency *Flood Insurance Rate Map* for the vicinity indicates the Site is in Zone A. The Federal Emergency Management Agency Flood Insurance Rate Map for the vicinity indicates the Site is in Zone A-"Special Flood Hazard Areas. The 1% annual chance flood (100 year-flood), also known as the base flood, is the flood that has one percent chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% chance annual

chance flood. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood. In Zone A, no Base Flood Elevations were determined.

3.5 Wetlands

e Phase, Inc. observed some wetland-type vegetation at the Site co-incident with the on-Site stream.

3.6 Hydrogeology

Depth to groundwater at the Site is likely shallow. With exception to the spring house, we did not identify any current means of sampling groundwater at the Site. Based upon topography and proximity of surface waterbodies (i.e., Plum Run), *e Phase, Inc.* infers groundwater flow to be to the south. References to hydraulic location relative to the Site are based upon *e Phase, Inc.*'s inferred southerly direction of groundwater flow.

4.0 User-Provided Information

Pursuant to ASTM E 1527-13, *e Phase, Inc.* requested Site information from Ms. Mandie Cantlin, Assistant Township Manager of East Bradford Township, the Client and User of this report. The User Questionnaire completed by Ms. Cantlin is provided in Appendix F.

4.1 Title Records

Title records were not provided to *e Phase, Inc.* by the Client. *e Phase, Inc.* reviewed the current deed record for the Site at the Chester County Recorder of Deeds office. *e Phase, Inc*. did not find any information in these records to indicate any environmental liens or activity and use limitations (institutional and engineering controls) on the property.

4.2 Environmental Liens or Activity and Use Limitations

The Client did not have any knowledge of any environmental cleanup liens or of any engineering controls, land use restrictions, or institutional controls on the Site which would affect the activity and use of the property. Moreover, evidence of environmental liens or institutional/engineering controls on the Site was not uncovered in the environmental database search or in deed records for the subject property.

4.3 Specialized Knowledge

The Client did not have any specialized knowledge or experience relating to the environmental condition of the Site or nearby properties.

4.4 Valuation Reduction for Environmental Issues

According to the Client, the Site property has not experienced a value reduction in purchase price in comparison to equivalent properties due to any environmental issues.

4.5 Commonly Known or Reasonably Ascertainable Information

The Client did not report any commonly known or reasonably ascertainable information about the property that is material to *recognized environmental conditions* in connection with the property.

4.6 Owner, Property Manager, and Occupant Information

The Site is currently owned by *Black Rowan, Inc*. and is currently unoccupied. John Spangler, Esq. was identified as the Site contact. Information provided to *e Phase, Inc.* by Mr. Spangler is presented in Sections 6.2 and 8.1.

4.7 Reason for Performing ESA

The Client informed *e Phase, Inc*. the reason for this ESA Site evaluation is that the Township is considering purchasing the property for open space/recreational usage.

4.8 Other

The Client did not have any other knowledge or experience with the Site that may be pertinent to this ESA.

5.0 Records Review

5.1 Federal & State Environmental Database Records

e Phase, Inc. contracted database searches of Federal and state environmental records on March 30, 2015. Federal- and state-listed sites identified within the radii specified by ASTM E 1527-13 are discussed in detail in this section below. Refer to Appendix E for a complete copy of the database search report. Table 4 summarizes these results.

Table 4: Database Search Results

Database	Search Radius	Site	Adjacent	0-¼ miles	¼-½ miles	½-¾ miles	¾-1 mile
NPL	1 mile	No	0	0	0	0	0
Delisted NPL	½ mile	No	0	0	0		
CERCLIS	½ mile	No	0	0	0		
CERCLIS NFRAP	½ mile	No	0	0	1		
RCRA Generator	Site & adjoining	No	0				
RCRA NLR	Site & adjoining	No	0				
RCRA CORRACTS	1 mile	No	0	0	0	0	0
RCRA TSD	½ mile	No	0	0	0		
ERNS	Site	No					
Tribal Land	1 mile	No	0	0	0	0	0
State/Tribal Sites	1 mile	No	0	0	0	0	0
State/Tribal SWL	½ mile	No	0	0	0		
State/Tribal UST/AST	Site & adjoining	No	0				
State/Tribal LUSTs	½ mile	No	0	0	0		
Federal/State/Tribal Brownfield	½ mile	No	0	0	0		
State/Tribal IC/EC	Site	No					
State/Tribal VCP	½ mile	No	0	0	0		

Shading represents areas outside ASTM E1527-13 search radius

5.1.1 National Priority List (NPL) Sites

NPL is the EPA's list of Superfund sites and represents the worst of all unidentified, uncontrolled, and/or abandoned hazardous waste sites.

The search did not identify the Site or any sites within a one-mile radius of the Site as NPL sites.

5.1.2 Delisted NPL Sites

Delisted NPL sites are sites that have been deleted from the NPL where no further response is appropriate.

The search did not identify the Site or any sites within a ½-mile radius of the Site as delisted NPL sites.

5.1.3 CERCLIS Listings

A CERCLIS listing is a potential Superfund site currently or previously investigated for a release or threatened release of hazardous waste materials.

The search did not identify the Site or any sites within a ½-mile radius of the Site as CERCLIS listings.

5.1.4 CERCLIS NFRAP Listings

A CERCLIS "No Further Remedial Action Planned" (NFRAP) facility is a property where, to the best of the EPA's knowledge, assessment at the facility has been completed and the EPA has determined that no further steps will be taken to list this property on the NPL. This decision does not necessarily imply that there is no hazard associated with a given site; it only implies that, based upon the available information, the location is not judged to be a potential NPL site. Possible reasons include no contamination was found, contamination was removed quickly, contamination was not serious enough to require Federal Superfund action or NPL consideration, etc.

The search did not identify the Site but did identify one site within a ½-mile radius of the Site as a CERCLIS NFRAP listing. Table 5 summarizes this facility.

Table 5: Summary of NFRAP Site

Name/Address	EPA ID#	Distance/Direction	Description
BRANDYWINE GARDENS & GREENHOUSE 1027 LENAPE ROAD	0305719	0.346 mile/ southwest	Removal Only Site (No Site Assessment Work Needed) Date Completed: 06/04/03

Given the groundwater flow to the south, the listed site is predicted to lie in the downgradient location from the Site and, as such, is unlikely to be impacting Site subsurface conditions.

5.1.5 RCRA Generator Facilities

A RCRA generator facility is a facility that generates or transports hazardous waste or meets other RCRA requirements.

The search did not identify the Site or any adjoining property as RCRA hazardous waste generator facilities.

5.1.6 RCRA NLR Facilities

A RCRA NLR facility is a facility not currently classified by the EPA but is still included in the RCRA Info database.

The search did not identify the Site or any adjoining property as RCRA NLR facilities.

5.1.7 RCRA CORRACTS Facilities

A RCRA CORRACTS facility is a hazardous waste handler with reported violations and corrective action activity.

The search did not identify the Site or any sites within a one-mile radius of the Site as RCRA CORRACTS facilities.

5.1.8 RCRA TSD Facilities

A RCRA TSD facility is a facility licensed to store, treat, and dispose of hazardous waste materials.

The search did not identify the Site or any sites within a ½-mile radius of the Site as RCRA TSD facilities.

5.1.9 ERNS Sites

ERNS is a database of emergency response actions.

The search did not identify the Site as an ERNS site.

5.1.10 Tribal Land

Tribal land sites are sites with boundaries established by treaty, statute, and/or executive or court order recognized by the Federal Government as territory in which American Indian tribes have primary governmental authority.

The search did not identify the Site or any sites within a one-mile radius of the Site as tribal land sites.

5.1.11 State/Tribal Sites

The State/Tribal Sites database is a database of sites within the PADEP's Hazardous Sites Cleanup Program.

The search did not identify the Site or any sites within a one-mile radius of the Site as State/Tribal sites.

5.1.12 State/Tribal SWL Sites

State/Tribal SWL sites are permitted solid waste landfills.

The search did not identify the Site or any sites within a ½-mile radius of the Site as State/Tribal SWL sites.

5.1.13 State/Tribal USTs and ASTs

The State/Tribal UST/AST database is the state list of registered underground and aboveground storage tanks.

The search did not identify any registered USTs or ASTs at the Site or at any adjoining property.

5.1.14 State/Tribal LUSTs

The State/Tribal LUST database is the state list of USTs which have been reported as leaking.

The search did not identify the Site or any sites within a ½-mile radius of the Site as State/Tribal LUST sites.

5.1.15 Federal/State/Tribal Brownfield Sites

The Federal Brownfield is a list of EPA Brownfield sites and Superfund sites that have either an institutional or engineering control. State/Tribal Brownfield sites are the PADEP's Land Recycling Program Act II sites, and sites listed on the PA Sitefinder website.

The search did not identify the Site or any sites within a ½-mile radius of the subject property as Federal/State/Tribal Brownfield sites.

5.1.16 State/Tribal IC/EC

State/Tribal IC/EC sites are sites with institutional or engineering controls in place as part of a response action. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or affect human health.

The search did not identify the Site as a State/Tribal IC/EC site.

5.1.17 State/Tribal VCP

The State/Tribal Voluntary Cleanup Program (VCP) provides an incentive to remediate oil- and gas- related pollution by participants as long as they did not cause or contribute to the contamination. Applicants to the program receive a release of liability to the state in exchange for a successful cleanup.

The search did not identify the Site or any sites within a ½-mile radius of the Site as VCP sites.

5.1.18 Database Search Unmappable Properties

Unmappable properties are located in the general vicinity of the Site. However, due to inaccurate or missing information provided by the appropriate governmental agency, the database search contractor was unable to definitively plot these sites.

The database search did not identify any unmappable properties located on streets within the applicable ASTM search radii from the Site. An unmappable property is a property the database search contractor was unable to definitively plot due to inaccurate or missing information provided by the appropriate governmental agency.

5.1.19 Vapor Migration Assessment

There are no upgradient properties within the area of concern which are known or suspected to be contaminated sources or cannot be eliminated based upon the available information.

5.2 State Records

5.2.1 Pennsylvania Department of Environmental Protection (PADEP)

e Phase, Inc. requested access to records the PADEP may retain for the Site on March 29, 2015. A response was received from PADEP on March 30, 2015 stating that they were unable to locate any records for the Site in their files.

5.3 Local Records

5.3.1 East Bradford Township Records

e Phase, Inc. visited the East Bradford Township municipal building on March 30, 2015 and requested access to any records (i.e., building permits, tank permits, use and occupancy permits, notices of violation, etc.) they may have on file for the Site. The following provides a summary of this review:

- *Not dated:* East Bradford Township Historic File: *Strode's Sausage & Scrapple Plant* - part of the Strode's Mill Historic District.
- *1982:* Zoning: Site survey (showing ½ of property zoned C-1 and other ½ zoned R-1.

- *2/1987:* Historical Resource Survey Form: East Bradford Historic Site #139.
- *2/21/2007:* Building: Demolition by neglect.
- *2012:* Letter: Indicates no historic resources shall be demolished by neglect.
- *2014:* Zoning: Sanitary sewer line easement.

5.3.2 Assessor's Office Records

A review of the *Chester County Research Assessment Data and Tax Map Data*, "ChescoViews" on-line records did not reveal any environmental liens or activity and use limitations (institutional and engineering controls) on the property.

5.3.3 Zoning

The East Bradford Township zoning map depicts the Site as zoned as C-1, commercial use (western part) and as zoned for R-2 (residential) use (eastern part).

5.3.4 Chester County Fire Marshal

e Phase, Inc. contacted Mr. Harrison Holt, Chester County Chief County Fire Marshal on April 7, 2015 and requested access to any records (i.e., tank permits, hazardous materials incidents, etc.) he may have on file for the Site. Chief Holt indicated he has nothing on file for this request.

5.4 Environmental Permits and/or Violations

e Phase, Inc. did not discover any environmental permits and/or violations for the Site at any of the local offices contacted during the preparation of this ESA.

6.0 Historical Use Information

6.1 Previous Environmental Reports

e Phase, Inc. was neither provided with nor encountered any previous environmental reports regarding the Site during the preparation of this ESA.

6.2 Interviews

e Phase, Inc. interviewed Mr. John Spangler, Site contact, on April 6, 2015. Mr. Spangler informed *e Phase, Inc.* that to the best of his knowledge the Site operated as a slaughterhouse and pork processing facility until its closure in the mid 1980's. Mr. Spangler was unaware of any environmental concerns in connection with the Site.

6.3 Historical Research

Table 6 provides a listing of the historical sources consulted for the Site and adjoining properties on April 3, 2015.

Table 6: Historical Sources Consulted

Record	Source/Location	Date(s)
Historic Atlases	*Historicmapworks.com*	1873, 1883, 1912 and 1933
Aerial Photographs	*Googleearth.com*	1992, 2002, 2004, 2008, 2010 and 2011
	Pennpilot.psu.edu	1937, 1958 and 1971
	Historicaerials.com	1950, 1968, 1979, 1992, 2002, 2008, 2010 and 2013
	PhilaGeoHistory.org	1930, 1965, 1970, 1975, 1980, 1985, 1990 and 1995
Sanborn Fire Insurance Rate Maps	Philadelphia Free Library (web information)	None found
Historic Topographic Maps	*Historicaerials.com*	1924, 1932, 1943, 1951, 1956, 1962, 1969, 1975, 1988, 1996, and 2000
Property Tax Records	Chester County Assessment Office	Undated
Deed Records	Chester County Recorder of Deeds	Current deed

6.4 Historical Uses of Site and Adjoining Properties

Table 7 represents a collective summary of the historical use information for the Site and adjoining properties.

Table 7: Historical Uses of Site and Adjoining Properties

Property	Description of Historic Uses	Items of Environmental Interest
Site	The Strode family had occupied the Site as early as 1879 when they began making sausage and pork products within the barn/slaughterhouse to supplement their farming and agricultural income. This operation continued until 1985 when Site operations finally ceased. Historic records indicate that the original barn dates back as early as 1815 (the northernmost section of the present-day barn). Additions to the original structure were placed on the building over the years, and by 1975, the barn/slaughterhouse appears to be at its largest size. Sections of the building began to collapse over time and by 1990, only a portion (i.e., the present-day portion) of the barn/slaughterhouse remains. Due to its small size, it is not known when the spring house was built but this was observed since at least as early 1965. Another building farther north of the slaughterhouse/barn was observed historically. Use of this building is unknown but it was built sometime between 1937 and 1958 and was demolished sometime between 1985 and 1990. Finally, it appears that there may have been up to four structures on the Site noted as far back as 1912. These were likely related to the meat processing occurring on Site at this time. The present-day owner of the property *Black Rowan, Inc*. has owned the property since 1988. It should be noted that it does not appear that the specific area of the Site was farmed (since at least as early as 1937) as most of it lies within the flood plain of Plum Run. It should also be noted that the sewage pumping station was placed on the property sometime between 1992 and 1995. The Site and adjacent areas were owned by members of the Strode family for nearly 250 years. The area of the Site thrived as a small crossroads village providing a variety of services for the surrounding communities. A review of an 1873 historical map of East Bradford Township shows the Site ownership and adjacent areas belonging to the Strode family. The surrounding areas consist of various mills, farms and homesteads.	None.
Adjoining to North	The property to the north has been undeveloped for as long as this area has been traced.	None.
Adjoining to South	Birmingham Road abuts the Site to the south, beyond which lies the *Strode's Mill Gallery*, which is also part of the Strodes' Mill Historic District. The *Strode's Mill Gallery* (former *Etter's Mill*) served as a grist mill and was owned at one time by the Strode family.	None.

Property	Description of Historic Uses	Items of Environmental Interest
Adjoining to East	Large residential properties abut the Site to the east, beyond which lies Riflery Drive and further residential development. This development was constructed sometime between 1992 and 1995. Prior to that time, this area contained the original Strode farmstead (still remaining) and farm fields for as long as the history of this area was traced.	None.
Adjoining to the West	Lenape Road abuts the Site to the west, beyond which lies a residential dwelling. Prior to this time, the area remained largely sparsely developed. This dwelling has been present for as long as the history of this area was traced.	None.

6.5 Data Gaps and Data Failures

ASTM E 1527-13 defines a data failure as a failure to achieve the historical research objectives of AAI even after reviewing the standard historical sources that are reasonably ascertainable and likely to be useful. Specifically, the historical research objectives include identifying previous uses and ownership of the property since the property was first developed with structures or was placed into use of some form (i.e., residential, agricultural, commercial, industrial, or governmental uses), or back to 1940, whichever is earlier.

Usage of the Site was identified back to 1815, at which time the subject property contained a barn and was part of a larger estate owned by the Strode family. Historical sources prior to 1815 were not uncovered within the scope of this investigation and, as such, a data failure is indicated, which is a type of data gap. The surrounding properties appear sparsely developed with farm homesteads and various mills. However, since the subject property was used as a barn since 1815, it is likely that the Site was developed for this purpose. As such, this data gap does not appear to be significant and is unlikely to affect the conclusions of this report.

7.0 Site Reconnaissance

7.1 Methodology

The objective of the site reconnaissance was to identify *recognized environmental conditions, historical recognized environmental conditions* and *controlled recognized environmental conditions* at or in the immediate vicinity of the Site by means of a visual, surficial review. In addition, during the regular course of the site reconnaissance, *e Phase, Inc.* also conducted an evaluation of surficial conditions at and in the immediate vicinity of the Site for evidence of significant environmental concerns, moderate environmental concerns, and *de minimis* conditions. Ms. L. Sherrerd Steele and Ms. Donna Dolan of *e Phase, Inc.* conducted this visual reconnaissance of the Site's property and exterior portion of the former slaughterhouse on April 2, 2015. *e Phase, Inc.*'s reconnaissance consisted of a systematic traverse of the Site to provide a view of Site improvements, facilities, and grounds under the limiting conditions noted in Section 1.4. *e Phase, Inc.* also attempted to visually review exterior portions of adjacent properties observable from within the boundaries of the Site or other vantage point.

A Site plan is included in Appendix C. Photographs taken during the Site inspection are included in Appendix D.

The passage of time may result in a change in the environmental characteristics at the Site and the surrounding properties. *e Phase, Inc*. does not render any opinion as to the environmental conditions at the Site after the date of the site reconnaissance. *e Phase, Inc.* does not undertake to update the conclusions or recommendations of this ESA. *e Phase, Inc*. renders no opinion as to the environmental conditions at locations not reviewed or visually obstructed portions of the Site.

7.2 General Site Setting & Interior/Exterior Observations

The subject property contains a two-story banked stucco over coarse stone (serpentine) barn with a large cinder block addition on its south side. This building now sits vacant, collapsing and deteriorating from years of neglect. The Site also consists of a spring house to the northeast of the barn, an enclosed, fenced-in sewage pumping station on the east side of the Site, deteriorating surface-level asphalt and concrete surfaces surrounding the barn and an asphalt driveway used to access the sewage pumping

station along the north side of Birmingham Road. Remnants of a stone wall are also present in the northern portion of the Site. The majority of the Site landscape is hilly and rocky, with dense vegetation. Plum Run Creek flows in a southwesterly direction through the property. Survey stakes and flagging are present which mark the property outline and possibly on-Site wetland areas/the flood plain.

7.2.1 Underground Storage Tanks (USTs)

e Phase, Inc. did not observe any visual evidence of USTs (such as vent or fill pipes) at the Site. Mr. Spangler was unaware of any USTs at the Site.

7.2.2 Aboveground Storage Tanks (ASTs)

e Phase, Inc. did not observe any ASTs at the Site. Moreover, Mr. Spangler was unaware of any ASTs at the Site.

7.2.3 Hazardous Substances and Petroleum Products

e Phase, Inc. observed a number of containers and buckets, a rusted out drum, empty paint cans, and various other debris scattered about on the east and north portions of the former plant. No visual evidence of leakage, spillage, or misuse was observed. Hazardous substances or petroleum products that constitute evidence of a *recognized environmental condition* were not observed at the subject property at the time of the site reconnaissance.

7.2.4 Hazardous and Petroleum Waste

Hazardous or petroleum waste is not generated at the Site. We did not observe any hazardous or petroleum waste containers or unidentified waste containers of any type at the Site.

7.2.5 Polychlorinated Biphenyls (PCBs)

e Phase, Inc. observed a pad-mounted electrical transformer located within the enclosed, fenced-in sewage pumping area. No issues of environmental concern were identified for this transformer.

7.2.6 Solid Waste Disposal

Various construction and waste debris, including paint cans, a rusted drum and other metallic debris, and debris mounds of unknown material were observed on

the northeast side of the barn possibly from portions of this building's collapse or by trespassers. Staining in and around these areas was not noted.

7.2.7 Distressed Surfaces or Vegetation

e Phase, Inc. did not observe any stained or discolored paving or soils, nor did we detect any odors in soils that might suggest releases of hazardous substances or petroleum products. We observed abundant vegetation at the Site, which appeared seasonally healthy and unstressed. *e Phase, Inc.* did not observe any stressed vegetation at the Site that might suggest the presence of hazardous substances, petroleum, or petroleum products.

7.2.8 Septic Systems and Cesspools

Within the scope of this ESA, it could not be determined how previous septic wastes were handled/disposed. However, according to a Site plan from 1987, an existing cesspool is/was present on the eastern side of the Site. *e Phase, Inc.* did not note this subsurface structure during the Site inspection.

An on-site sewage pumping station is located in eastern portion of the property. The associated sewage line runs roughly parallel to Plum Run.

7.2.9 Wells and Cisterns

e Phase, Inc. did not observe any wells or cisterns at the Site. A spring house located to the northeast of the barn/slaughterhouse formerly provided water to the Site.

7.2.10 Waste Pits, Landfills, Lagoons, Ponds, Basins, and Impoundments

e Phase, Inc. did not observe any waste pits, landfills, lagoons, ponds, basins, or other impoundments at the Site.

7.2.11 Aboveground and Underground Piping

e Phase, Inc. noted the presence of unidentified subsurface piping adjacent to the east side of the barn (see Appendix D, Photograph 16). e *Phase, Inc*. was unable to properly characterize the historical use of the piping from the limited physical inspection. This may be associated with the water distribution at the Site, but this is pure speculation.

7.2.12 Floor Drains, Storm Drains, and Sumps

e Phase, Inc. did not observe any floor drains, storm drains, or sumps at the Site.

7.2.13 Elevators and Hydraulic Lifts

e Phase, Inc. did not observe any elevators or hydraulic lifts at the Site.

7.2.14 Additional Underground Structures

Other than utilities and the underground structures described above, *e Phase, Inc.* did not observe any evidence of additional underground structures at the Site. Moreover, the Site contact was unaware of any additional underground structures at the Site.

7.2.15 Explosive Gas

e Phase, Inc. did not observe any Site operations (such as landfilling) or geologic conditions (such as oil or natural gas deposits) that could constitute a source of explosive gas.

7.2.16 Airborne and Waterborne Contamination

e Phase, Inc. did not observe any physical evidence of airborne or waterborne contamination from on-Site activities or adjacent properties. *e Phase, Inc.* did not observe any equipment which may contain ozone-depleting substances at the Site.

7.2.17 Vapor Intrusion

e Phase, Inc. did not observe any conditions at the Site which could result in a potential vapor intrusion condition.

7.2.18 Special Scope Considerations

7.2.18.1 Asbestos-Containing Building Material (ACBM)

e Phase, Inc. conducted a visual inspection of thermal systems, surfacing materials, and miscellaneous materials, where accessible, to identify friable ACBM. Thermal systems may include boiler/pipe insulation; surfacing materials may include sprayed-on and trowelled-on plaster and fireproofing;

and, miscellaneous materials may include floor tiles, adhesive mastic, and transite board.

e Phase, Inc. observed suspect damaged ACBM during the site reconnaissance in the form of roofing materials (shingles) on both the barn and the spring house. The 1973 National Emission Standards for Hazardous Air Pollutants partially banned the use of spray-applied ACBM in new buildings. The government expanded these regulations in 1975 and 1978 to ban the use of all types of ACBM in new buildings. The barn and spring house were constructed prior to 1978. Therefore, building materials such as vinyl floor tiling and mastics, acoustical ceiling tiles, roofing materials, plaster, wallboard assemblies, flexible fabric ductwork connectors, fire doors, and electrical cable coverings are assumed to contain ACBM unless collected for laboratory analysis and proven otherwise. As long as these materials are intact and in good condition, they do not pose an unacceptable health risk to Site occupants. However, due to the deteriorating conditions noted at the Site, *e Phase, Inc.* identifies this to be a significant environmental condition.

7.2.18.2 Lead-Based Paint (LBP)

The use of LBP was discontinued in 1978. It is likely that there is lead-based paint present in the Site buildings since they were constructed prior to 1978.

7.2.18.3 Lead in Drinking Water

e Phase, Inc. did not conduct laboratory analysis for lead or other potential contaminants in drinking water since such testing is beyond the scope of this ESA.

7.2.18.4 Radon

According to the database report, radon concentrations in the vicinity of the Site average 3.4 pCi/L, which is below the EPA's recommended action level of 4.0pCi/L. However, according to the EPA's radon zone map, the Site is in Zone One, an area of high radon propensity. Thus, it is possible that the Site has elevated radon levels.

7.2.18.5 Mold

e Phase, Inc. did not conduct an evaluation for visual indications of mold because such evaluation is beyond the scope of this ESA.

8.0 Interviews

8.1 Interview with Site Contact

e Phase, Inc. interviewed Mr. John Spangler, the Site contact, in regards to Site environmental conditions on April 6, 2015. Mr. Spangler was unaware of any environmental conditions in connection with the Site.

8.2 Interview with Site Owner

e Phase, Inc. did not interview the Site owner as part of this ESA.

8.3 Interviews with Local Government Officials

8.3.1 East Bradford Township

e Phase, Inc. reviewed Site-specific East Bradford Township files that included historical, zoning and building documentation as detailed in Section 5.3.1.

8.3.2 Fire Marshal

e Phase, Inc. contacted Mr. Harrison Holt, Chester County Chief County Fire Marshall on April 7, 2015 and requested access to any records (i.e., tank permits, hazardous materials incidents, etc.) he may have on file for the Site. Chief Holt indicated he has nothing on file for this request.

8.4 Interviews with Local Residents

According to ASTM 1527-13, if the subject property is abandoned and there is evidence of potential unauthorized uses of the *abandoned property* or evidence of uncontrolled access to the *abandoned property*, an interview with one or more owners or occupants of neighboring or nearby properties must be conducted.

Because the subject property is not categorized as an *abandoned property*, interviews with owners or occupants of neighboring or nearby properties were not conducted.

9.0 Findings and Opinions

e Phase, Inc. has identified the following evidence of *RECs*, *HRECs*, *CRECs* and other environmental findings in connection with the subject property and/or vicinity:

Recognized Environmental Conditions

None.

Historical Recognized Environmental Conditions

None.

Controlled Recognized Environmental Conditions

None.

Significant Environmental Concerns

1. Possible presence of ACBMs within the barn/slaughterhouse and spring house (roofing material) based on the ages of these structures.

Moderate Environmental Concerns

1. Possible presence of LBP within the Site structures.

2. According to the database report, radon concentrations in the vicinity of the Site average 3.4 pCi/L, which is below the EPA's recommended action level of 4.0pCi/L. However, according to the EPA's radon zone map, the Site is in Zone One, an area of high radon propensity. Thus, it is possible that the Site has elevated radon levels.

3. Unidentified subsurface piping observed adjacent to the east side of the slaughterhouse/barn.

4. Various construction and waste debris, including paint cans, a rusted drum, and debris mounds of unknown material were observed on the northeast side of the former slaughterhouse/barn possibly the result of portions of this building's collapse or by trespassers. Staining in and around these areas was not noted.

***de minimis* Conditions**

1. Within the prescribed radius, *Brandywine Gardens & Greenhouse* was identified by the database search as a CERCLIS NFRAP facility. Based upon the predicted groundwater flow to the south, the identified site lies in the

downgradient location and, as such, is unlikely to be impacting Site subsurface conditions.

10.0 Conclusions and Recommendations

e Phase, Inc. has performed this ESA in general conformance with the scope and limitations of ASTM Standard E 1527-13 of the former *Strode's Mill Pork Processing Plant*, 635 Birmingham Road, West Chester, East Bradford Township, Chester County, Pennsylvania, the Site. Any exceptions to, or deletions from, this practice and any site-specific limiting conditions and/or data gaps are described in Sections 1.4 and 11.0 of this report. Any additional services requested by the Client which were conducted beyond the scope of this practice are described in Section 12.0 of this report. This assessment has revealed no *recognized environmental condition*, no *historical recognized environmental conditions*, no *controlled recognized environmental conditions* and six environmental findings in connection with the subject property and/or vicinity.

Recognized Environmental Conditions

None.

Historical Recognized Environmental Conditions

None.

Controlled Recognized Environmental Conditions

None.

Significant Environmental Concerns

1. Based upon the age of the structures, ACBM may be present. *e Phase, Inc.* observed suspect ACBM in the form of roofing material.

Moderate Environmental Concerns

1. It is possible that the Site structures contain LBP.
2. It is possible that Site contains elevated radon levels.
3. The unidentified subsurface piping observed adjacent to the east side of the barn is of moderate environmental concern.
4. The debris noted on the northern side of the barn is of moderate environmental concern.

***de minimis* Conditions**

1. Based upon the predicted groundwater flow to the south, the property identified by the database search is unlikely to be impacting Site subsurface conditions.

Recommendations

Within the scope of this investigation, *e Phase, Inc.* has not identified evidence of *recognized environmental conditions, historical recognized environmental conditions* or *controlled recognized environmental conditions* in connection with the subject property which would suggest the need for additional investigation. However, *e Phase, Inc*. recommends the following for the Site:

1. A comprehensive asbestos survey by a licensed asbestos inspector should be performed prior to any significant renovations/demolition activities that may be proposed.

2. Properly identify the former use of the subsurface piping on the east side of the barn to determine if an environmental risk exists; characterize/abandon in accordance with local, state, and Federal regulations.

3. Remove debris/mounds on the northern side of barn and visually assess the soils beneath these areas. Additional environmental activities may be recommended following the completion of this task.

11.0 Deviations

e Phase, Inc. performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Standard E 1527-13, except for any additional limitations, data gaps, and exceptions detailed in Section 1.4. *e Phase, Inc.* also conducted an evaluation of the surficial conditions of the Site for other environmental findings, namely significant environmental concerns, moderate environmental concerns, and *de minimis* conditions, as a supplement to the standard ASTM requirements.

12.0 Additional Services

Additional services beyond the scope of this practice were not requested by the Client.

13.0 References

East Bradford Township:

Building and Zoning records; records reviewed March 30, 2015.

Chester County:

Recorder of Deeds; records reviewed March 30, 2015.

Assessor's Office; records reviewed March 30, 2015.

Interviews:

John Spangler, Esq., owner representative; April 6, 2015.

Mr. Harrison Holt, Chester County Fire Marshal; April 8, 2015.

Database Search:

EDR, Environmental FirstSearch Report, "Target Site: 635 Birmingham Road, East Bradford, Pennsylvania 19382," compiled March 31, 2015.

Resources:

United States Geological Survey; *West Chester, (PA) Quadrangle* 7.5 minute series Topographic Quadrangle, dated 2013. Available online: http://store.usgs.gov/; accessed March 31, 2015.

United States Fish and Wildlife Service; *Wetlands Online Mapper*. Available online: http://www.fws.gov/wetlands/Data/mapper.html; accessed March 31, 2015.

United States Department of Agriculture, Natural Resources Conservation Service; *Web Soil Survey*. Available online: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx; accessed March 31, 2015.

Federal Emergency Management Agency; *Flood Insurance Rate Map*, Community Panel #42029 C0260 F, dated September 29, 2006. Available online: http://msc.fema.gov/; accessed March 31, 2015.

Pennsylvania Geologic Survey; *Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania.* Available online: http://www.gis.dcnr.state.pa.us/maps/index.html?geology=true; accessed March 31, 2015.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions. Available online; accessed March 31, 2015.

Historic Aerials; *Aerial Photographs*, dated 1950, 1968, 1979, 1992, 2002, 2008, 2010 and 2013. Available online: http://www.historicaerials.com; accessed April 2, 2015.

ProQuest Information and Learning Company; *ProQuest Information and Learning's Digital Sanborn Fire Insurance Rate Maps; accessed* April 2, 2015. No maps found for the Site.

Pennpilot; *Aerial Photographs*, dated 1937, 1958, and 1971. Available online: http://www.pennpilot.psu.edu; accessed April 2, 2015.

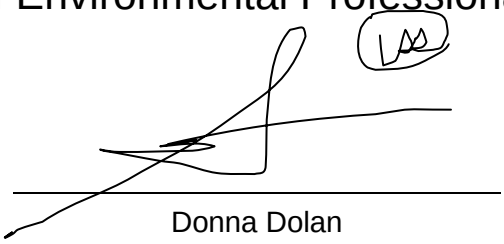
Google Earth; *Aerial Photographs*, dated 1992, 2002, 2004, 2008, 2010, and 2011. Available online: http://earth.google.com/; accessed April 2, 2015.

Historic Map Works; *Chester County Historical Atlases*, dated 1873, 1883, 1912 and 1933. Available online: http://www.historicmapworks.com; accessed April 2, 2015.

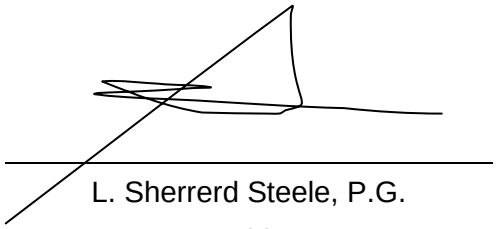
Historic Topographic Maps, maps dated 1924, 1932, 1943, 1951, 1956, 1962, 1969, 1975, 1988, 1996, and 2000. Available online: http://www.historicaerials.com; accessed April 2, 2015.

Philadelphia Free Library; *Aerial Photographs*, dated 1930, 1965, 1970, 1975, 1980, 1985, 1990, 1995, 2000, and 2005.

14.0 Signatures of Environmental Professionals



Donna Dolan
Environmental Assessor



L. Sherrerd Steele, P.G.
President

I (L. Sherrerd Steele) declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of *Innocent Landowners, Standards for Conducting All Appropriate Inquiries*. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR part 312.

APPENDIX A GLOSSARY OF TERMS

Glossary of Terms

ACBM: Asbestos-containing building material.
Adjoining: A property that is contiguous, or a property that would be contiguous if not for a public thoroughfare, to the target property.
AST: Aboveground storage tank.
ASTM: American Society for Testing and Materials.
CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System.
Controlled Recognized Environmental Condition (CREC): A *CREC* is defined as "a *recognized environmental condition* resulting from a past *release* of *hazardous substances* or *petroleum products* that has been addressed to the satisfaction of the applicable regulatory authority, with *hazardous substances* or *petroleum products* allowed to remain in place subject to the implementation of required controls." Note that a condition identified as a *CREC* does not imply that the *Environmental Professional* has evaluated or confirmed the adequacy, implementation, or continued effectiveness of the require control that has been, or is intended to be, implemented.
CORRACTS: RCRA Corrective Action Facility.
Data Failure: When all of the standard historical sources that are reasonably attainable and likely to be useful have been reviewed and yet the objectives have not been met.
Data Gap: Lack of or inability to obtain information required by ASTM 1527-13 despite good faith efforts by the environmental professional to gather such information.
De Minimis: A *de minimis* condition is defined as a "condition that generally does not present a threat to human health or the *environment* and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be *de minimis* conditions are not *RECs* or *CRECs*."
DEP: Department of Environmental Protection.
EC: Engineering Control.
Environment: ASTM notes the *environment* shall have the same meaning as the definition of environment in "CERCLA 42 U.S.C. § 9601(8)." CERCLA indicates a release into the environment as any release into navigable waters, any other surface waters, groundwater, drinking water supply, land surface or subsurface strata, or ambient air.
EPA: Environmental Protection Agency.
ERNS: Emergency Response Notification System.
ESA: Environmental Site Assessment.
Hazardous Substance: Substances defined in CERCLA section 101(14).
Historical Recognized Environmental Condition (HREC)*:* A *HREC* is defined as "a past *release* of any *hazardous substances* or *petroleum products* that has occurred in connection with the Site and had been addressed to the satisfaction of the applicable regulatory authority, without subjecting the Site to any required controls."
IC: Institutional Control.
LBP: Lead-based paint.
L&I: License & Inspection.
LUST: Leaking Underground Storage Tank.
Material Threat: A *material threat* is defined as "a physically observable or *obvious* threat which is reasonably likely to lead to a release that, in the opinion of the *Environmental Professional*, is threatening and might result in impact to public health or the environment."
Migrate/Migration: *Migrate/Migration* is defined as "the movement of *hazardous substances* or *petroleum products* in any form, including, solid and liquid at the surface or subsurface, and vapor in the subsurface."
NFRAP: No Further Remedial Action Planned.

NPL: National Priority List.
PCB: Polychlorinated Biphenyls.
Recognized environmental condition (REC): A *REC* is defined as "the presence or likely presence of any *hazardous substances* or *petroleum products* in, on, or at a Site*:* (1) due to any *release* to the *environment;* (2) under conditions indicative of a *release* to the *environment;* or (3) under conditions that pose a *material threat* of a *release* to the *environment*."
Release: ASTM notes "a *release* of any *hazardous substances* or *petroleum product* shall have the same meaning as definition of "release" in CERCLA 42 U.S.C. § 9601(22)." CERCLA indicates a *release* as "any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substances, or pollutant or contaminant, but excludes (A) any release which results in exposure to person solely within a workplace, (B) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine, (C) release of source, byproduct, or special nuclear material from a nuclear incident, and (D) the normal application of fertilizer."
RCRA: Resource Conservation and Recovery Act.
SWL: Solid Waste Landfill.
TSD: RCRA Treatment, Storage, and Disposal facility.
User: The party seeking to use the Phase I ESA.
USGS: United States Geological Survey.
UST: Underground Storage Tank.
VCP: Voluntary Cleanup Program.

APPENDIX B QUALIFICATIONS OF RESPONSIBLE ENVIRONMENTAL PROFESSIONALS

L. Sherrerd Steele, P.G.
President

Technical Specialties:
Environmental Site Assessments. Regulatory Compliance Audits. Investigation of Groundwater and Soil Contamination. Remedial Investigations/Feasibility Studies. Litigation support.

Experience Summary:
Over 27 years of experience: President of *e Phase, Inc*.; Principal Hydrogeologist for Integrated Environmental Solutions, Inc.; Senior Hydrogeologist for Roux Associates, Inc.; Assistant, Associate, and Project Geologist for Roy F. Weston, Inc. Directed and participated in RI/FS studies, groundwater assessments, ISRA and other real estate transaction investigations, regulatory agency negotiations, and provided technical support for legal counsel.

Credentials:
M.S. Engineering Geology, Drexel University, 1989
B.S. Geology, Franklin & Marshall College, 1983

Registered Professional Geologist, Tennessee (TN1026)
Registered Professional Geologist, Arkansas (680)
Certified Subsurface Evaluator, New Jersey

Professional Affiliations:
Society of Women Environmental Professionals, past Co-chair and long-time board member
Greater West Chester Chamber of Commerce, Past President
Chester County Industrial Development Council, Board Member
Past Board Member of Chester County Water Resources Authority
Women's Referral Network, Past Board of Directors
Past Board Member, YMCA of West Chester

Publications:
M.S. Thesis, "Sediment Budget Analysis for Ocean City, New Jersey," Drexel University, 1989
NOAA, "Medical Manual for Hazardous Marine Occupations," Washington, DC, 1983

Honors:
- Selected by the White House as one of 20 women across the United States to participate in the first Women in Trade, Business Development Mission to Europe, the only women from the U.S. representing the environmental industry.

Key Projects:
- Performed and supervised nearly three thousand environmental assessments of commercial/industrial properties throughout the United States ranging from single site commercial properties to multi state, multi site property portfolios.

- Project manager for the City of Philadelphia Brownfield portfolio, where *e Phase, Inc*. is the only provider of Phase Is for this portfolio (since 1999). Projects include assessments of old factory buildings, industrial facilities with complicated histories and dilapidated properties undergoing extensive rehabilitation.

- Project manager for hundreds of environmental assessments for the telecommunications industry (cell towers), the locations of which range from Maine to West Virginia.

- Principal-in-charge for environmental assessments for several national franchise accounts acquiring outparcel lots/existing facilities for anticipated building construction/renovation. Franchises include, among others, the fork lift, food and autobody industries.

- Oversaw environmental assessments of fiber optic regeneration stations along railroad rights-of-ways in Utah, Texas, Colorado, Arizona and Kansas.

- Principal-in-charge of a RI/FS study for a State Superfund site in New York State. Responsibilities include oversite of well installation, soil and sewer sampling, and management of remediation system operation consisting of soil vapor/groundwater extraction and ex-situ bioremediation.

- Project Manager for a large RCRA Corrective Action facility in Missouri. Evaluated groundwater conditions site wide. Prepared Workplans for buried container removal, DNAPL investigation, stormwater control, underground mine and brecciated channel definition. Managed the operation of the on-site remediation system, performed and evaluated extensive aquifer pumping tests and prepared the RCRA Remedial Investigation Report.

- Project Manager for an operating groundwater pump and treatment ECRA site in New Jersey. Developed quarterly reporting program and directed groundwater sampling, and monitoring well drilling and abandonment.

- Directed program to determine the feasibility of No. 6 fuel oil recovery in a residential area of New Jersey. Program included quarterly depth-to-water/depth-to-product measurements, aquifer pumping test, product baildown recovery tests, plume definition and regulating agency negotiations.

- Project Manager for investigations of petroleum hydrocarbon soil and groundwater contamination problem at retail gasoline stations throughout New Jersey and Pennsylvania.

- Project Manager for a RI/FS study operating under an Administrative Consent Order (ACO). Performed hydrogeologic and soil investigations including packer testing in an artesian bedrock aquifer, aquifer pump and recovery testing, soil and groundwater sampling, a soil-gas survey, a risk assessment and regulatory agency negotiations.

- Managed and directed removal of underground storage tanks and subsequent investigation and remediation programs at locations throughout the northeast.

- Project Manager for several litigation cases in Pennsylvania and New Jersey. Responsibilities included groundwater flow direction determination, mapping of hydrocarbon plume, calculating plume velocities providing technical support for legal counsel and peer review.

- Project Geologist for a chlorinated hydrocarbon hydrogeologic investigation in northeast Ohio. Project included determining whether contamination had migrated to municipal wells from an industrial facility or secondary source using aquifer modeling, well installation, groundwater sampling and soil-gas surveys.

- Project Geologist for an RI/FS Superfund site in New Jersey. Responsibilities included work plan and project operation development and implementation, coordination of field activities,

including soil and groundwater sampling, aquifer drawdown and recovery testing, data reduction and analysis and mapping of contaminant plume migration.

- Key Hydrogeologist participating in a groundwater investigation for potential pesticide contamination in several areas in the United States. Responsibilities included document search and well log review for prospective sampling locations. Initiated public contact, coordinated sampling teams, and participated in groundwater sampling.

- Participated in investigations to determine hydrogeologic characteristics of unconsolidated aquifers in New Jersey and South Carolina. Performed drawdown/ recovery and slug tests and collected water level data during the tests using electronic data loggers. Analyzed data using computer models.

- Lead Geologist involved in assessing the extent of contamination in abandoned landfills in Minnesota. Involved in analysis of GPR, supervision of drilling, soil sampling, and air monitoring.

APPENDIX C FIGURES

e Phase, Inc.
P.O. Box 44
West Chester, PA 19381-0044

N

Project #: 15-284.10

Not to Scale

SITE PLAN – 2011 Aerial Photograph

635 Birmingham Road
East Bradford Township, Pennsylvania

Approximate Property Boundary:

e Phase, Inc.
P.O. Box 44
West Chester, PA 19381-0044

N

Project #: 15-284.10

Not to Scale

SITE PLAN – 2011 Aerial Photograph
635 Birmingham Road
East Bradford Township, Pennsylvania

:

APPENDIX D PHOTOGRAPHS

Photographs for Project 284.10
635 Birmingham Road, West Chester, Pennsylvania

Photo 1 - Access to site off north of Birmingham Rd

Photo 2 - Sewage pumping station

Photo 3 - Transformer within sewage pumping station

Photo 4 - Sewage manhole

Photo 5 - Plum Run

Photo 6 - Mesh along eastern slope

Photographs for Project 284.10
635 Birmingham Road, West Chester, Pennsylvania

Photo 7 - Southeast corner of structure

Photo 8 - North side/interior structure

Photo 9 - West side of building

Photo 10 – Rear/east side of structure

Photo 11 - Springhouse

Photo 12 - View within springhouse

Photographs for Project 284.10
635 Birmingham Road, West Chester, Pennsylvania

Photo 13 - Rusted drum

Photo 14 - Miscellaneous debris

Photo 15 - Debris

Photo 16 - Unknown subsurface piping

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APPENDIX E REGULATORY DOCUMENTATION

635 Birmingham Road
635 Birmingham Road
East Bradford, PA 19382

Inquiry Number: 4248358.2s
March 30, 2015

FirstSearch Report

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Search Summary Report

TARGET SITE **635 BIRMINGHAM ROAD**
EAST BRADFORD, PA 19382

Category	Sel	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	Y	0	0	0	0	0	0	0
NPL Delisted	Y	0	0	0	0	0	0	0
CERCLIS	Y	0	0	0	0	-	0	0
NFRAP	Y	0	0	0	1	-	0	1
RCRA COR ACT	Y	0	0	0	0	0	0	0
RCRA TSD	Y	0	0	0	0	-	0	0
RCRA GEN	Y	0	0	0	-	-	0	0
Federal IC / EC	Y	0	0	0	0	-	0	0
ERNS	Y	0	-	-	-	-	0	0
State/Tribal NPL	Y	0	0	0	0	0	0	0
State/Tribal SWL	Y	0	0	0	0	-	0	0
State/Tribal LTANKS	Y	0	0	0	0	-	0	0
State/Tribal Tanks	Y	0	0	0	-	-	0	0
State/Tribal IC / EC	Y	0	0	0	0	-	0	0
State/Tribal VCP	Y	0	0	0	0	-	0	0
ST/Tribal Brownfields	Y	0	0	0	0	-	0	0
US Brownfields	Y	0	0	0	0	-	0	0
Other Haz Sites	Y	0	-	-	-	-	0	0
Spills	Y	0	-	-	-	-	0	0
Other	Y	0	0	0	-	-	0	0
	- Totals --	0	0	0	1	0	0	1

Search Summary Report

TARGET SITE: **635 BIRMINGHAM ROAD**
EAST BRADFORD, PA 19382

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
NPL	NPL	12/16/2014	1.000	0	0	0	0	0	0	0
	Proposed NPL	12/16/2014	1.000	0	0	0	0	0	0	0
NPL Delisted	Delisted NPL	12/16/2014	1.000	0	0	0	0	0	0	0
CERCLIS	CERCLIS	10/25/2013	0.500	0	0	0	0	-	0	0
NFRAP	CERC-NFRAP	10/25/2013	0.500	0	0	0	1	-	0	1
RCRA COR ACT	CORRACTS	12/09/2014	1.000	0	0	0	0	0	0	0
RCRA TSD	RCRA-TSDF	12/09/2014	0.500	0	0	0	0	-	0	0
RCRA GEN	RCRA-LQG	12/09/2014	0.250	0	0	0	-	-	0	0
	RCRA-SQG	12/09/2014	0.250	0	0	0	-	-	0	0
	RCRA-CESQG	12/09/2014	0.250	0	0	0	-	-	0	0
Federal IC / EC	US ENG CONTROLS	09/18/2014	0.500	0	0	0	0	-	0	0
	US INST CONTROL	09/18/2014	0.500	0	0	0	0	-	0	0
ERNS	ERNS	09/29/2014	TP	0	-	-	-	-	0	0
State/Tribal NPL	SHWS	01/19/2015	1.000	0	0	0	0	0	0	0
	HSCA	09/30/2014	1.000	0	0	0	0	0	0	0
State/Tribal SWL	SWF/LF	02/24/2015	0.500	0	0	0	0	-	0	0
State/Tribal LTANKS	LUST	12/15/2014	0.500	0	0	0	0	-	0	0
	LAST	12/15/2014	0.500	0	0	0	0	-	0	0
	INDIAN LUST	02/01/2013	0.500	0	0	0	0	-	0	0
State/Tribal Tanks	UST	01/02/2015	0.250	0	0	0	-	-	0	0
	AST	01/02/2015	0.250	0	0	0	-	-	0	0
	INDIAN UST	02/01/2013	0.250	0	0	0	-	-	0	0
State/Tribal IC / EC	ENG CONTROLS	05/15/2008	0.500	0	0	0	0	-	0	0
	INST CONTROL	05/15/2008	0.500	0	0	0	0	-	0	0
State/Tribal VCP	VCP	01/12/2015	0.500	0	0	0	0	-	0	0
ST/Tribal Brownfields	BROWNFIELDS	01/20/2015	0.500	0	0	0	0	-	0	0

Search Summary Report

TARGET SITE: **635 BIRMINGHAM ROAD**
EAST BRADFORD, PA 19382

Category	Database	Update	Radius	Site	1/8	1/4	1/2	> 1/2	ZIP	TOTALS
US Brownfields	US BROWNFIELDS	12/22/2014	0.500	0	0	0	0	-	0	0
Other Haz Sites	US CDL	02/25/2015	TP	0	-	-	-	-	0	0
Spills	HMIRS	12/29/2014	TP	0	-	-	-	-	0	0
	SPILLS	12/31/2014	TP	0	-	-	-	-	0	0
Other	RCRA NonGen / NLR	12/09/2014	0.250	0	0	0	-	-	0	0
	TRIS	12/31/2011	TP	0	-	-	-	-	0	0
	TSCA	12/31/2012	TP	0	-	-	-	-	0	0
	FTTS	04/09/2009	TP	0	-	-	-	-	0	0
	SSTS	12/31/2009	TP	0	-	-	-	-	0	0
	ICIS	01/23/2015	TP	0	-	-	-	-	0	0
	PADS	07/01/2014	TP	0	-	-	-	-	0	0
	MLTS	12/29/2014	TP	0	-	-	-	-	0	0
	RADINFO	02/27/2015	TP	0	-	-	-	-	0	0
	FINDS	01/18/2015	TP	0	-	-	-	-	0	0
	RAATS	04/17/1995	TP	0	-	-	-	-	0	0
	INDIAN RESERV	12/31/2005	1.000	0	0	0	0	0	0	0
	US AIRS	10/16/2014	TP	0	-	-	-	-	0	0
	MINES	01/06/2015	0.250	0	0	0	-	-	0	0
	PRP	10/25/2013	TP	0	-	-	-	-	0	0
	- Totals --			0	0	0	1	0	0	1

Site Information Report

Request Date: MARCH 30, 2015
Search Type: COORD
Request Name: SHERRERD STEELE
Job Number: NA

Target Site: 635 BIRMINGHAM ROAD
EAST BRADFORD, PA 19382

Site Location

	Degrees (Decimal)	Degrees (Min/Sec)	UTMs	
Longitude:	75.616400	75.6164000 - 75° 36' 59.04''	Easting:	447327.8
Latitude:	39.928400	39.9284000 - 39° 55' 42.24''	Northing:	4419782.5
Elevation:	223 ft. above sea level		Zone:	Zone 18

Demographics

Sites: 1 **Non-Geocoded:** 0 **Population:** N/A

RADON

EPA Region 3 Statistical Summary Readings for Zip Code: 19382

Number of sites tested: 2030.

Maximum Radon Level: 128.2 pCi/L.
Minimum Radon Level: 0.1 pCi/L.

pCi/L <4	pCi/L 4-10	pCi/L 10-20	pCi/L 20-50	pCi/L 50-100	pCi/L >100
1626 (80.10%)	308 (15.17%)	76 (3.74%)	15 (0.74%)	2 (0.10%)	3 (0.15%)

Federal EPA Radon Zone for CHESTER County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Site Information Report

RADON

State Database: PA Radon

Radon Test Results

Zipcode	Num Tests	Min pCi/L	Max pCi/L	Avg pCi/L
19382	7491	0	145.3	3.4

Target Site Summary Report

Target Property: 635 BIRMINGHAM ROAD
EAST BRADFORD, PA 19382

JOB: NA

TOTAL: 1 GEOCODED: 1 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.

No sites found for target address

Sites Summary Report

Target Property: 635 BIRMINGHAM ROAD
EAST BRADFORD, PA 19382

JOB: NA

TOTAL: 1 GEOCODED: 1 NON GEOCODED: 0

Map ID	DB Type --ID/Status	Site Name	Address	Dist/Dir	ElevDiff	Page No.
1	CERC-NFRAP --PAN000305719	BRANDYWINE GARDENS & GREENHOUS	1027 LENAPE ROAD WEST CHESTER, PA 19382	0.35 SW	- 24	1

Site Detail Report

Target Property: 635 BIRMINGHAM ROAD
EAST BRADFORD, PA 19382

JOB: NA

CERC-NFRAP

EDR ID: 1005440645 **DIST/DIR:** 0.346 SW **ELEVATION:** 199 **MAP ID:** 1

NAME: BRANDYWINE GARDENS & GREENHOUSE
ADDRESS: 1027 LENAPE ROAD
WEST CHESTER, PA 19382
CHESTER
SOURCE: US EPA

Rev: 10/25/2013
ID/Status: PAN000305719

CERC-NFRAP:
Site ID: 0305719
Federal Facility: Not a Federal Facility
NPL Status: Not on the NPL
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)

CERCLIS-NFRAP Site Contact Details:
Contact Sequence ID: 13310270.00000
Person ID: 3000105.00000

CERCLIS-NFRAP Assessment History:
Action: REMOVAL ASSESSMENT
Date Started: 08/10/01
Date Completed: 06/04/03
Priority Level: Not reported

Action: ARCHIVE SITE
Date Started: / /
Date Completed: 12/05/11
Priority Level: Not reported

Database Descriptions

NPL: NPL National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices. NPL - National Priority List Proposed NPL - Proposed National Priority List Sites.

NPL Delisted: DELISTED NPL The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate. DELISTED NPL - National Priority List Deletions

CERCLIS: CERCLIS CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL. CERCLIS - Comprehensive Environmental Response, Compensation, and Liability Information System

NFRAP: CERCLIS-NFRAP Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site. CERCLIS-NFRAP - CERCLIS No Further Remedial Action Planned

RCRA COR ACT: CORRACTS CORRACTS identifies hazardous waste handlers with RCRA corrective action activity. CORRACTS - Corrective Action Report

RCRA TSD: RCRA-TSDF RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste. RCRA-TSDF - RCRA - Treatment, Storage and Disposal

RCRA GEN: RCRA-LQG RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. RCRA-LQG - RCRA - Large Quantity Generators RCRA-SQG - RCRA - Small Quantity Generators. RCRA-CESQG - RCRA - Conditionally Exempt Small Quantity Generators.

Federal IC / EC: US ENG CONTROLS A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. US ENG CONTROLS - Engineering Controls Sites List US INST CONTROL - Sites with Institutional Controls.

ERNS: ERNS Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances. ERNS - Emergency Response Notification System

Database Descriptions

State/Tribal NPL: SHWS The Hazardous Sites Cleanup Act Site List includes sites listed on PA Priority List, sites delisted from PA Priority List, Interim Response Completed sites, and Sites Being Studied or Response Being Planned. SHWS - Hazardous Sites Cleanup Act Site List HSCA - HSCA Remedial Sites Listing.

State/Tribal SWL: SWF/LF The listing includes Municipal Waste Landfills, Construction/Demolition Waste Landfills and Waste-to-Energy Facilities. SWF/LF - Operating Facilities

State/Tribal LTANKS: LUST Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state. LUST - Storage Tank Release Sites LAST - Storage Tank Release Sites. INDIAN LUST R8 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R5 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R9 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R7 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R10 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R4 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R6 - Leaking Underground Storage Tanks on Indian Land. INDIAN LUST R1 - Leaking Underground Storage Tanks on Indian Land.

State/Tribal Tanks: UST Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program. UST - Listing of Pennsylvania Regulated Underground Storage Tanks AST - Listing of Pennsylvania Regulated Aboveground Storage Tanks. INDIAN UST R1 - Underground Storage Tanks on Indian Land. INDIAN UST R8 - Underground Storage Tanks on Indian Land. INDIAN UST R7 - Underground Storage Tanks on Indian Land. INDIAN UST R10 - Underground Storage Tanks on Indian Land. INDIAN UST R4 - Underground Storage Tanks on Indian Land. INDIAN UST R5 - Underground Storage Tanks on Indian Land. INDIAN UST R6 - Underground Storage Tanks on Indian Land. INDIAN UST R9 - Underground Storage Tanks on Indian Land.

State/Tribal IC / EC: ENG CONTROLS Under the Land Recycling Act (Act 2) persons who perform a site cleanup using the site-specific standard or the special industrial area standard may use engineering or institutional controls as part of the response action. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health. ENG CONTROLS - Engineering Controls Site Listing INST CONTROL - Institutional Controls Site Listing.

State/Tribal VCP: VCP The VCP listings included Completed Sites, Sites in Progress and Act 2 Non-Use Aquifer Determinations Sites. Formerly known as the Act 2, the Land Recycling Program encourages the voluntary cleanup and reuse of contaminated commercial and industrial sites. VCP - Voluntary Cleanup Program Sites

ST/Tribal Brownfields: BROWNFIELDS Brownfields are generally defined as abandoned or underused industrial or commercial properties where redevelopment is complicated by actual or perceived environmental contamination. Brownfields vary in size, location, age and past use. They can range from a small, abandoned corner gas station to a large, multi-acre former manufacturing plant that has been closed for years. BROWNFIELDS - Brownfields Sites

US Brownfields: US BROWNFIELDS Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs. US BROWNFIELDS - A Listing of Brownfields Sites

Other Haz Sites: US CDL A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. US CDL - Clandestine Drug Labs

Database Descriptions

Spills: HMIRS Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT. HMIRS - Hazardous Materials Information Reporting System SPILLS - State spills.

Other: RCRA NonGen / NLR RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste. RCRA NonGen / NLR - RCRA - Non Generators TRIS - Toxic Chemical Release Inventory System. TSCA - Toxic Substances Control Act. FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). FTTS INSP - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act). SSTS - Section 7 Tracking Systems. ICIS - Integrated Compliance Information System. PADS - PCB Activity Database System. MLTS - Material Licensing Tracking System. RADINFO - Radiation Information Database. FINDS - Facility Index System/Facility Registry System. RAATS - RCRA Administrative Action Tracking System. BRS - Biennial Reporting System. INDIAN RESERV - Indian Reservations. MINES - Abandoned Mine Land Inventory. FEDLAND - Federal and Indian Lands. PRP - Potentially Responsible Parties. US AIRS (AFS) - Aerometric Information Retrieval System Facility Subsystem (AFS). US AIRS MINOR - Air Facility System Data.

Database Sources

NPL: EPA

Updated Quarterly

NPL Delisted: EPA

Updated Quarterly

CERCLIS: EPA

Updated Quarterly

NFRAP: EPA

Updated Quarterly

RCRA COR ACT: EPA

Updated Quarterly

RCRA TSD: Environmental Protection Agency

Updated Quarterly

RCRA GEN: Environmental Protection Agency

Updated Quarterly

Federal IC / EC: Environmental Protection Agency

Varies

ERNS: National Response Center, United States Coast Guard

Updated Annually

State/Tribal NPL: Department Environmental Protection

Updated Semi-Annually

State/Tribal SWL: Department of Environmental Protection

Updated Semi-Annually

State/Tribal LTANKS: Department of Environmental Protection

Updated Semi-Annually

State/Tribal Tanks: Department of Environmental Protection

Varies

Database Sources

State/Tribal IC / EC: Department of Environmental Protection

No Update Planned

State/Tribal VCP: Department of Environmental Protection

Updated Semi-Annually

ST/Tribal Brownfields: Department of Environmental Protection

Varies

US Brownfields: Environmental Protection Agency

Updated Semi-Annually

Other Haz Sites: Drug Enforcement Administration

Updated Quarterly

Spills: U.S. Department of Transportation

Updated Annually

Other: Environmental Protection Agency

Varies

Street Name Report for Streets near the Target Property

Target Property: 635 BIRMINGHAM ROAD
EAST BRADFORD, PA 19382

JOB: NA

Street Name	Dist/Dir	Street Name	Dist/Dir
Allegiance Dr	0.19 NNW		
Birmingham Rd	0.01 SW		
Regimental Dr	0.15 ENE		
Riflery Dr	0.09 SE		
State Hwy 52	0.07 WNW		
Tigue Rd	0.18 NNE		

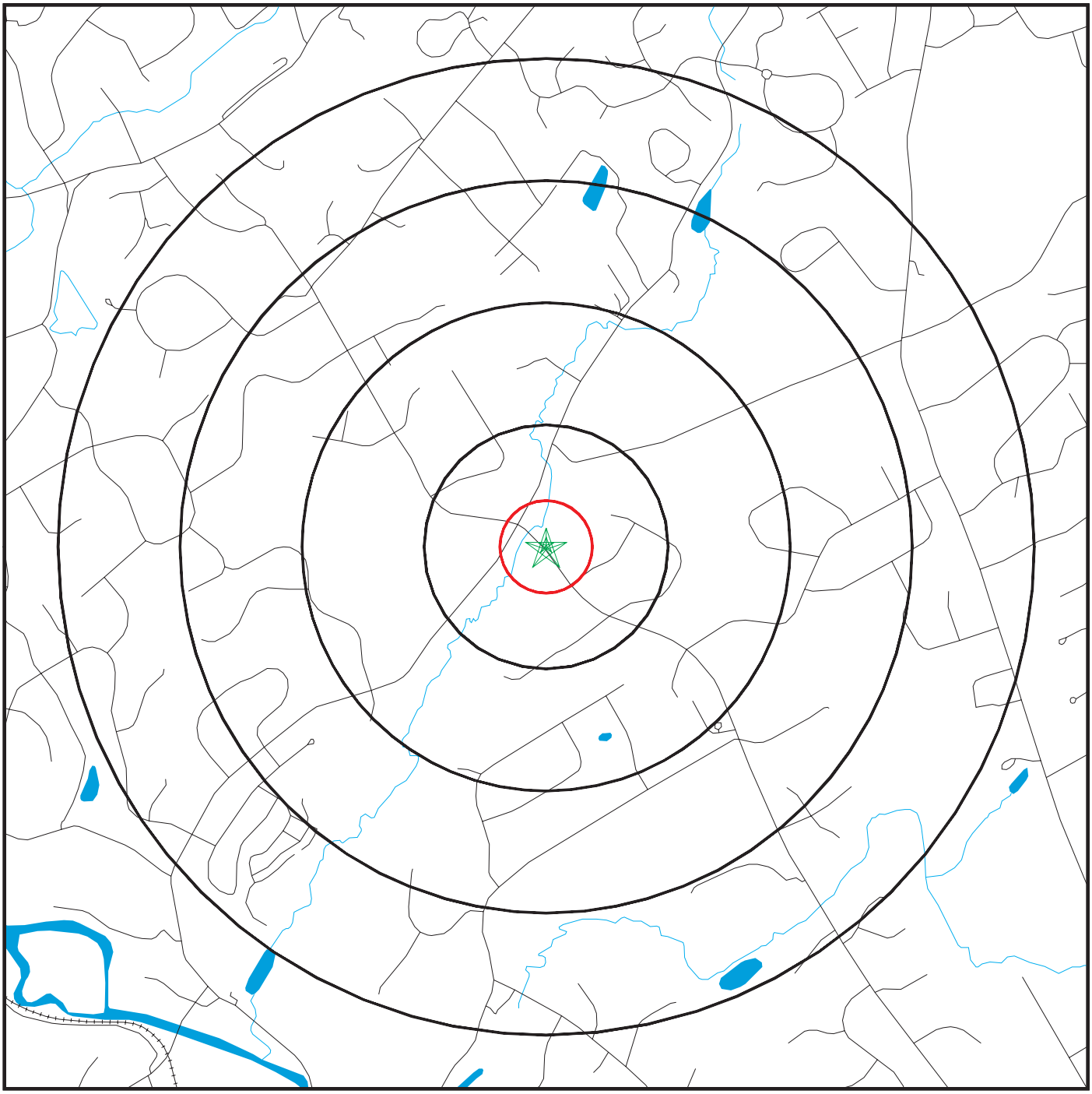
Environmental FirstSearch

1.000 Mile Radius

ASTM MAP: NPL, RCRACOR, STATES Sites

EDR® Environmental Data Resources Inc

635 BIRMINGHAM ROAD EAST BRADFORD, PA 19382



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 39.9284 Longitude: 75.6164)

▲ Identified Sites

National Priority List Sites

Indian Reservations BIA

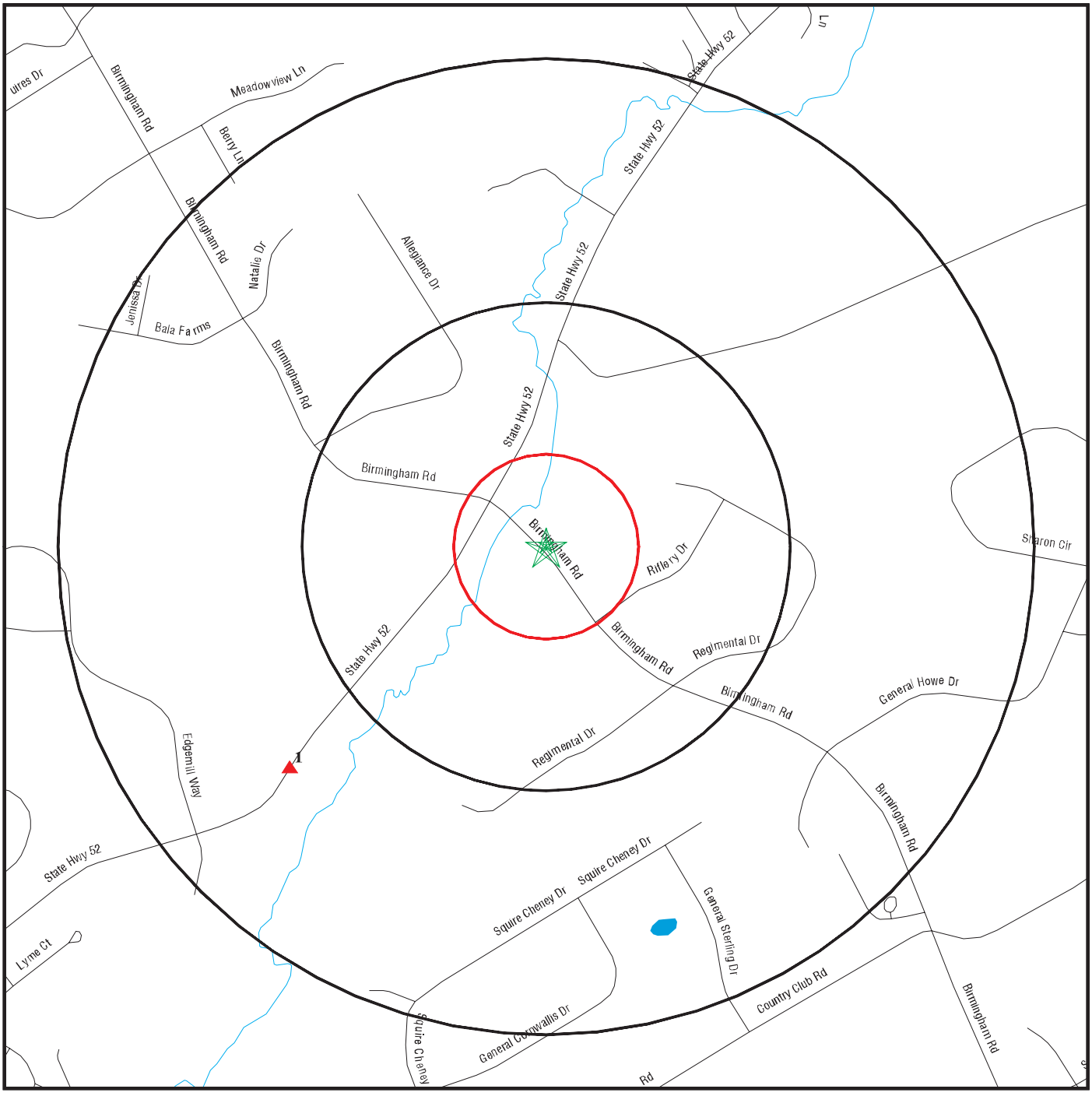
Environmental FirstSearch

0.500 Mile Radius

ASTM MAP: CERCLIS, RCRATSD, LUST, SWL

EDR® Environmental Data Resources Inc

635 BIRMINGHAM ROAD EAST BRADFORD, PA 19382



Black Rings Represent Qtr. Mile Radius; **Red Ring Represents 500 ft. Radius**

★ **Target Property (Latitude: 39.9284 Longitude: 75.6164)**

▲ **Identified Sites**

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 4248358.2s

15-03-30.10:28:29.Mon

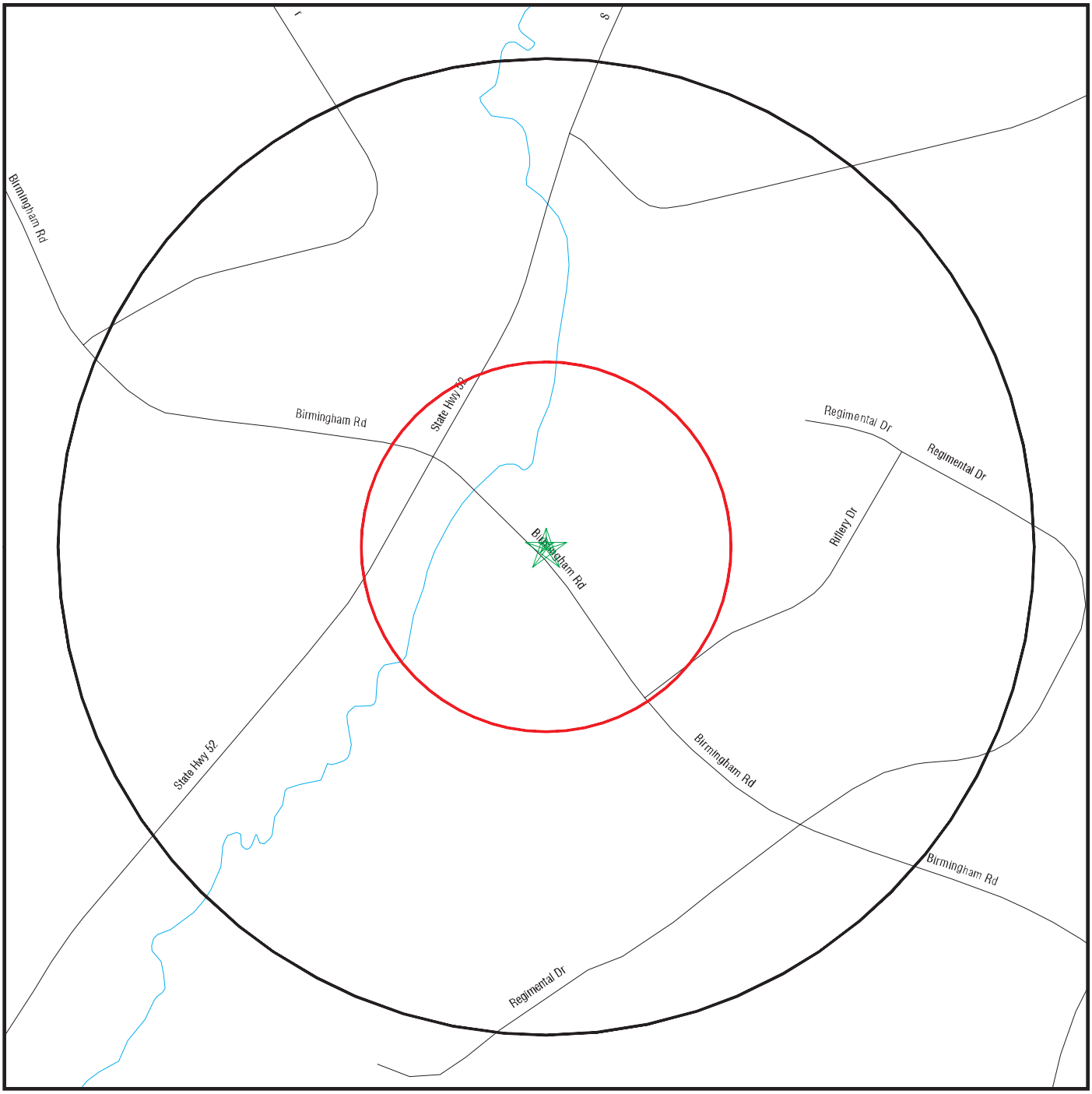
Environmental FirstSearch

0.25 Mile Radius

ASTM MAP: RCRAGEN, ERNS, UST, FED IC/EC, METH LABS

EDR® Environmental Data Resources Inc

635 BIRMINGHAM ROAD EAST BRADFORD, PA 19382



Black Rings Represent Qtr. Mile Radius; **Red Ring Represents 500 ft. Radius**

★ **Target Property (Latitude: 39.9284 Longitude: 75.6164)**

▲ **Identified Sites**

National Priority List Sites

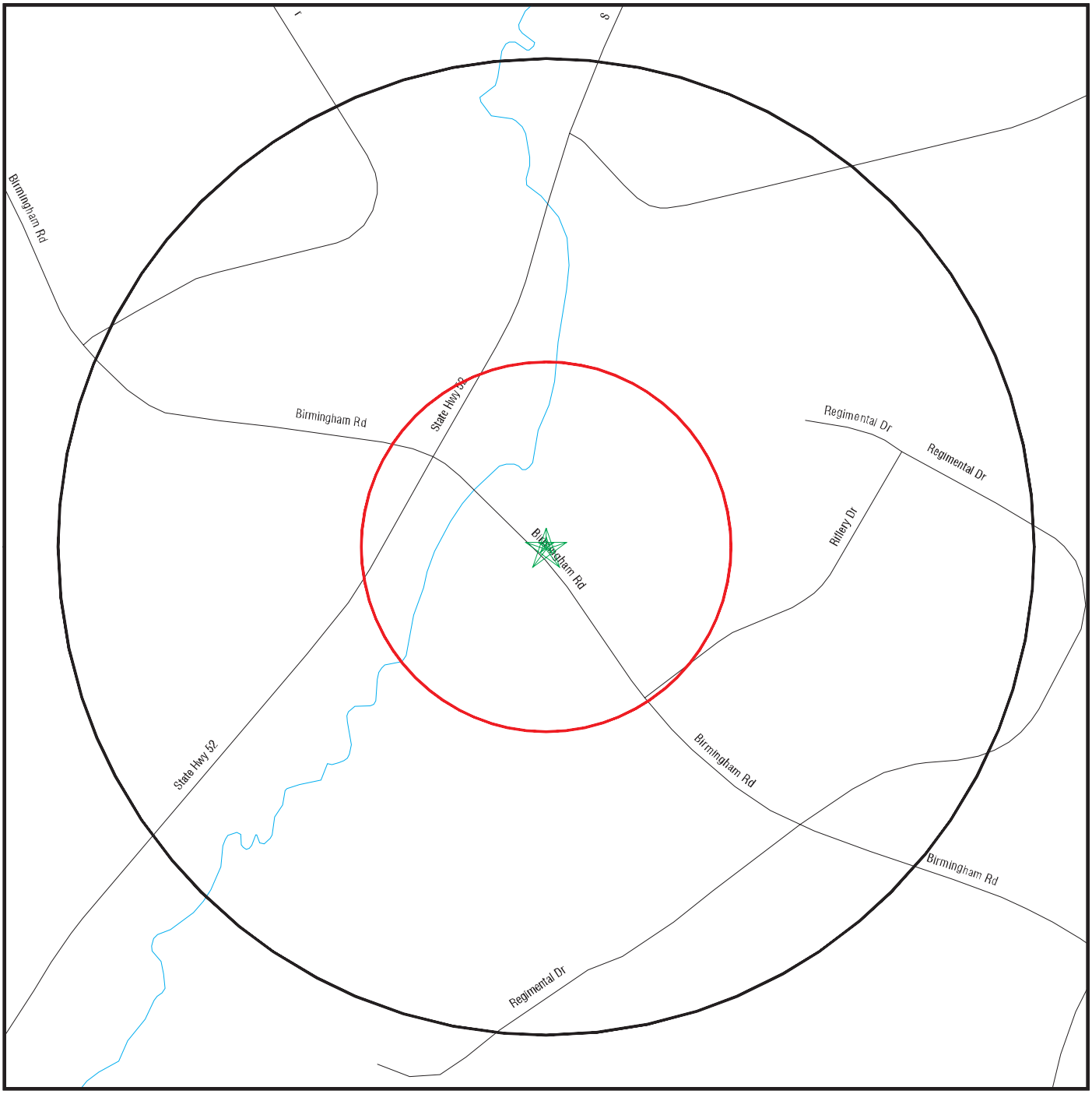
Indian Reservations BIA

Environmental FirstSearch

0.25 Mile Radius
Non ASTM Map, Spills, FINDS

EDR® Environmental Data Resources Inc

635 BIRMINGHAM ROAD EAST BRADFORD, PA 19382



Black Rings Represent Qtr. Mile Radius; Red Ring Represents 500 ft. Radius

★ Target Property (Latitude: 39.9284 Longitude: 75.6164)

▲ Identified Sites

Sensitive Receptors

National Priority List Sites

Indian Reservations BIA

EDR Reference Code (EDR Internal use only): 4248358.2s

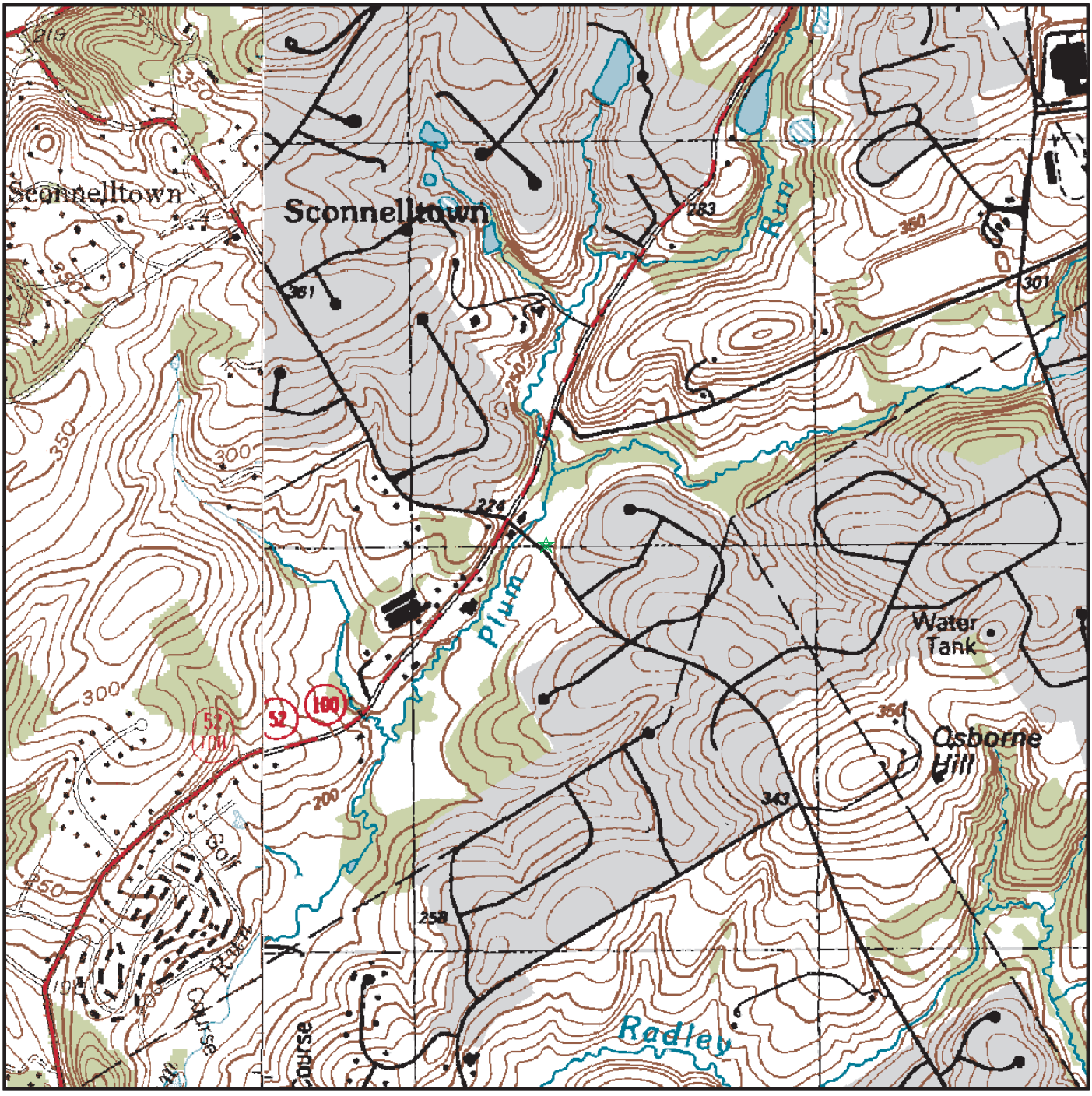
15-03-30.10:29:52.Mon

Site location Map

Topo: 0.75 Mile Radius

EDR® Environmental Data Resources Inc

635 BIRMINGHAM ROAD EAST BRADFORD, PA 19382



Map Image Position: TP
Map Reference Code & Name: 39075-H5 West Chester
Map State(s): PA
Modified Date: 2000
Map Image Position: W
Map Reference Code & Name: 39075-H6 Unionville
Map State(s): PA
Modified Date: 1992

APPENDIX F SUPPORTING DOCUMENTATION

Phase, Inc.

User Questionnaire

Name, Title, Company, and Company Address of *User* completing Questionnaire:

Name Mandie Cantlin

Title Asst. Township Mgr.

Company East Bradford Township

Address 666 Copeland School Rd.

City, State, Zip West Chester, PA 19380

Property for which this questionnaire applies (name and address):

Strode's Mill Sausage & Scrapple property
635 Birmingham Rd
51-7-137.2

Question	Yes	No	Unknown	If Yes, Please Explain
1. Are you aware of any environmental cleanup liens against the subject property that are filed or recorded under Federal, tribal, state or local law?	☐	☒	☐	
2. Are you aware of any *Activity and Use Limitations (AULs)*, such as engineering controls, land use restrictions or institutional controls that are in place at the subject property and/or have been filed or recorded in a registry under Federal, tribal, state or local law?	☐	☒	☐	
3. Do you have any *special knowledge* or experience related to the subject property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the subject property as that you would have specialized knowledge of the chemicals and processes used by this type of business?	☐	☒	☐	
4. Does the purchase price being paid for this property reasonably reflect the *fair market value* of the subject property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination if known or believed to be present at the subject property?	☒	☐	☐	
5. Are you aware of *commonly known or reasonably ascertainable* information about the subject property that would help to identify conditions indicative of releases or threatened releases? For example: a. Do you know the past uses of the subject property? b. Do you know of specific chemicals that are	a. ☒ b. ☐ c. ☐ d. ☐	a. ☐ b. ☒ c. ☒ d. ☒	a. ☐ b. ☐ c. ☐ d. ☐	

present or once were present at the subject property? c. Do you know of spills or other chemical releases that have taken place at the subject property? d. Do you know of any environmental cleanups that have taken place at the subject property?				
6. Based on your knowledge and experience related to the subject property, are there any *obvious indicators* that point to the presence or likely presence of contamination at the subject property?	☐	☒	☐	
7. If the property is not contaminated, are you aware of a significantly lower purchase price that does not reasonable reflect fair market value of the property.	☐	☒	☐	
8. Is the User aware of any prior environmental work performed at the property (if yes, please provide copy to *e Phase, Inc.*).	☐	☒	☐	
9. The User shall make known to the environmental professional the reason why the User wants to have the Phase I Environmental Site Assessment preformed or, if the User does not identify the purpose of the Phase I Environmental Site Assessment, the environmental professional shall assume the purpose is to quality for the LLP to CERCLA liability.	*State reason for Phase I:* The township is considering purchasing the property for open space/ Recreation.			

Signature

3/30/2015
Date

Please email this form for *e Phase, Inc.* to ssteele@ephase.com

This Deed, made this 20TH day of May 1988.

Between, CENTRAL AND WESTERN CHESTER COUNTY INDUSTRIAL DEVELOPMENT AUTHORITY

, a corporation organized and existing under and by virtue of the laws of The Commonwealth of Pennsylvania (hereinafter called "Grantor"), of the one part, and BLACK ROWAN, INC.

(hereinafter called the "Grantee "), of the other part.

Witnesseth, That in consideration of ($214,000.00) TWO HUNDRED FOURTEEN THOUSAND AND 00/100.... Dollars, in hand paid, the receipt whereof is hereby acknowledged, the said Grantor do es hereby grant and convey unto the said Grantee its successors and assigns.

ALL THAT CERTAIN tract of ground with various buildilngs erected thereon, owned by A. Darlington Strode, II, to be conveyed to Weavers Lebanon Bologna Company, Situate in East Bradford Township, Chester County, Pennsylvania, according to a Survey made by George E. Regester, Jr. & Sons, Inc. dated February 22, 1983 as taken from Drawing No. S-686.

BEGINNING at a stone marking a Northeasterly corner of this and Northwesterly corner of lands of Leo A. Tigue, said stone being set in an old Mill Race; thence leaving said stone and along lands of Leo A. Tigue, the following two courses and distances, to wit: (1) South 77 degrees 54 minutes 30 seconds East, 70.29 feet to an iron pin; and (2) South 58 degrees 24 minutes 30 seconds East, 272.79 feet to an iron pin marking a corner of this, a corner of lands of Leo A. Tigue, and a corner of other lands of A. Darlington Strode, II, of which this was a part; thence along lands of A. Darlington Strode, II, the following seven courses and distances, to wit: (1) South 61 degrees 57 minutes 38 seconds East, 224.69 feet to an iron pin; (2) South 54 degrees 08 minutes 17 seconds West, 185.35 feet to an iron pin; (3) South 22 degrees 38 minutes 43 seconds East, 239.22 feet to an iron pin; (4) South 78 degree 30 minutes 10 seconds West, 192.58 feet to an iron pin; (5) North 25 degrees 38 minutes 13 seconds West, 142.47 feet to an old iron pin; (6) South 47 degrees 02 minutes 28 seconds West, 165.80 feet to an iron pin; and (7) South 77 degrees 30 minutes 20 seconds West, 120.28 feet to a point set in public road LR 15087, known as Birmingham Road, said Road leading in a Southeasterly direction to State Route 926 and in Northwesterly direction to State Route 52; thence continuing along the title line in said Road, the following three courses and distances to wit: (1) NOrth 38 degrees 37 minutes 04 seconds West, 120.00 feet to a point; (2) North 38 degrees 24 minutes 53 seconds West, 157.04 feet to a point; and (3) North 48 degrees 23 minutes 40 seconds West, 93.39 feet to a point marking a Northwesterly corner of this, thence leaving said point and along an old Mill Race, the following three courses and distances to wit: (1) North 42 degrees 06 minutes 30 seconds East, 114.01 feet to a point; (2) North 29 degrees 52 minutes 30 seconds East, 132.98 feet to a point; and (3) North 42 degrees 06 minutes 30 seconds East, 219.77 feet to a stone, being the first mentioned point and place of beginning.

CONTAINING: 6.920 Acres of land, be the same more or less.

BEING the same premises which A. Darlington Strode, II, Joseph W. Strode, Jr. and Phillip Price, Jr. by indenture bearing date the 2nd day of June, 1983 as set forth in and for the Office of the Recorder of Deeds, Chester County, Pa., in Deed Book M-61 page 299, granted and conveyed unto Central and Western Chester County Industrial Development Authority, in fee.

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF REVENUE
REALTY TRANSFER TAX MAY25'88 999.00

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF REVENUE
REALTY TRANSFER TAX MAY25'88 999.00

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF REVENUE
REALTY TRANSFER TAX MAY25'88 142.00

RECORDER OF DEEDS
CHESTER COUNTY, PA.
1988 MAY 25 P 3:41 026302

MUNICIPAL TRANSFER TAX
PAID IN AMOUNT OF $2,140.00
COLL

RECORDER OF DEEDS

And the said Grantor doth hereby covenant to and with the said Grantee that, it, the said Grantor, its successors, SHALL and WILL by these presents , Warrant and forever defend the hereinabove described premises, with the hereditaments and appurtenances, unto the said Grantee , and assigns, against the said Grantor and against every other person lawfully claiming or who shall hereafter claim the same or any part thereof, by, from or under it them or any of them.

IN WITNESS WHEREOF, the said Grantor ha S caused these present to be duly executed, the day and year first above written.

Central and Western Chester County
Industrial Development Authority

By: Herbert C. Pike

Attest: [illegible]

Secretary

President

State of Pennsylvania County of Chester

On this 20th day of May , A. D. 19 88, before me, the undersigned officer, personally appeared Herbert C. Pike , who acknowledged himself to be the Chairman President of the said Grantor corporation, and that he, as such Chairman ~~President~~, being authorized to do so, executed the foregoing instrument, for the purposes therein contained, by signing the name of the corporation by himself as Chairman ~~President~~.

IN WITNESS WHEREOF, I hereunto set my hand and official seal.

Kathleen Ann Fusco

Notary Public

Kathleen Ann Fusco, Notary Public
Coatesville, Chester County
My Commission Expires May 20, 1991

RETURN TO:

No. 2524

THE CENTRAL AND WESTERN CHESTER COUNTY INDUSTRIAL DEVELOPMENT AUTHORITY

TO

BLACK ROMAN, Inc.

The address of the Grantee is P O BOX 472 WEST CHESTER, PA. 19381

BOOK 1154 PAGE 041

RECORDED in Deed Book page
GIVEN under my hand and the seal of the said office, the date above written.

Recorder of Deeds

1350

ePhase

ePhase, Inc.
PO Box 44
West Chester, PA
19381-0044

610.692.7007
610.692.0721

www.ephase.com

APPENDIX D

FLOODPLAIN COMPLIANCE LETTER

EAST BRADFORD TOWNSHIP

CHESTER COUNTY, PENNSYLVANIA

September 29, 2023

Rich Phifer
Director of Property and Recreation
East Bradford Township
676 Copeland School Road
West Chester, PA 19380

Subject: **Floodplain Compliance Letter - Plum Run Trail and Outdoor Heritage Center Plans**

Dear Mr. Phifer:

I have reviewed the proposed plans for this project and can confirm that the project complies with the East Bradford Township Floodplain District Regulations contained in the Zoning Ordinance. The property is shown on FEMA Map panel 42029C0260G, dated September 29, 2017.

Please contact me with any questions.

Sincerely,

Andrea Campisi

Andrea Campisi
Director of Planning and Zoning/Zoning Officer

Cc: Christine Troxell, P.E., PTOE, CDR Maguire Engineering
Mark Lucas, P.E., Township Engineer

APPENDIX E

IPAC QUERY FOR THE PROJECT AREA (ACCESSED ON FEBRUARY 28, 2024)

IPaC **U.S. Fish & Wildlife Service**

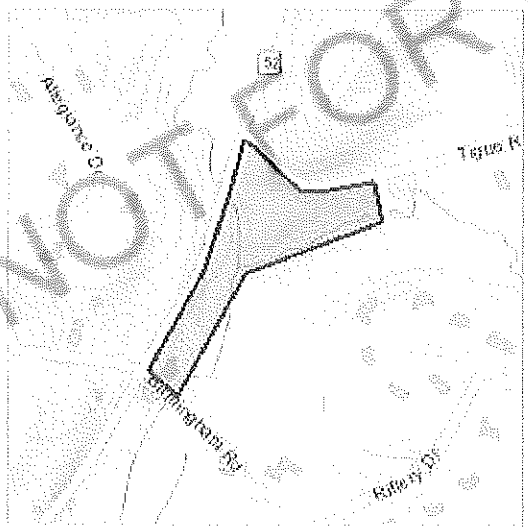
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Chester County, Pennsylvania



Local office

Pennsylvania Ecological Services Field Office

(814) 234-4090
(814) 234-0748

MAILING ADDRESS
110 Radnor Road Suite 101
State College, PA 16801-7987

PHYSICAL ADDRESS
110 Radnor Road
Suite 101}
State College, PA 16801-7987

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Indiana Bat Myotis sodalis Wherever found There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat Perimyotis subflavus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

Reptiles

NAME	STATUS
Bog Turtle Glyptemys muhlenbergii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6962	Threatened

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▤)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▤)

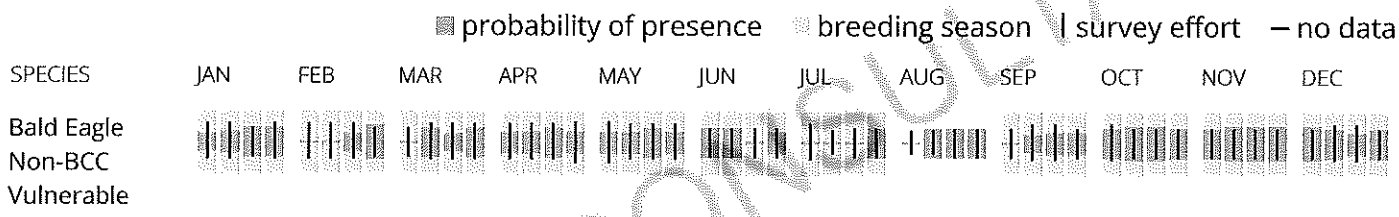
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs of bald and golden eagles in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your

list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Sep 1 to Jul 31
Black-billed Cuckoo Coccyzus erythropthalmus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Chimney Swift Chaetura pelagica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read

"Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

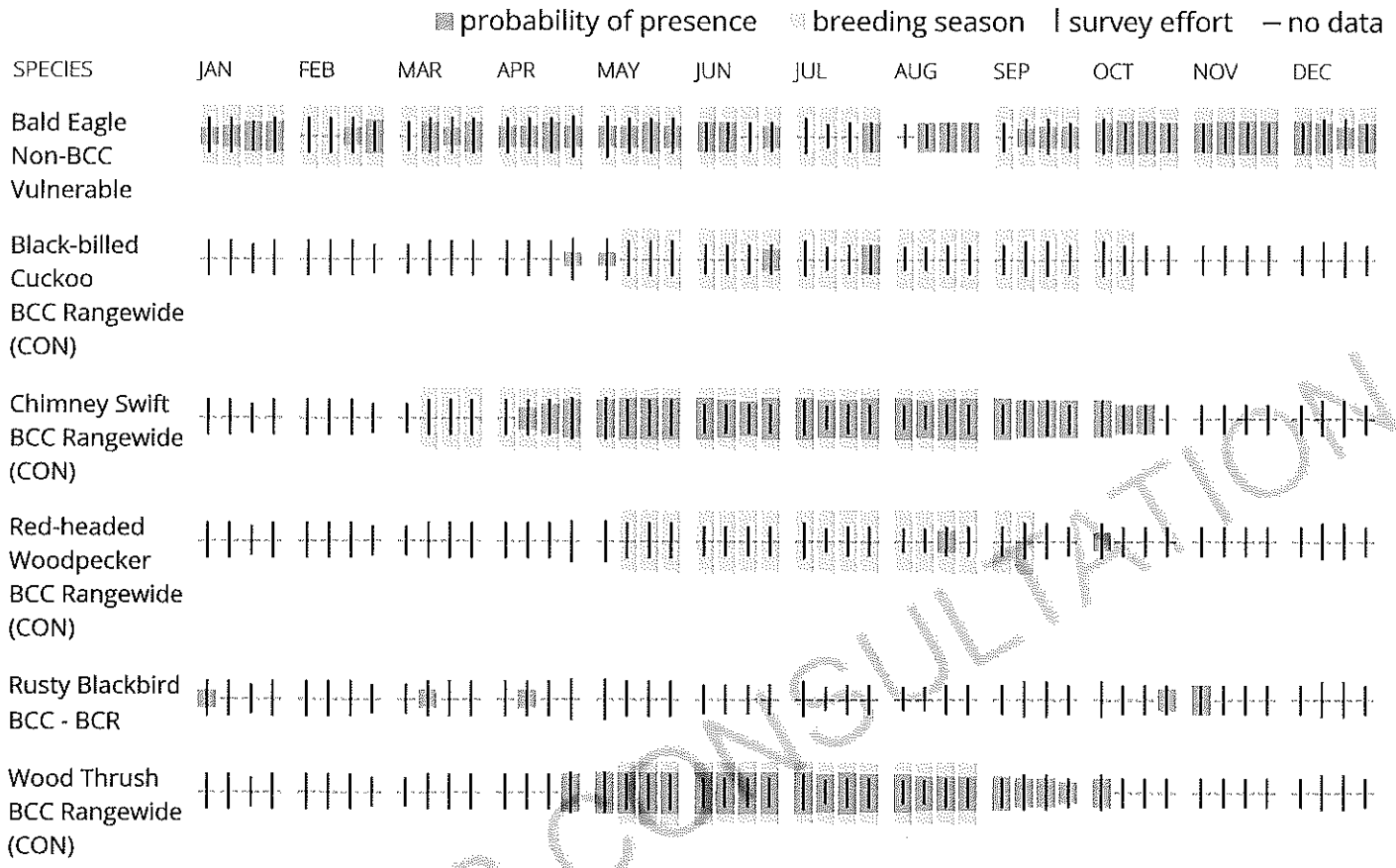
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid

cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to

you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM5A

RIVERINE

R3UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX F

PNDI SEARCHES AND CLEARANCES

PNDI # 782105 **USFWS Project #** 2023-0086493 (formerly 2020-1296)

U.S. FISH AND WILDLIFE SERVICE

110 Radnor Road, Suite 101, State College, PA 16801

This responds to your inquiry about a PNDI Internet Database search that resulted in a potential conflict with a federally listed, proposed or candidate species.

PROJECT LOCATION INFORMATION

County: Chester

Township: East Bradford

MISC INFORMATION

Date received by FWS: March 23, 2023

☐ ACTIVE ☐ ARCHIVE

USFWS COMMENTS ☑ EMAILED ☐ MAILED

To: Rich Phifer

Email: rphifer@eastbradford.org

Affiliation: East Bradford Township

SPECIFIC PROJECT Plum Run Trail

○ Other than occasional transient species, no federally listed species under our jurisdiction is known or likely to occur in the project area. This determination is valid for two years. Should project plans change, or if additional information on listed species become available, this determination may be reconsidered.

◉ It appears there have been no changes in the project or on-site biological information; therefore, the agency's comments, as detailed in our letter of 9/1/20 remain unchanged.

○ We have already provided comments on this project (See PNDI Receipt); therefore, no further correspondence will be sent by this agency. If there is a change in the project, please re-screen the project on-line, and contact this office if the PNDI receipt directs you to do so.

The above determination is valid for two years from the date of this letter. In addition, this response relates only to federally listed, proposed, and candidate species under our jurisdiction, based on an office review of the proposed project's location and anticipated impacts. No field inspection of the project area has been conducted by this office. *Please reference the above PNDI # and USFWS Project # in any future correspondence regarding this project.*

This review was conducted by the biologist listed below. He/she can be contacted at 814-206-(Extension).

☐ Melinda Turner (x7449)
☑ Richard Novak (x7477)
☐ Nicole Ranalli (x7455)
☐ Robert Anderson (x7447)
☐ Jennifer Kagel (x7451)
☐ Pamela Shellenberger (x7459)

SIGNATURE: ROBERT ANDERSON Digitally signed by ROBERT ANDERSON Date: 2023.06.15 16:08:47 -04'00'

Supervisor, Pennsylvania Field Office

pennsylvania
FISH AND BOAT COMMISSION

December 12, 2023

IN REPLY REFER TO
SIR# 53193

Clauser Environmental, LLC
Aaron Clauser
19 School House Lane
Cape May, New Jersey 08210

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 712750_2
Plum Run Trail
East Bradford Township, Westtown Township: CHESTER County

Dear Aaron Clauser:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish and Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish and Boat Code (Chapter 75), or the Wildlife Code.

According to this submission and our records there have been no changes in the project or on-site biological information; therefore, the Commission's comments regarding potential impacts to rare, candidate, threatened, or endangered species under our jurisdiction, as detailed in our letter of September 21, 2020 for SIR# 53193, remain unchanged.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Josh Brown at 814-359-5129 or joshubrown@pa.gov and refer to the SIR # 53193. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/JRB/dn

1. PROJECT INFORMATION

Project Name: **Plum Run Trail**
Date of Review: **11/13/2023 08:04:38 PM**
Project Category: **Recreation, Trails & Trailheads (parking, etc.)**
Project Area: **46.87 acres**
County(s): **Chester**
Township/Municipality(s): **EAST BRADFORD TOWNSHIP; WESTTOWN TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **WEST CHESTER**
Watersheds HUC 8: **Brandywine-Christina**
Watersheds HUC 12: **Upper Brandywine Creek**
Decimal Degrees: **39.930984, -75.611281**
Degrees Minutes Seconds: **39° 55' 51.5425" N, 75° 36' 40.6101" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

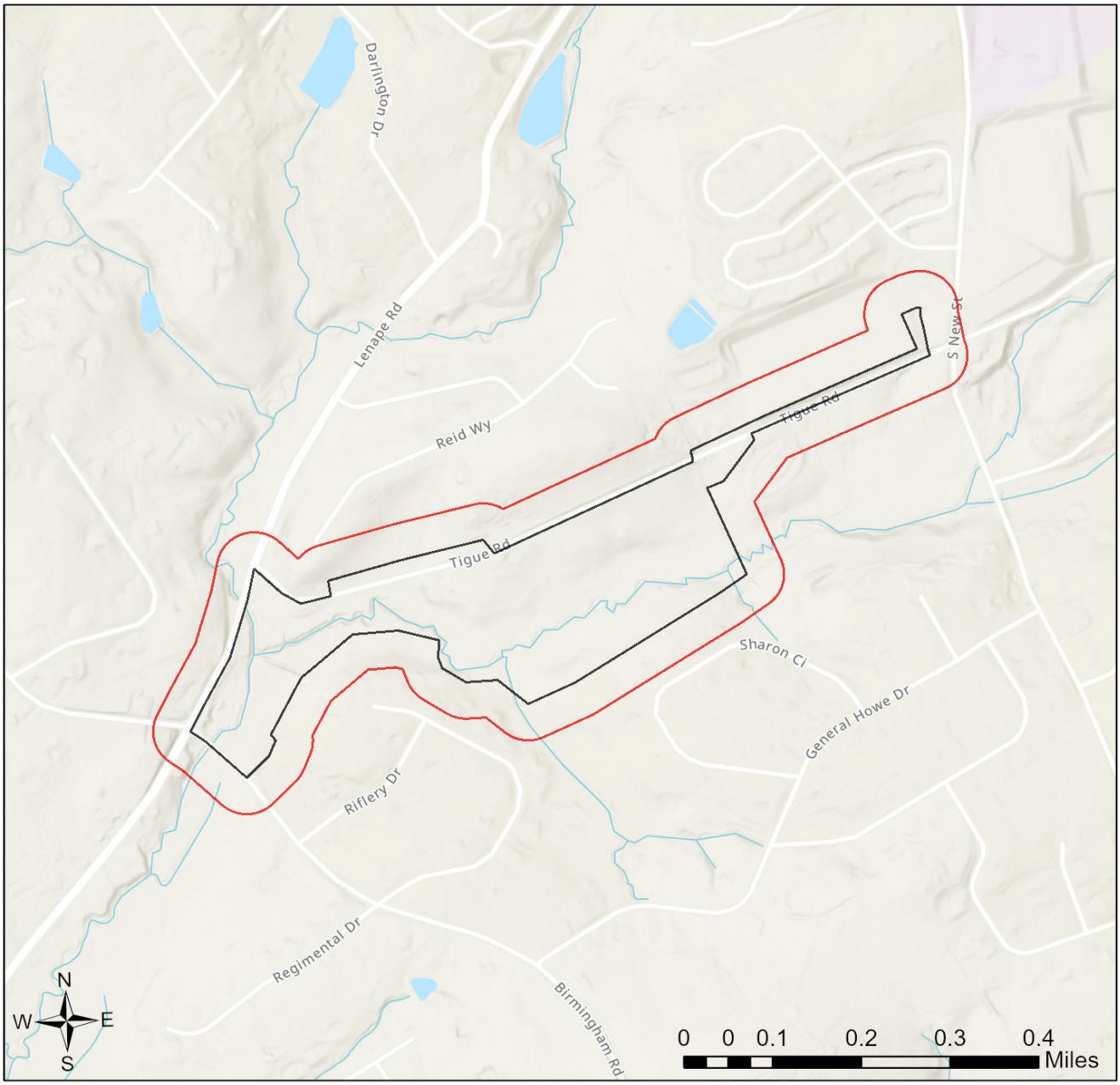
Plum Run Trail

Buffered Project Boundary

Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Plum Run Trail



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE:

Avoidance Measure: Do not conduct this project/activity within 300 feet of any wetlands or vernal pools.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

Avoidance Measure: Do not conduct this project/activity within 50 feet of any streams, rivers, creeks, or tributaries. This includes both perennial and intermittent waterways.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure and if applicable, any Information Requests, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email the following information to the agency(s) (see AGENCY CONTACT INFORMATION). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies (but not USFWS).
*If information was requested by USFWS, applicants must email, or mail, project information to IR1_ESPenn@fws.gov to initiate a review. USFWS will not accept uploaded project materials.

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Aaron Clauser, PhD
Company/Business Name: Clauser Environmental, LLC
Address: 1915 Leiby Lane
City, State, Zip: Hutztown, PA 19530
Phone:(570) 294-0669 Fax:( ) —
Email: aclauser@verizon.net

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Aaron S. Clauser — 11/14/23

applicant/project proponent signature — date

PNDI # 712750 **USFWS Project #** 2020-1296

U.S. FISH AND WILDLIFE SERVICE

110 Radnor Road, Suite 101, State College, PA 16801

This responds to your inquiry about a PNDI Internet Database search that resulted in a potential conflict with a federally listed, proposed or candidate species.

PROJECT LOCATION INFORMATION

County: Chester

Township: East Bradford, Westtown

MISC INFORMATION

Date received by FWS: July 7, 2020

☐ ACTIVE ☐ ARCHIVE

USFWS COMMENTS ☐ EMAILED ☐ MAILED

To: Aaron Clauser

Email: aclauser@verizon.net

Affiliation: Clauser Environmental, LLC

SPECIFIC PROJECT: Plum Run Trail

FISH AND WILDLIFE SERVICE COMMENT(s):

X ***NOT LIKELY TO ADVERSELY AFFECT***

The federally listed bog turtle occurs or may occur in or near the project area. However, based on our review of the information provided, including the project description and location (On site wetlands determined not to have potential bog turtle habitat during site visit by Nicole Ranalli on August 18, 2018.), no adverse effects to this species are likely to occur. If there is any change in the location, scale, scope, layout or design of the project, further consultation or coordination with the Service will be necessary.

The above determination is valid for two years from the date of this letter. In addition, this response relates only to federally listed, proposed, and candidate species under our jurisdiction, based on an office review of the proposed project's location and anticipated impacts. No field inspection of the project area has been conducted by this office. Consequently, comments on this form are not to be construed as addressing other Service concerns under the Fish and Wildlife Coordination Act or other authorities. *Please reference the above PNDI # and USFWS Project # in any future correspondence regarding this project.*

This review was conducted by the biologist listed below. He/she can be contacted at 814-206-(Extension).

☐ Melinda Turner (x7449)	☐ Nicole Ranalli (x7455)	☐ Jennifer Kagel (x7451)
☑ Richard Novak (x7477)	☐ Alison Whitlock (x7461)	☐ Pamela Shellenberger (x7459)

SIGNATURE: ROBERT ANDERSON Digitally signed by ROBERT ANDERSON Date: 2020.09.01 15:12:16 -04'00'

Supervisor, Pennsylvania Field Office

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Diversity Section
595 E Rolling Ridge Dr.
Bellefonte, PA 16823
814-359-5237

September 21, 2020

IN REPLY REFER TO
SIR# 53193

Clauser Environmental, LLC
Aaron Clauser
19 School House Lane
Cape May, New Jersey 08210

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 712750_1
Plum Run Trail
CHESTER County: East Bradford Township, Westtown Township

Dear Mr. Clauser:

Due to the **Broad-headed Skink (*Plestiodon laticeps*, Candidate)** being known from the watershed, to further determine if the proposed project could have an adverse impact on the species of concern, the Commission had requested a habitat evaluation of the project area.

PFBC Natural Diversity Section staff examined the site with the permittee on September 11, 2020 and determined that the project area could potentially be occupied by the species of concern. During the site visit we discussed recommendations to minimize impacts to the species of concern. The following recommendations apply to the wooded areas of the proposed trail.

Broad-headed skinks are described as arboreal and semi-fossorial in habitat use. Key habitat features include large trees and snags with exfoliating bark or crevices; logs/log piles, rock piles, shed bark; stumps; root wads; ground burrows. Broad-headed skinks hibernate under stumps/roots below the frostline. In order to avoid disturbance to hibernating individuals, I recommend that the project excavation and tree-clearing be conducted between **April 15 and October 15 (April 15 to June 30, preferred)**, during the active period of broad-headed skinks. Trail construction should avoid removal of large trees (>10" dbh), to minimize disturbance to nests. Where allowable, stumps/roots should be left intact.

I also recommend that potential habitat features (logs, debris, rocks, bark, etc.) be removed from the trail site prior to excavation activities. This should take place during the non-breeding season (**October 15 to June 15**) to avoid impacts to eggs/guarding females. In order to further minimize impacts to broad-headed skink, habitat features should be established in wooded areas, outside of the proposed trail ROW. These include log piles, rock piles, snags, coarse woody debris, etc.

If any species of concern are found during project activities, the animal should be moved no farther than necessary out of the immediate project area (no farther than 0.25 miles away within appropriate habitat in the same watershed). Threatened and endangered species observed in the survey should be photographed and areas they were observed/captured should be mapped accordingly. The surveyor should also report other herpetofauna seen while conducting the surveys. Given your experience and onsite consultation with PFBC, we feel that you will be able to coordinate and implement these recommendations to minimize impacts to broad-headed skink.

If these recommendations can be implemented, best management practices are employed and strict erosion and sedimentation controls are used, then I do not foresee the proposed project resulting in adverse impacts to the Broad-headed Skink (*Plestiodon laticeps*).

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Josh Brown at 814-359-5129 and refer to the SIR # 53193. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/JRB/dn

Pennsylvania Fish & Boat Commission
established 1866

Division of Environmental Services
Natural Diversity Section
595 E Rolling Ridge Dr.
Bellefonte, PA 16823
814-359-5237

July 20, 2020

IN REPLY REFER TO
SIR# 53193

Clauser Environmental, LLC
Aaron Clauser
19 School House Lane
Cape May, New Jersey 08210

RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
PNDI Search No. 712750_1
Plum Run Trail
CHESTER County: East Bradford Township, Westtown Township

Dear Aaron Clauser:

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code.

Broad-headed Skink (*Plestiodon laticeps*, Candidate)

Based on our review, the project area could potentially be occupied by the species of concern during construction. In order to avoid disturbance to any of the species of concern that may be occupying this area, we recommend that a herpetologist that is qualified/recognized to survey for the species listed above be on-site to clear the area of species of concern and other herpetofauna.

All wooded areas to be permanently or temporarily impacted, including staging areas, should be investigated/cleared before any work activities are to commence. After the clearance surveys, silt fencing should be placed around all work/staging areas so that any transient herpetofauna do not re-enter the project area.

The qualified/recognized herpetologist is to be on-site during all project activity in wooded areas. If any species of concern are found during the clearance survey, the herpetologist is to move the animal no farther than necessary out of the immediate project area (no farther than 0.25 miles away within

appropriate habitat in the same watershed). Upon completion of the survey work, the herpetologist is to forward a report showing the surveyor's results to this office for our review and comment. Reports should include photographs and maps of appropriate suitable habitat. Threatened and endangered species observed in the survey should be photographed, aged, sexed, measured as to their size, and areas they were observed/captured should be mapped accordingly. The surveyor should also report other herpetofauna seen while conducting the surveys.

If these recommendations can be implemented, best management practices are employed and strict erosion and sedimentation controls are used, then I do not foresee the proposed project resulting in adverse impacts to the Broad-headed Skink (*Plestiodon laticeps*).

The Broadhead Skink habitat needs to be assessed along the length of the corridor where earth disturbance will occur. Note that currently, we do not have a list of qualified surveyors for the Broadhead Skink. However, Mr. Brandon Ruhe of Ecological Associates, LLC has demonstrated his proficiency in finding Broadhed Skinks in Pennsylvania and in other nearby states, as well as identifying their critical habitats. We have reviewed his credentials, approved him, as well as permit him (Type 3 Scientific Collectors' Permit) to search for and collect Broadhead Skinks. His contact information follows.

Brandon Ruhe
Ecological Associates, LLC
P.O. Box 181 Oley, PA 19547
610-987-6585
eabruhe@gmail.com

If other potential qualified surveyors are known for this species (they must have documented experience with locating Broadhead Skink as well as demonstrate their expertise with identifying critical habitat for the species), please submit their credentials to for us to review and approve.

This response represents the most up-to-date summary of the PNDI data and our files and is valid for two (2) years from the date of this letter. An absence of recorded species information does not necessarily imply species absence. Our data files and the PNDI system are continuously being updated with species occurrence information. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered, and consultation shall be re-initiated.

If you have any questions regarding this review, please contact Josh Brown at 814-359-5129 and refer to the SIR # 53193. Thank you for your cooperation and attention to this important matter of species conservation and habitat protection.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/JRB/dn

CLAUSER
environmental llc

July 2, 2020

Plum Run Trail
Project Description

East Bradford Township has secured grant funding from the Delaware Valley Regional Planning Commission and from the Commonwealth of Pennsylvania, acting by and through the Commonwealth Financing Authority, to prepare design and engineering plans for the construction of the Plum Run Trail and Strode's Barn Outdoor Heritage Center. The Township is proposing the development of a 1-mile segment of the Plum Run Trail located between Birmingham Road and S. New Street within East Bradford Township, Chester County, PA. The project includes the design and engineering of a multi-use gravel trail and a +/- 3,500 sq. ft. outdoor heritage center and associated public amenities (i.e. one parking area, pedestrian bridge(s), and interpretive panels/signage).

The Plum Run Trail Site is located in East Bradford Township, Chester County, Pennsylvania and appears on the West Chester, Pennsylvania U.S. Geological Survey (USGS) 7.5-minute quadrangle (Latitude 39.93059° N and Longitude 75.61373° W). The site includes a mix of private, commercial, and municipal properties. Surrounding parcels include a mix of residential, open space, and commercial uses.

The proposed trail will be located primarily along the northern site boundary of the area shown in the PNDI search. The trail will extend through a mix of mowed lawn, forested, and meadow areas and will include construction of a stream crossing over the north branch of Plum Run. The trail project will be located on and adjacent to the parcels where the Plum Run 18-66 project is located. The Plum Run 18-66 project (PNDI Search No. 619533 is a project of the Brandywine Red Clay Alliance that includes the reconnection of floodplains, stabilization of streambanks, improvement of fish habitat, invasive species removal, and creation of new forested riparian buffers. The Plum Run 18-66 species of special concern coordination, design, permitting, and construction oversight was completed by Clauser Environmental, LLC. The PA Fish & Boat Commission provided a July 3, 2019 letter stating that no adverse impacts from the Plum Run 18-66 project that directly impacted streams and wetlands on the site were anticipated.

On August 18, 2018, a site visit from Nicole Ranalli of USFWS determined that bog turtle habitat was not located within 300 feet of the Plum Run 18-66 project area. In May of 2020, Dr. Clauser completed the wetland delineation for the Plum Run Trail Project by extending the area of the Plum Run 18-66 wetland delineation to include the mowed lawn area and stormwater basin within the eastern portion of the area of investigation presented here. The wetland delineation determined that only the

wetlands and streams previously reviewed by USFWS for bog turtle habitat are within the total project area for the Plum Run Trail Project.

The wetlands within the Plum Run Trail project area are the same wetlands determined to not contain bog turtle habitat as part of the Plum Run 18-66 project. The Plum Run Trail project will have substantially less impact to the streams and wetlands on the site. With those factors considered, we respectfully request updated review letters for the Plum Run Trail project indicating no known impacts to species of special concern.

1. PROJECT INFORMATION

Project Name: **Plum Run Trail**
Date of Review: **7/2/2020 01:49:27 PM**
Project Category: **Recreation, Trails & Trailheads (parking, etc.)**
Project Area: **46.87 acres**
County(s): **Chester**
Township/Municipality(s): **EAST BRADFORD; WESTTOWN**
ZIP Code: **19382; 19383**
Quadrangle Name(s): **WEST CHESTER**
Watersheds HUC 8: **Brandywine-Christina**
Watersheds HUC 12: **Upper Brandywine Creek**
Decimal Degrees: **39.930984, -75.611281**
Degrees Minutes Seconds: **39° 55' 51.5425" N, 75° 36' 40.6101" W**

2. SEARCH RESULTS

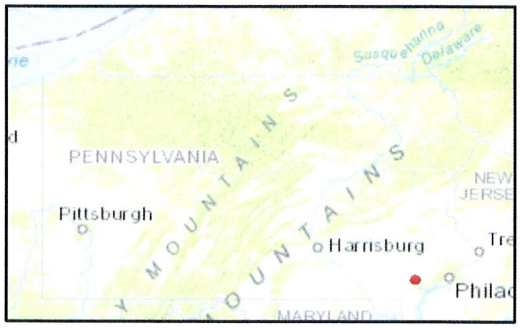
Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	**Avoidance Measure**	**See Agency Response**

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Plum Run Trail

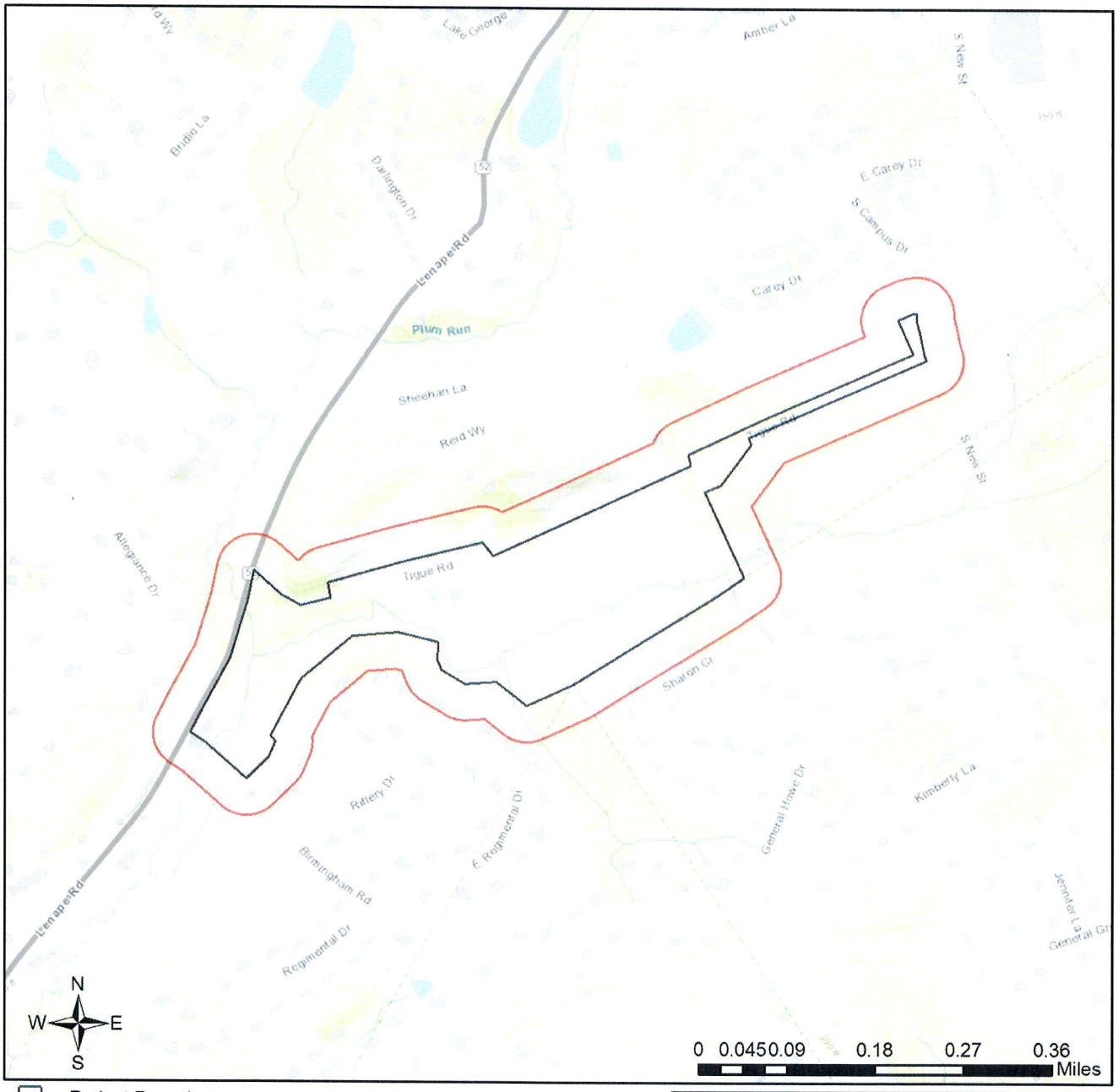
Project Boundary

Buffered Project Boundary



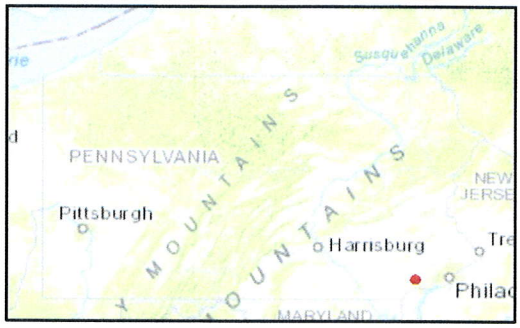
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Plum Run Trail



Project Boundary

Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Special Concern Species*

U.S. Fish and Wildlife Service
RESPONSE:

Avoidance Measure: Do not conduct this project/activity within 300 feet of any wetlands or vernal pools.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

Avoidance Measure: Do not conduct this project/activity within 50 feet of any streams, rivers, creeks, or tributaries. This includes both perennial and intermittent waterways.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
_____(Signature)

SPECIAL NOTE: **If you agree to implement the above Avoidance Measure and if applicable, any Information Requests, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required.** If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
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WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found here. This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:
____Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
____A map with the project boundary and/or a basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
In addition to the materials listed above, USFWS REQUIRES the following
____**SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.
____Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
____Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Rich Phifer
Company/Business Name: East Bradford Township
Address: 666 Copeland School Rd.
City, State, Zip: West Chester, PA 19380-1822
Phone: (610) 436-5108 Fax: (610) 436-8652
Email: rphifer@eastbradford.org

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

July 6, 2020
date

APPENDIX G

STATE HISTORIC PRESERVATION OFFICE CORRESPONDENCE

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: MS / ED
DATE RECEIVED: 11/25/20	DATE DUE: 12/24/20
ER NUMBER: 2021-0538-029-A	HRSF:

REV: 07/2020

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (•) YES ( ) NO **OR** ( ) **This is additional information for ER Number:**

Project Name: Plum Run Trail | County: Chester | Municipality: East BradfordTownship

Project Address: 639 Birmingham Rd/972 Tigue Rd | City/State/ Zip: west Chester | PA | 19382

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Christine M Troxell | Phone: (610) 841-2700

Company: McTish, Kunkel & Associates | Fax: (610) 841-2709

Street/PO Box: 3500 Winchester Road, Suite 300 | Email: ctroxell@mctish.com

City/State/Zip: Allentown, PA 18104 | Email cc:

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) ☐ Federal property ☐ State property ☑ Municipal property ☐ Private property

List all federal and state agencies and programs providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
State	DCED Commonwealth Financing Authority, G	

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): ☑ Construction ☐ Demolition ☐ Rehabilitation ☐ Disposition

Total acres of project area: 4.05 | Total acres of earth disturbance: 4.05

Are there any buildings or structures within the project area? (•) Yes ( ) No | Approximate age of buildings: 300

Does this project involve properties listed in or eligible for the National Register of Historic Places, or locally designated? Inventory here: https://gis.penndot.gov/crgis	Yes	No	Unsure
	(•)	( )	( )

Name: Strodes Mill

Key Number: 001587

Please email this form and pdf attachments to: RA-PH-PASHPO-ER@pa.gov

Please be sure to save the Project Review Form so that it remains a digital document and retains its function as a fillable pdf. Do not print the form and scan as a pdf.

Attachments – Please include the following information with this form

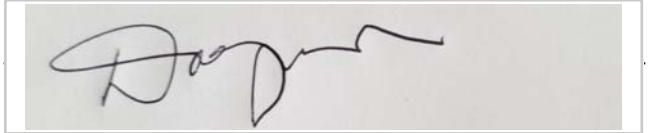
- ☑ **Map –** 7.5' USGS quad, streetmap, or parcel map showing the project's Area of Potential Effect
- ☑ **Description/Scope of Work–** Narrative description of the project, including any ground disturbance and previous land use, and any potential to impact historic resources
- ☑ **Site Plans/Drawings –** Indicate location and age of buildings, any proposed improvements, and past and present land use
- ☑ **Photographs –** Digital photographs of all buildings and structures keyed to a site plan. If demolition or exterior changes are proposed to buildings more than 50 years old, please also include Abbreviated HRSF

SHPO RESPONSE (SHPO USE ONLY)

☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

☑ The project will have **NO EFFECT** on historic properties

☐ The project will have **NO ADVERSE EFFECTS** on historic properties:_____ Key# _____

DIVISION CHIEF, ENVIRONMENTAL REVIEW: 

DATE: 12/23/20

SHPO REVIEWER: ed

APPENDIX H

NPDES GENERAL PERMIT

March 11, 2024

VIA ELECTRONIC TRANSMITTAL

East Bradford Township
Attn: Rich Phifer
676 Copeland School Road
West Chester, PA 19380

Re: Chapter 102 PAG-02 NPDES General Permit Coverage Approval – Major Amendment
NPDES Permit No.: PAC150303 A-1
Project Name: Plum Run Trail & Outdoor Heritage Center
Municipality: East Bradford Twp., Chester County

Dear Mr. Phifer:

Under the authority of the federal Clean Water Act and Pennsylvania's Clean Streams Law, the Chester County Conservation District has approved your request for major amendment coverage under the PAG-02 NPDES General Permit for Stormwater Discharges Associated with Construction Activities ("PAG-02 General Permit"). The latest versions of the Notice of Intent (NOI) and all supporting documents, including the Erosion and Sediment Control (E&S) Plan and Post-Construction Stormwater Management (PCSM) Plan, are incorporated into this approval.

Your coverage under the PAG-02 General Permit which has been assigned NPDES Permit No. PAC150303 A-1, is effective on 03/11/2024 and will expire on **12/07/2024**. This is the date the statewide (master) PAG-02 General Permit expires. DEP expects to reissue the master PAG-02 General Permit in 2024 with an effective date of December 8, 2024. **If you have not submitted a Notice of Termination (NOT) and have not received approval of the NOT by December 7, 2024, you must submit a renewal NOI by December 7, 2024 to remain covered under the reissued master PAG-02 General Permit.** The renewal NOI form is not yet available for your use. The Chester County Conservation District will notify you when the renewal NOI is available.

Please review the PAG-02 General Permit and the enclosed attachments carefully and contact this office if you have any questions. Please pay particular attention to the following requirements of the General Permit:

- In accordance with 25 Pa. Code §102.5(h), operators who are not the permittee shall be co-permittees. An operator is a person who either has oversight responsibility of an earth disturbance activity on a project site who has the ability to make modifications to the E&S Plan, PCSM Plan or site specifications, or has day to day operational control over an earth disturbance activity on a project site. Please be advised that once an operator (contractor) has been selected for the project, the operator must be made a co-permittee and enter into an agreement with the permittee. Please use the enclosed Co-Permittee Acknowledgement Form for Chapter 102 Permits (3800-FM-BCW0271a) to add a co-permittee.

- A pre-construction meeting is required as specified in 25 Pa. Code §102.5(e), unless otherwise notified in writing by this office. The purpose of this meeting is to review all aspects of the permit with the permittee, co-permittees, operators, consultants, inspectors and licensed professionals or their designees who will be responsible for the implementation of the critical stages of the approved PCSM Plan. You must provide at least seven days' notice of the pre-construction meeting to all invited attendees.

- You must conduct inspections of all best management practices (BMPs) on a weekly basis and after each measurable stormwater event (i.e., precipitation in an amount of 0.25 inch or greater over a 24-hour period) to ensure effective and efficient operation. The Visual Site Inspection Report Form (3800-FM-BCW071d) is enclosed along with instructions. This form (or an equivalent electronic form providing the same information) must be used to document these required site inspections.

- For any property containing a PCSM BMP, the permittee or co-permittee must record an instrument with the recorder of deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property. The recorded instrument must identify the PCSM BMP, provide for necessary access related to long-term operation and maintenance (O&M) for PCSM BMPs, and provide notice that the responsibility for long-term O&M of the PCSM BMP is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees. **You must record an instrument with the Recorder of Deeds within 45 days and provide proof of the recording at the time an application to transfer permit coverage is submitted, if applicable, and at the time a Notice of Termination (NOT) is submitted to this office.**

- If there are any changes to the PCSM BMPs or long-term operation and maintenance plan after the initial instrument recording and prior to permit termination, the permittee(s) will need to amend the initial recorded instrument at the recorder of deeds office prior to permit termination. Please note, most Recorder of Deeds offices require that the land owner (at the time of actual recording) signs the instrument to be recorded. If the land owner changes and an amended instrument needs to be recorded, the Recorder of Deeds office will likely require the new land owner's signature on the amended instrument. It is recommended that for any sale or transfer of property to a new owner before this permit is terminated that the permittee seek legal counsel on how to structure the sale or transfer to allow the recorded instrument to be amended.

- The Notice of Termination (NOT) Form (3800-PM-BCW0229b) is also enclosed and must be completed and filed when construction activities have ceased and final stabilization has been achieved. The NOT must identify the responsible person(s) for the long-term O&M of the PCSM BMPs. Please be advised that the permittee and any co-permittees remain responsible for all operational maintenance for this project site until the NOT has been filed and acknowledged. **It is important that you fulfill your obligations under the General Permit and submit a complete NOT to this office upon final stabilization of the site.**

Persons aggrieved by an action of a conservation district under 25 Pa. Code Chapter 102 may request an informal hearing with DEP within 30 days of publication of this notice in the *Pennsylvania Bulletin*, pursuant to 25 Pa. Code §102.32(c). DEP will schedule this informal hearing within 30 days of the request. After this informal hearing, any final determination by DEP may be appealed to the Environmental Hearing Board as provided below.

Any person aggrieved by this action may appeal the action to the Environmental Hearing Board (Board), pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. §7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A. The Board's address is:

Environmental Hearing Board
Rachel Carson State Office Building, Second Floor
400 Market Street, P.O. Box 8457
Harrisburg, PA 17105-8457

TDD users may contact the Environmental Hearing Board through the PA Relay Service, 800-654-5984.

Appeals must be filed with the Board within 30 days of receipt of notice of this action unless the appropriate statute provides a different time. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

A Notice of Appeal form and the Board's rules of practice and procedure may be obtained online at http://ehb.courtapps.com or by contacting the Secretary to the Board at 717-787-3483. The Notice of Appeal form and the Board's rules are also available in braille and on audiotape from the Secretary to the Board.

IMPORTANT LEGAL RIGHTS ARE AT STAKE. YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD AT 717-787-3483 FOR MORE INFORMATION. YOU DO NOT NEED A LAWYER TO FILE A NOTICE OF APPEAL WITH THE BOARD.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST BE FILED WITH AND RECEIVED BY THE BOARD WITHIN 30 DAYS OF RECEIPT OF NOTICE OF THIS ACTION.

If you have any questions about your application, please contact the Chester County Conservation District at 610-455-1360.

Sincerely,

Christian E. Strohmaier

Christian E. Strohmaier
Chester County Conservation District
Managing Director

cc: CDR Maguire Engineering
DEP Permits Section Chief
East Bradford Township

Attachments: PAG02 General NPDES Permit
Visual Site Inspection Report Form and Instructions (link)
Co-Permittee Acknowledgement Form for Chapter 102 Permits and Instructions (link)
Notice of Termination Form (link)

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF CLEAN WATER

AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

NPDES PERMIT NO: PAC150303 A-1

In compliance with the provisions of the Clean Water Act, 33 U.S.C.A. §§ 1251 – 1387 and Pennsylvania's Clean Streams Law, as amended, 35 P.S. §§ 691.1 – 691.1001, the Department of Environmental Protection (DEP) authorizes the permittee named below to discharge stormwater associated with construction activities from an earth disturbance activity that involves earth disturbance greater than or equal to one acre, or an earth disturbance on any portion, part, or during any stage of a larger common plan of development or sale that involves earth disturbance greater than or equal to one acre:

Permittee	Project Site
East Bradford Township	Plum Run Trail & Outdoor Heritage Center
676 Copeland School Road	998 Lenape Road
West Chester, PA 19380	West Chester, PA 19382

This authorization is subject to DEP's enclosed PAG-02 General Permit (General Permit) which incorporates all effluent limitations, monitoring and reporting requirements, and other terms, conditions, criteria, and special requirements for the discharge of stormwater associated with construction activities to surface waters, including through storm sewers. Authorization to discharge is subject to the implementation of the plans and additional associated information submitted as part of the Notice of Intent (NOI) for general permit coverage.

APPROVAL TO DISCHARGE IN ACCORDANCE WITH THE TERMS AND CONDITIONS HEREIN IS AUTHORIZED BEGINNING ON 03/11/2024 , AND WILL EXPIRE ON 12/07/2024 WHEN CONDUCTED PURSUANT TO THE TERMS AND CONDITIONS OF THIS GENERAL PERMIT. GENERAL PERMIT COVERAGE MAY BE TERMINATED PRIOR TO THE EXPIRATION DATE UPON RECEIPT AND ACKNOWLEDGEMENT OF A NOTICE OF TERMINATION FORM AND APPROVAL BY DEP OR THE AUTHORIZED CONSERVATION DISRICT. NO CONDITION OF THIS GENERAL PERMIT SHALL RELEASE THE PERMITTEE OR CO-PERMITTEE(S) FROM ANY RESPONSIBILITY OR REQUIREMENT UNDER STATE OR FEDERAL ENVIRONMENTAL STATUTES, REGULATIONS, OR LOCAL ORDINANCES.

Coverage under the PAG-02 General Permit is authorized by:

Christian E. Strohmaier

Christian E. Strohmaier
Managing Director
Chester County Conservation District
688 Unionville Road, Suite 200
Kennett Square, PA 19348
610.925.4920

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PAG-02
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FOR DISCHARGES OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

This General Permit applies to earth disturbance activities that disturb greater than or equal to one (1) acre, or an earth disturbance on any portion, part, or during any stage of, a larger common plan of development or sale that involves greater than or equal to one acre of earth disturbance.

This General Permit does not apply to earth disturbance activities involving agricultural plowing and tilling, animal heavy use areas, timber harvesting activities, or road maintenance activities.

Earth disturbance activities associated with oil and gas exploration, production, processing or treatment operations, or transmission facilities may be required to obtain permit coverage under the Erosion and Sediment Control General Permit (ESCGP).

I. DEFINITIONS

Note: Terms used in this General Permit not otherwise defined herein shall have the meaning attributed to them in 40 CFR Part 122 and 25 Pa. Code Chapters 92a, 93, 96, 102 or 105.

Administrator means the Environmental Protection Agency (EPA) regional administrator.

Antidegradation Best Available Combination of Technologies (ABACT) means environmentally sound and cost effective treatment, land disposal, pollution prevention and stormwater re-use BMPs that individually or collectively manage the difference in the net change in stormwater volume, rate, and quality for storm events up to and including the 2 year/24 hour storm when compared to the stormwater rate, volume, and quality prior to the earth disturbance activities to maintain and protect the existing quality of the receiving surface waters of this Commonwealth. (25 Pa. Code § 102.1)

Accelerated Erosion means the removal of the surface of the land through the combined action of human activities and the natural processes, at a rate greater than would occur because of the natural process alone. (25 Pa. Code § 102.1)

Approximate original condition means the pre-construction condition, general surface configuration, and drainage pattern of the land prior to earth disturbance. Restoration from forest to meadow is considered approximate original condition under this General Permit.

Best Management Practices (BMPs) means activities, facilities, measures, planning, or procedures used to minimize accelerated erosion and sedimentation and manage stormwater to protect, maintain, reclaim, and restore the quality of waters and the existing and designated uses of waters of this Commonwealth before, during, and after earth disturbance activities. (25 Pa. Code § 102.1)

Clean fill means uncontaminated, non-water soluble, non-decomposable inert solid material. The term does not include materials placed in or on waters of the Commonwealth unless otherwise authorized. (25 Pa. Code § 271.1)

Clean Streams Law means the Act of June 22, 1937, P.L. 1987, No. 394, as amended. (35 P.S. §§ 691.1—691.1001)

Clean Water Act means the Federal Water Pollution Control Act, as amended. (33 U.S.C.A. §§ 1251—1387)

Combined Sewer Overflow (CSO) means an intermittent overflow or other untreated discharge from a municipal combined sewer system (including domestic, industrial, and commercial wastewater and stormwater) prior to reaching the headworks of the sewage treatment facility which results from a flow in excess of the dry-weather carrying capacity of the system. (25 Pa. Code § 92a.2)

Co-Permittee means person(s) identified in this General Permit as responsible for the discharges of stormwater associated with construction activity who is jointly and individually responsible together with the permittee for compliance with all terms and conditions of this General Permit and applicable laws.

County Conservation District (CCD) means a conservation district, as defined in section 3(c) of the Conservation District Law (3 P.S. § 851(c)), which has the authority under a delegation agreement executed with DEP to administer and enforce all or a portion of the erosion, sediment, and stormwater management program in this Commonwealth. (25 Pa. Code § 102.1)

Critical Stages means the installation of underground treatment BMPs, structurally engineered BMPs, or other BMPs as deemed appropriate by DEP or a CCD.

DEP means the Department of Environmental Protection of this Commonwealth.

Designated uses means those uses specified in 25 Pa. Code §§ 93.4(a) and 93.9a—93.9z for each water body or segment, whether or not they are being attained, to be achieved as part of Pennsylvania's water quality standards. (25 Pa. Code § 93.1)

Disturbed area means unstabilized land area where an earth disturbance activity is occurring or has occurred. (25 Pa. Code § 102.1)

Earth Disturbance Activity means a construction or other human activity which disturbs the surface of the land, including land clearing and grubbing, grading, excavations, embankments, land development, agricultural plowing or tilling, operation of animal heavy use areas, timber harvesting activities, road maintenance activities, oil and gas activities, well drilling, mineral extraction, and the moving, depositing, stockpiling, or storing of soil, rock, or earth materials. (25 Pa. Code § 102.1)

Effluent Limitation or Standard means a restriction established by DEP or the Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into surface waters including BMPs and schedules of compliance.

EPA means the United States Environmental Protection Agency.

Erosion means the natural process by which the surface of the land is worn away by water, wind, or chemical action. (25 Pa. Code § 102.1)

Erosion and Sediment Control Plan (E&S Plan) – A site-specific plan consisting of both drawings and a narrative that identifies BMPs to minimize accelerated erosion and sedimentation before, during, and after earth disturbance activities. (25 Pa. Code § 102.1)

Exceptional Value Waters means surface waters of high quality which satisfy 25 Pa. Code § 93.4b(b) (relating to antidegradation). (25 Pa. Code § 93.1)

Existing uses means those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in Pennsylvania's water quality standards. (25 Pa. Code § 93.1)

Impaired Waters means surface waters that fail to attain one or more of its designated uses under 25 Pa. Code Chapter 93.

Integrated Water Quality Monitoring and Assessment Report (Integrated Report) means DEP's report on the conditions of Pennsylvania's surface waters to satisfy sections 305(b) and 303(d) of the Clean Water Act when approved by EPA.

High Quality Waters means surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water by satisfying 25 Pa. Code § 93.4b(a). (25 Pa. Code § 93.1)

Licensed Professional means professional engineers, landscape architects, geologists, and land surveyors licensed to practice in the Commonwealth. (25 Pa. Code § 102.1)

Long-Term Operation and Maintenance (O&M) means the routine inspection, maintenance, repair, or replacement of a BMP to ensure proper function for the duration of time that the BMP is needed. (25 Pa. Code § 102.1)

Municipal Separate Storm Sewer System (MS4) means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to 40 CFR §§ 122.26(b)(4), (b)(7), and (b)(16), respectively, or designated under 40 CFR § 122.26(a)(1)(v). (25 Pa. Code § 92a.32(a) and 40 CFR § 122.26(b)(18))

Municipality means a county, city, borough, town, township, school district, institution, or authority, or another public body created by or pursuant to State Law. For the purposes of this definition, town includes an incorporated town. (25 Pa. Code § 102.1)

Notice of Intent (NOI) means a request, on a form provided by DEP, for coverage under a General NPDES Permit for Discharges of Stormwater Associated with Construction Activities. (25 Pa. Code § 102.1)

Notice of Termination (NOT) – A request, on a form provided by DEP, to terminate coverage under a General NPDES Permit for Discharges of Stormwater Associated with Construction Activities. (25 Pa. Code § 102.1)

Non-discharge alternative – Environmentally sound and cost effective BMPs that individually or collectively eliminate the net change in stormwater volume, rate, and quality for stormwater events up to and including the 2-year/24-hour storm when compared to the stormwater rate, volume, and quality prior to the earth disturbance activities to maintain and protect the existing quality of the receiving surface waters of this Commonwealth. (25 Pa. Code § 102.1)

Operator means a person who has one or more of the following: (i) oversight responsibility of earth disturbance activity on a project site or a portion thereof who has the ability to make modifications to the E&S Plan, PCSM Plan or site specifications, (ii) day-to-day operational control over earth disturbance activity on a project site or a portion thereof to ensure compliance with the E&S Plan or PCSM Plan. (25 Pa. Code § 102.1)

Owner means a person(s) who holds the legal title to the land subject to construction activity. This term also includes the person(s) who held legal title to the land subject to construction activity at the time such activity was commenced on a site.

Permittee means a person who has coverage under this General Permit. The term permittee is also used to describe operators who are co-permittees, to the extent that co-permittees are jointly and severally liable for non-compliance with this General Permit.

Permanent Stabilization means long-term protection of soil and water resources from accelerated erosion. (25 Pa. Code § 102.1)

Person – Any operator, individual, public or private corporation, partnership, association, municipality or political subdivision of this Commonwealth, institution, authority, firm, trust, estate, receiver, guardian, personal representative, successor, joint venture, joint stock company, fiduciary; Department, agency or instrumentality of state, federal, or local government, or an agent or employee thereof; or any other legal entity. Whenever used in any clause prescribing and imposing a penalty, or imposing a fine or imprisonment or both, the term "person" shall not exclude the members of an association and the directors, officers, or agents of a corporation.

Point Source means any discernable, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, Concentrated Aquatic Animal Production Facility (CAAP), Concentrated Animal Feeding Operation (CAFO), landfill leachate collection system, or vessel, or other floating craft, from which pollutants are or may be discharged. (25 Pa. Code § 92a.2)

Post-Construction Stormwater means stormwater associated with a project site after the earth disturbance activity has been completed and the project site is permanently stabilized.

Post-Construction Stormwater Management Plan (PCSM Plan) means a site-specific plan consisting of both drawings and a narrative that identifies BMPs to manage changes in stormwater runoff volume, rate, and water quality after earth disturbance activities have ended and the project site is permanently stabilized. (25 Pa. Code § 102.1)

Preparedness, Prevention, and Contingency Plan (PPC Plan) means a written plan that identifies an emergency response program, material and waste inventory, spill and leak prevention and response, inspection program, housekeeping program, security and external factors, and that is developed and implemented at the construction

site to control potential discharges of pollutants other than sediment into waters of this Commonwealth. (25 Pa. Code § 102.1)

Project site means the entire area of activity, development, lease, or sale including: (i) the area of the earth disturbance activity; (ii) the area planned for the earth disturbance activity; and (iii) Other areas which are not subject to earth disturbance activity. (25 Pa. Code § 102.1)

Regulated fill means soil, rock, stone, dredged material, used asphalt, historic fill, and brick, block or concrete from construction and demolition activities that is separate from other waste and recognizable as such that has been affected by a spill or release of a regulated substance and the concentrations of regulated substances exceed the values in Tables FP-1a and b of DEP's Management of Fill Policy (DEP ID No. 258-2182-773).

Riparian buffer means a BMP that is an area of permanent vegetation along surface waters. (25 Pa. Code § 102.1)

Riparian forest buffer means a type of riparian buffer that consists of permanent vegetation that is predominantly native trees, shrubs, and forbs along surface waters that is maintained in a natural state or sustainably managed to protect and enhance water quality, stabilize stream channels and banks, and separate land use activities from surface waters. (25 Pa. Code § 102.1)

Snowmelt means the conversion of snow into overland stormwater and ground water flow as a result of warmer temperatures.

Stabilization means the proper placing, grading, constructing, reinforcing, lining, and covering of soil, rock, or earth to ensure their resistance to erosion, sliding, or other movement. (25 Pa. Code § 102.1)

Stormwater means runoff from precipitation, snowmelt, surface runoff, and drainage. (25 Pa. Code § 102.1)

Surface Waters means perennial and intermittent streams, rivers, lakes, reservoirs, ponds, wetlands, springs, natural seeps, and estuaries, excluding water at facilities approved for wastewater treatment such as wastewater treatment impoundments, cooling water ponds, and constructed wetlands used as part of a wastewater treatment process. (25 Pa. Code § 102.1)

Total Maximum Daily Load (TMDL) means the sum of the individual wasteload allocations for point sources, load allocations for nonpoint sources and natural quality, and a margin of safety expressed in terms of mass per time, toxicity, or other appropriate measures. (25 Pa. Code § 96.1)

Toxic Pollutant (Toxics) means those pollutants, or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains may, on the basis of information available to DEP cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in these organisms or their offspring. (25 Pa. Code § 92a.2)

Transferee – Person(s) identified through the co-permittee/transferee form as having new responsibility for the discharges of stormwater during construction activities and responsibility for compliance with all terms and conditions of this General Permit and all applicable laws for discharges of stormwater during the construction activity.

Urbanized area (UA) means land area comprising one or more places (central place(s)) and the adjacent densely settled surrounding area (urban fringe) that together have a residential population of at least 50,000 and an overall population density of at least 1,000 people per square mile, as defined by the United States Bureau of the Census and as determined by the latest available decennial census. The UA outlines the extent of automatically regulated areas.

Wasteload Allocation (WLA) means the portion of a surface water's loading capacity that is allocated to existing and future point source discharges. (25 Pa. Code § 96.1)

Waters of this Commonwealth means rivers, streams, creeks, rivulets, impoundments, ditches, watercourses, storm sewers, lakes, dammed water, wetlands, ponds, springs, and other bodies or channels of conveyance of surface

and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth. (25 Pa. Code § 102.1)

Wetlands means 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. (25 Pa. Code § 105.1)

II. AUTHORITY OF DEP AND CCD

A. DEP or CCD may notify the permittee at any time that the General Permit terms and conditions are not being met. Upon plan review or site inspection, DEP or CCD may require E&S Plan revisions or other appropriate action to ensure compliance with the terms and conditions of this General Permit.

B. DEP or CCD has the right to enter onto the site to conduct inspections, conduct monitoring, or require monitoring where deemed necessary. The permittee shall commence such monitoring upon notification from DEP or CCD in the manner directed by DEP or CCD.

C. DEP or CCD may request copies of records required by this General Permit, which could include the records required under Part A Section III of this General Permit.

D. DEP may require by written notice any person authorized by this General Permit to apply for an Individual NPDES Permit. This notice shall include the following:

1. A brief statement of the reasons for the decision.

2. An application form for an Individual NPDES Permit.

3. A statement setting a 90-day deadline for the owner or operator to file an application.

III. NOTICE OF INTENT SUBMITTAL

A. General Information and Requirements

1. Persons proposing to discharge stormwater associated with construction activities and eligible persons proposing to expand the scope previously authorized discharges of stormwater associated with construction activities, who wish to be covered by this General Permit, must submit an administratively complete and acceptable Notice of Intent (NOI) to DEP or CCD and receive authorization from DEP or CCD prior to commencing the construction activity. The NOI shall be filed in accordance with the detailed instructions specified in the NOI instructions.

2. Operators of all construction activities subject to this General Permit shall develop, implement, and maintain erosion and sediment (E&S) and post-construction stormwater management (PCSM) best management practices (BMPs) and other pollution prevention measures required by this General Permit to minimize accelerated erosion and sedimentation before, during, and after construction activities.

3. E&S BMPs shall be designed and implemented to meet the standards and specifications identified in DEP's regulations, including 25 Pa. Code §§ 102.4 (relating to erosion and sediment control requirements) and 102.11(a)(1) (relating to general requirements), and listed in DEP's *Erosion and Sediment Pollution Control Program Manual* (DEP ID No. 363-2134-008), as amended and updated, or an alternative that is at least as effective or better, when authorized by DEP.

4. PCSM BMPs shall be designed and implemented to meet the standards and specifications identified in DEP's regulations, including 25 Pa. Code §§ 102.8 (relating to PCSM requirements) and 102.11(a)(2), and listed in DEP's *Pennsylvania Stormwater Best Management Practices Manual* (DEP ID No. 363-0300-002), as amended and updated, or an alternative that is as at least as effective or better, when authorized by DEP.

5. The E&S Plan, PCSM Plan, and Preparedness, Prevention and Contingency (PPC) Plan shall identify appropriate BMPs that will be implemented to ensure that existing and designated uses of surface waters are protected and maintained.

6. The permittee or co-permittee(s) shall maintain the E&S Plan, PCSM Plan, PPC Plan, and other documents required by this General Permit at the project site and available for review by DEP or CCD or other authorized local, state, or federal agent or representative.

B. The following activities are not eligible for coverage under this General Permit:

1. Discharges to waters, including wetlands, with a designated or existing use of High Quality Waters (HQ) or Exceptional Value Waters (EV) pursuant to 25 Pa. Code Chapter 93 (relating to water quality standards). (25 Pa. Code § 92a.54(e)(9))

2. Discharges which contain hazardous pollutants, toxics, or any other substance which - because of its quantity, concentration, or physical, chemical, or infectious characteristics - may cause or contribute to an increase in mortality or morbidity in either an individual or the total population, or pose a substantial present or future hazard to human health or the environment when discharged into surface waters of this Commonwealth. (25 Pa. Code § 92a.54(a)(5))

3. Discharges which individually or cumulatively have the potential to cause significant adverse environmental impact. (25 Pa. Code § 92a.54(e)(1))

4. Discharges to waters for which NPDES general permit coverage is prohibited under 25 Pa. Code Chapter 92a (relating to NPDES permitting, monitoring and compliance).

5. Discharges which are not, or will not be, in compliance with any of the terms or conditions of this General Permit. (25 Pa. Code § 92a.54(e)(2))

6. Discharges for which the responsible party (person) has failed and continues to fail to comply or has shown a lack of ability or intention to comply with a regulation, permit, and schedule of compliance or order issued by DEP or CCD. (25 Pa. Code § 92a.54(e)(3))

7. Discharges subject to categorical point source effluent limitations promulgated by the United States Environmental Protection Agency (EPA) for categories other than construction or post-construction. (25 Pa. Code § 92a.54(e)(5))

8. Discharges which do not, or will not, result in compliance with applicable effluent limitations or water quality standards. (25 Pa. Code § 92a.54(e)(6))

9. Discharges from construction activities for which DEP requires an Individual NPDES Permit to ensure compliance with the federal Clean Water Act, Pennsylvania's Clean Streams Law, or rules and regulations promulgated thereto; or where a change has occurred in the availability of demonstrated technology or practices for the control or abatement of pollutants applicable to the point source. (25 Pa Code § 92a.54(e)(8))

10. Discharges associated with coal mining or noncoal mining activities pursuant to DEP's regulations at 25 Pa. Code Chapters 77 and 86-90.

11. Discharges associated with a construction activity that may adversely affect a Pennsylvania or federal endangered or threatened species or its critical habitat. (25 Pa. Code § 92a.12(c))

12. Discharges from a site where other point source(s) require the issuance of an Individual NPDES Permit. (25 Pa. Code § 92a.54(e)(7))

13. Discharges to surface waters identified as waters impaired for siltation, suspended solids, turbidity, water/flow variability, flow modifications/alterations, or nutrients in DEP's latest published Integrated Water Quality Monitoring and Assessment Report (Integrated Report) most recently approved by EPA unless the discharges will be managed with a non-discharge alternative or ABACT BMPs.

14. Discharges to surface waters that are covered by an EPA-approved or EPA-established Total Maximum Daily Load (TMDL), including discharges to waters tributary to the Chesapeake Bay, in which the pollutant(s) of concern include siltation, suspended solids, or nutrients, unless the discharges will be

managed with a non-discharge alternative or ABACT BMPs. In addition, if a specific wasteload allocation (WLA) has been established that would apply to the discharge, the permittee shall implement necessary steps to meet that allocation.

15. Discharges to municipal separate storm sewer systems (MS4s) and combined sewer overflow (CSO) municipal systems without the written consent of the MS4 or CSO permit holder unless those discharges result in no net change (pre-condition to post-condition) in volume or rate or water quality.

16. Discharges of (a) wastewater from washout of concrete, unless managed by an appropriate control; (b) wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials; (c) fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and (d) soaps or solvents used in vehicle and equipment washing.

C. If a payment (e.g., check, electronic transfer) of either an administrative filing fee or a disturbed acreage fee has been processed as part of an administratively complete application and is subsequently returned for insufficient funds, the NOI will be suspended until sufficient funds are provided. If earth disturbance activity authorized by the General Permit occurs and DEP or CCD is subsequently notified that the fee(s) were not paid, earth disturbance activities at the site will be immediately suspended and the site must be immediately stabilized until the fees are paid in full. If the fees are not paid in full within 30 days of notification of unpaid fees, the General Permit authorization will be revoked.

D. No condition of this General Permit shall release any person from any responsibility or requirements under relevant federal or Pennsylvania environmental statutes or regulations, or under relevant local ordinances.

E. The approval of coverage is granted based, in part, on information provided by the applicant in the NOI. The information provided by the applicant, including all appendices, attachments, plans, and supporting documentation, are incorporated by reference as a part of the approval and are enforceable as a condition of the approval. If there is any conflict between the General Permit and the NOI, including any appendices, attachments, plans, and other supporting documentation, the more environmentally protective provision applies.

IV. NOTICE OF TERMINATION

A. Termination of Coverage

1. Upon permanent stabilization of earth disturbance activity under 25 Pa. Code § 102.22(a)(2) (relating to permanent stabilization) and installation of BMPs in accordance with the approved plans prepared and implemented in accordance with 25 Pa. Code §§ 102.4 and 102.8, the permittee and/or co-permittee(s) shall submit an NOT to DEP or CCD. The NOT must include:

   a. The facility name, address, and location.
   b. The operator name and address.
   c. The permit number.
   d. The reason for the permit termination.
   e. Identification of the persons who have agreed to and will be responsible for the long-term O&M of PCSM BMP(s).

2. Until the permittee or co-permittee has received written approval of the NOT, the permittee or co-permittee will remain responsible for compliance with the General Permit terms and conditions, including long-term O&M of all PCSM BMPs on the project site in accordance with 25 Pa. Code § 102.8(m) (relating to PCSM long-term operation and maintenance requirements). DEP or CCD will conduct a follow-up inspection and approve or deny the NOT within 30 days of its receipt in accordance with 25 Pa. Code § 102.7(c) (relating to permit termination).

B. Final Certification

1. The permittee shall enclose with the NOT "Record Drawings" a final certification statement from a licensed professional, which reads as follows:

   "I (name) do hereby certify pursuant to the penalties of 18 Pa.C.S. § 4904 to the best of my knowledge, information, and belief, that the accompanying record drawings accurately reflect the as built conditions, are true and correct, and are in conformance with Chapter 102 of the rules and regulations of the Department of Environmental Protection and that the project site was constructed in accordance with the approved PCSM Plan, all approved plan changes, and accepted construction practices."

2. The permittee shall retain a copy of the record drawings as part of the approved PCSM Plan and shall provide a copy of the record drawings to the persons identified as responsible for the long-term O&M of PCSM BMPs. Permittees shall also provide copies of both the record drawings and the long-term O&M plan to DEP or CCD and the municipality(ies) where the project site is located.

General Permit (PAG-02) Issued **By** _____

Acting Director
Bureau of Clean Water

Effective: **December 8, 2019**

Expires: **December 7, 2024**

PART A

EFFLUENT LIMITATIONS, MONITORING AND REPORTING REQUIREMENTS

I. EFFLUENT LIMITATIONS

A. BMPs.

Except as required by 25 Pa. Code § 102.11(c), this General Permit establishes narrative performance-based effluent limitations in the form of BMPs identified in E&S Plans, PCSM Plans, and PPC Plans, which control the volume, rate, and quality of stormwater runoff discharged into surface waters, and which replicate pre-construction infiltration and runoff conditions to the maximum extent practicable. Section 102.11(c) incorporates by reference federal Effluent Limitation Guidelines in 40 CFR Part 450 (relating to the construction and development point source category).

B. Water Quality-Based Effluent Limitations.

1. Persons proposing or conducting earth disturbance activities shall develop, implement and maintain E&S and PCSM BMPs to minimize the potential for accelerated erosion and sedimentation and to manage post-construction stormwater to ensure that the water quality standards of all affected waters are attained.

2. Earth disturbance activities authorized under this General Permit shall achieve WLAs established in any applicable TMDL. All stormwater discharges must comply with all applicable requirements established in accordance with DEP's regulations at 25 Pa. Code Chapters 91-96, 102, and 105.

3. For all permittees covered under this General Permit, DEP or CCD may, upon written notice, require additional BMPs or other control measures to ensure that the water quality standards of the receiving waters are attained.

C. The permittee may not discharge:

1. Floating solids, scum, sheen or substances that result in observed deposits in the receiving water, and foam or substances that produce an observable change in the color, taste, odor or turbidity of the receiving water. (25 Pa. Code § 92a.41(c))

2. Substances in concentration or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant or aquatic life. (25 Pa. Code § 93.6(a))

II. MONITORING, INSPECTION, AND REPORTING REQUIREMENTS

A. Site Inspections – The permittee shall conduct visual site inspections throughout the duration of construction and until the NOT has been submitted by the permittee, at the following frequencies:

- Routine Inspections shall be conducted weekly.
- Post-Storm Event Inspections shall be conducted within 24 hours after the conclusion of each measurable storm event (i.e., precipitation in an amount of 0.25 inch or greater over a 24-hour period) or the occurrence of snowmelt sufficient to cause a discharge.
- Corrective Action Inspections shall be conducted anytime the permittee observes a deficiency in implementation of the E&S and PCSM Plans.

1. The permittee shall document each site inspection on DEP's Chapter 102 Visual Site Inspection Report (3800-FM-BCW0271d) or alternative document or electronic form that collects and retains identical information. All requested information on the Visual Site Inspection Report must be completed. If electronic forms are used to document site inspections, the permittee shall provide a physical copy of the inspection report to DEP or CCD upon request. The permittee shall submit visual site inspection reports to DEP or CCD upon request.

2. Site inspections shall be performed by personnel that are trained and experienced in E&S and PCSM BMP construction, function, and maintenance and are familiar with the E&S and PCSM Plans for the project site.

3. To determine if a storm event of 0.25 inch or greater has occurred on a project site, the permittee shall either maintain a rain gauge on-site or obtain storm event information from a weather station that is representative of the project site location.

B. Licensed Professional Oversight of Critical Stages (25 Pa. Code § 102.8(k))

A licensed professional or a designee shall be present on-site and shall be responsible for oversight of critical stages of implementation of the approved PCSM Plan. The critical stages may include the installation of underground treatment or storage BMPs, structurally engineered BMPs, or other BMPs as deemed appropriate by DEP or CCD.

C. Non-Compliance or Potential Pollution Reporting

Where E&S, PCSM or PPC BMPs are found to be inoperative or ineffective during an inspection or any other time the permittee becomes aware of any incident causing or threatening pollution as described in 25 Pa. Code § 91.33 (relating to incidents causing or threatening pollution), as required by 25 Pa. Code § 92a.41(b) (relating to conditions applicable to all permits), the permittee and/or co-permittee(s) shall, as soon as possible but no later than four (4) hours after becoming aware of the incident, contact DEP or CCD, by phone or personal contact, followed by the submission of a written report within five (5) days of the initial contact, which may be waived by DEP or CCD. Non-compliance reports shall include the following information:

1. Any condition on the project site which may endanger public health, safety, or the environment, or involve incidents which cause or threaten pollution;

2. The period of non-compliance, including exact dates and times and/or anticipated time when the activity will return to compliance;

3. Steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance; and

4. The date or schedule of dates, and identifying remedies for correcting non-compliance conditions.

D. Monitoring.

DEP or CCD may require additional monitoring where an increased risk of potential water pollution is present, or water pollution is suspected to be occurring from a construction activity subject to this General Permit, or for any reason in accordance with 25 Pa. Code § 92a.61 (relating to monitoring). The permittee or co-permittee shall commence such monitoring upon notification from DEP or CCD. (25 Pa. Code § 92a.61(b))

III. RECORD KEEPING

The permittee and co-permittee(s) shall retain records of all monitoring information including copies of all monitoring and inspection reports required by this General Permit, all monitoring information (including site log book, calibration and maintenance records) and records of data used to complete the NOI for this General Permit for a period of three years from the date General Permit coverage is terminated, as required by 25 Pa. Code § 92a.61(f)(2). This period of retention must be extended during the course of any unresolved compliance, enforcement, or litigation or when requested by DEP or CCD. (25 Pa. Code § 92a.3(c) and 122.41(j)(2))

IV. DISCHARGES CONSISTENT WITH TERMS AND CONDITIONS OF THE GENERAL PERMIT

All discharges authorized by this NPDES permit shall be consistent with the terms and conditions of the General Permit.

PART B

STANDARD CONDITIONS

I. MANAGEMENT REQUIREMENTS

A. Permit Modification, Termination, or Revocation and Reissuance

The General Permit will expire five (5) years from the date of its issuance. DEP will publish a notice of the draft, renewed, or reissued General Permit or of any amendments to this General Permit, in the *Pennsylvania Bulletin*, and, after a comment period, DEP will publish notice of the final, renewed, reissued or amended General Permit in the *Pennsylvania Bulletin*. Any person wishing to be covered by such a final, renewed, reissued or amended General Permit must submit an NOI for General Permit coverage or, for existing discharges with General Permit coverage, an affirmative acknowledgement of the new General Permit's terms and conditions, as applicable. See 40 CFR § 122.28(b)(2)(i). A person may alternatively request coverage under an Individual NPDES Permit. See 40 CFR § 122.28(b)(2)(vi); 25 Pa. Code § 92a.54(c) and (d) (relating to general permits). If the permittee is unable to comply with the renewed, reissued, or amended General Permit, the permittee must submit an application for an Individual NPDES Permit within 90 days of publication of this General Permit.

1. Coverage under this General Permit may be modified, suspended, revoked, reissued, or terminated during its term for any of the causes specified in 25 Pa. Code Chapters 92a (relating to NPDES permitting, monitoring and compliance) and 102 (relating to erosion and sediment control), or to require compliance with updated effluent limitation guidelines, water quality standards, impaired water listings, or newly approved TMDLs.

2. DEP may modify, revoke, suspend, or terminate previously issued coverage under this General Permit and require the stormwater discharger to apply for and obtain an Individual NPDES Permit in accordance with 25 Pa. Code Chapters 92a and 102.

3. The filing of a request by the permittee or co-permittee(s) for a General Permit or coverage modification, revocation, reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not eliminate any existing General Permit conditions.

4. General Permit coverage modification or revocation will be conducted according to 25 Pa. Code Chapters 92a and 102.

B. Duty to Provide Information

1. The permittee or co-permittee(s) shall furnish to DEP or CCD within thirty (30) days or such other timeframe as instructed by DEP or CCD, any information that DEP or CCD may request to determine whether cause exists for modifying, revoking, reissuing, or terminating coverage approved under this General Permit or to determine compliance with this General Permit. (25 Pa. Code § 92a.41(a) and 40 CFR § 122.41(h))

2. The permittee or co-permittee(s) shall furnish, upon request, to DEP or CCD or EPA, copies of records required to be kept by this General Permit. (25 Pa. Code § 92a.41(a) and 40 CFR § 122.41(h))

3. When the permittee or co-permittee(s) becomes aware that they failed to submit any relevant facts or submitted incorrect information in the NOI, E&S Plan, PCSM Plan, or PPC Plan or in any other report to DEP or CCD, the permittee or co-permittee shall within 24 hours of becoming aware of the deficiency submit or correct such facts or information. (25 Pa. Code § 92a.41(a) and 40 CFR § 122.41(l)(8))

4. The permittee or co-permittee shall give seven (7) calendar days advance notice to DEP or CCD of any planned physical alterations or additions to the permitted facility which could, in any way, substantially affect the quality and/or quantity of stormwater discharged from the activity.

C. Signatory Requirements (25 Pa. Code § 92a.22 and 40 CFR § 122.22)

Documents required, submitted, or maintained under this General Permit shall be signed in accordance with the following:

1. Notices of Intent, Transferee/Co-permittee Form, and Notices of Termination.

   a. Corporations – (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or (2) the manager of one or more manufacturing, production, or operating facilities, if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

   b. Partnerships or sole proprietorships – a general partner or the proprietor, respectively; or

   c. Municipalities, state, federal, or other public agencies – either a principal executive officer or ranking elected official such as: (1) the chief executive officer or secretary of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. All reports, plans, documents, and other information required by the General Permit or requested by DEP or CCD be signed by a duly authorized representative of the permittee.

3. If there is a change in the duly authorized representative of the permittee or co-permittee, respectively, the permittee or co-permittee(s) shall notify DEP or CCD within thirty (30) days of the change.

D. Transfer/Change of Ownership or Control

1. This General Permit is not transferable to any person except after notice and acknowledgment by DEP or CCD.

   a. In the event of any pending change in control or ownership of facilities from which the authorized discharges emanate, the permittee or co-permittee shall notify DEP or CCD using the form entitled "Application for NPDES or WQM Permit Transfer" (Transfer Application) (3800-PM-BCW0041b) of such pending change at least thirty (30) days prior to the change in ownership or control.

   b. The Transfer Application form shall be accompanied by a written agreement between the existing permittee and the new owner or operator stating that the existing permittee shall be liable for violations of the permit up to and until the date of coverage transfer and that the new owner or operator shall be jointly and individually liable for permit violations under the permit from that date on.

   c. After receipt of an administratively complete and acceptable Transfer Application form, DEP or CCD shall notify the existing permittee and the new owner or operator of its decision concerning approval of the transfer of ownership or control. Such requests shall be deemed approved and the permit will be considered modified unless DEP or CCD notifies the applicant otherwise within thirty (30) days.

2. DEP or CCD may require the new owner or operator to apply for and obtain an Individual NPDES permit.

3. For purposes of this General Permit, operators shall include general contractors. Operators who are not the permittee shall be co-permittees. If prior to construction activities, the owner is the permittee and an operator/general contractor is later identified to become a co-permittee, the owner shall:

   a. Complete and submit the Co-Permittee Acknowledgement for Chapter 102 Permits form (3800-FM-BCW0271a) prior to the operator engaging in earth disturbance activities; and

   b. Ensure that monitoring reports and any other information requested under this General Permit shall reflect all changes to the permittee and the co-permittee name.

4. After receipt of the documentation described in paragraph 3 above, the permit will be considered modified by DEP or CCD unless DEP or CCD notifies the applicant otherwise within thirty (30) days. For the purposes of this permit, this modification is considered to be a minor permit modification.

5. Upon authorization of a change in ownership or control, the existing permittee shall provide a copy of the permit and approved plans to the new owner and/or co-permittee.

E. Removed Substances

Solids, sediments, and other pollutants removed in the course of treatment or control of stormwater shall be disposed in accordance with federal and state law and regulations, in order to prevent any pollutant in such materials from adversely affecting public health or the environment.

F. BMP Construction, Operation and Maintenance

The permittee and co-permittee(s) are responsible for the design, installation, operation, and maintenance of the BMPs identified in the E&S Plan, PCSM Plan, and PPC Plan.

G. Reduction, Loss, or Failure of BMP

Upon reduction, loss, or failure of any BMP, the permittee and co-permittee(s) shall take immediate action to restore, repair, or replace the BMP or to provide an alternative method of treatment. Such restored BMP or alternative treatment shall be at least as effective as the original BMP when properly installed. These actions shall be undertaken to ensure that there are no pollutants or pollution discharged to the waters of the Commonwealth. This requirement is applicable in situations where the BMP is rendered ineffective, whether the cause or source of the reduction, loss or failure is within or beyond the control of the permittee or co-permittee(s).

II. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee and co-permittee(s) must comply with all terms and conditions of this General Permit. Any General Permit non-compliance constitutes a violation of Pennsylvania's Clean Streams Law and the federal Clean Water Act and is grounds for enforcement action; permit termination, revocation, reissuance, or modification; or denial of a permit or permit renewal. (25 Pa. Code §§ 92a.3(c), 92a.41(a) and 40 CFR § 122.41(a))

B. Penalties for Violations of Permit Conditions

Any person who violates a General Permit condition, fails to take corrective action to abate violations or falsifies report or other documents may be subject to criminal and/or civil penalties or other appropriate action for violations of the terms and conditions of this General Permit under Sections 602 and 605 of Pennsylvania's Clean Streams Law (35 P.S. §§ 691.602 and 691.605), and under the Clean Water Act as specified in 40 CFR §§ 122.41(a)(2) and (3), which are incorporated into 25 Pa. Code § 92a.41 by reference.

C. Need to Halt or Reduce Activity Not a Defense

The permittee may not maintain as a defense in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this General Permit. (25 Pa. Code § 92a.41(a) and 40 CFR § 122.41(c))

D. Penalties and Liability

Nothing in this General Permit shall be construed to preclude the institution of any legal action or to relieve the permittee or co-permittee(s) from any responsibilities, liabilities, or penalties to which the permittee or co-permittee is or may be subject under Section 311 of the Clean Water Act (33 U.S.C.A. § 1321) or Section 106 of Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C.A. § 9606).

E. Property Rights

This General Permit does not convey any property rights of any sort, nor does this General Permit convey any exclusive privileges, and this General Permit does not authorize any injury to private property invasion of personal rights, or infringement of federal, state, or local laws or regulations.

F. Severability

The provisions of this General Permit are severable, and if any provision of this General Permit, or the application of any provision of this General Permit to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this General Permit shall not be affected thereby.

G. Other Laws

Nothing in this General Permit shall be construed to preclude the institution of any legal action or to relieve the permittee or co-permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act (33 U.S.C.A. § 1370).

H. Right of Entry

Pursuant to Sections 5(b) and 305 of Pennsylvania's Clean Streams Law (35 P.S. §§ 691.5(b) and 691.305), 25 Pa. Code Chapter 92a, and section1917-A of the Administrative Code of 1929, the permittee and co-permittee shall allow the Secretary of DEP, the EPA Regional Administrator, and/or an authorized representative of EPA, or DEP, including a delegated conservation district or, in the case of a facility which discharges to a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents, as may be required by law, to:

1. Enter upon the permittee's or co-permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the terms and conditions of this General Permit;

2. Have access to and copy, at reasonable times, any records that must be kept under the terms and conditions of this General Permit;

3. Inspect any facilities or equipment (including monitoring and control equipment); and

4. Observe or sample any discharge of stormwater.

I. Availability of Reports

Except for data determined to be confidential under Section 607 of the Clean Streams Law (35 P.S. § 691.607), all reports prepared in accordance with the terms and conditions of this General Permit shall be available for public inspection at the offices of DEP or CCD. As required by the Clean Water Act, the Clean Streams Law, and DEP's regulations at 25 Pa. Code § 92a.8 (relating to confidentiality of information), permit applications/NOIs, permits, and other documents related to this General Permit shall not be considered confidential.

J. Penalties for Falsification of Reports

Section 309(c)(4) of the Clean Water Act (33 U.S.C.A. § 1319(c)(4)) provides that any person who knowingly makes any false material statement, representation, or certification in any record or other document submitted or required to be maintained under this General Permit, including reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 or by imprisonment for not more than two (2) years or by both a fine and imprisonment. In addition, criminal sanctions are set forth for false swearing and unsworn falsification at 18 Pa.C.S. §§ 4903-4904.

K. Duty to Reapply

If the permittee wishes to continue an activity regulated by this General Permit after the expiration date of this General Permit, the permittee must timely apply for and obtain coverage under a new General Permit. (25 Pa. Code §§ 92a.3(c) and 92a.41(a)(2) and 40 CFR § 122.41(b))

PART C

OTHER CONDITIONS

I. PROHIBITION OF NON-STORMWATER DISCHARGES

All discharges covered by this General Permit shall be composed entirely of stormwater. Discharges other than those authorized by this General Permit must comply with separate NPDES permit coverage. The discharge of sewage or industrial waste to BMPs is not permitted.

II. EROSION AND SEDIMENT CONTROL PLANS

A. Unless otherwise authorized by DEP or CCD, earth disturbance activities shall, to the extent practicable, be planned and implemented to:

1. Minimize the extent and duration of earth disturbance.
2. Maximize protection of existing drainage features and vegetation.
3. Minimize soil compaction.
4. Utilize other measures or controls that prevent or minimize the generation of increased stormwater runoff.

B. An E&S Plan shall be prepared and implemented in accordance with the requirements of 25 Pa. Code Chapter 102 and by a person trained and experienced in E&S control methods and techniques applicable to the size and scope of the project being designed. Each E&S Plan must be submitted to and approved by DEP or CCD. The BMPs shall be designed to minimize the potential for accelerated erosion and sedimentation in order to protect, maintain, reclaim, and restore water quality and the existing and designated uses of the waters of this Commonwealth. Various BMPs and their design standards are listed in the *Erosion and Sediment Pollution Control Program Manual* (DEP ID No. 363-2134-008), as amended and updated. Approved E&S Plans and BMPs, and approved revisions thereto, which meet the requirements of 25 Pa. Code Chapters 93, 96 (relating to water quality standards implementation), and 102, are conditions of this General Permit and are incorporated by reference.

C. E&S Plans required under this General Permit are considered reports that shall be available to the public under Section 607 of the Clean Streams Law (35 P.S. § 691.607) and 25 Pa. Code Chapter 92a. The owner or operator of a facility with stormwater discharges covered by this General Permit shall make E&S Plans available to the public upon request. The permittee shall maintain the approved E&S Plan on-site during earth disturbance activities at all times and shall make the plan available for inspection by DEP or CCD upon request.

D. The approved E&S Plan, including the staging of earth disturbance activities and maintenance requirements, must be followed.

E. Upon the installation of all perimeter sediment control BMPs and at least three (3) days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to DEP or CCD by phone or electronic mail.

III. RECYCLING AND DISPOSAL OF BUILDING MATERIALS AND WASTES

All building materials and wastes must be removed from the site and recycled or disposed of in accordance with DEP's Solid Waste Management Regulations at 25 Pa. Code Chapter 260a (relating to hazardous waste management system: general), Chapter 271 (related to municipal waste management – general provisions), and Chapter 287 (relating to residual waste management – general provisions). No building material or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

IV. PREPAREDNESS, PREVENTION, AND CONTINGENCY PLANS

If toxic, hazardous, or other polluting materials will be on site, the permittee or co-permittee(s) must develop a PPC Plan for use while those materials are on-site in accordance with 25 Pa. Code §§ 91.34 (relating to activities utilizing pollutants) and 102.5(l). The PPC Plan shall identify areas which may include, but are not limited to, waste management areas, raw material storage areas, fuel storage areas, temporary and permanent spoils storage areas, maintenance areas, and any other areas that may have the potential to cause non-compliance with the terms and conditions of this General Permit due to the storage, handling, or disposal of any toxic or hazardous substances

such as oil, gasoline, pesticides, herbicides, solvents, or concrete washwaters. BMPs shall be developed and implemented for each identified area. The PPC Plan shall be maintained on-site at all times and shall be made available for review at the request of DEP or CCD.

V. POST-CONSTRUCTION STORMWATER MANAGEMENT PLANS

A. The management of post-construction stormwater shall, to the extent practicable, be planned and conducted to:

1. Preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream.
2. Prevent an increase in the rate of stormwater runoff.
3. Minimize any increase in stormwater runoff volume.
4. Minimize impervious areas.
5. Maximize the protection of existing drainage features and existing vegetation.
6. Minimize land clearing and grading.
7. Minimize soil compaction.
8. Utilize other structural or nonstructural BMPs that prevent or minimize changes in stormwater runoff.

B. A PCSM Plan shall be prepared and implemented in accordance with the requirements of 25 Pa. Code Chapter 102 and by a person trained and experienced in PCSM design methods and in techniques applicable to the size and scope of the project being designed. The management of post-construction stormwater shall be planned and conducted in accordance with 25 Pa. Code § 102.8 (relating to PCSM requirements). Various BMPs and their design standards are detailed in the *Pennsylvania Stormwater Best Management Practices Manual* (DEP ID No. 363-0300-002), as amended and updated. Each PCSM Plan must be submitted to and approved by DEP or CCD. The PCSM Plan must employ stormwater management BMPs to control the volume, rate, and water quality of the post-construction stormwater runoff so as to protect and maintain the chemical, physical, and biological integrity, and the existing and designated uses of the waters of this Commonwealth. Approved PCSM Plans and BMPs, and approved revisions thereto, which meet the requirements of 25 Pa. Code Chapters 93, 96, and 102, are conditions of this General Permit and are incorporated by reference.

C. PCSM Plans required under this General Permit are considered reports that shall be available to the public under Section 607 of the Clean Streams Law (35 P.S. § 691.607) and 25 Pa. Code Chapter 92a. The owner or operator of a facility with stormwater discharges covered by this General Permit shall make PCSM Plans available to the public upon request. The permittee shall maintain the authorized PCSM Plan on-site during earth disturbance activities at all times and shall make the plan available for inspection by DEP or CCD upon request.

D. A licensed professional or their designee shall be present on-site and shall be responsible for oversight of critical stages of implementation of the approved PCSM Plan. The licensed professional will be responsible to provide a final certification, pursuant to 25 Pa. Code § 102.8(l) along with the required NOT and record drawings, indicating that the project site was constructed in accordance with the approved or modified PCSM Plan.

E. The portion of a site reclamation or restoration plan that identifies PCSM BMPs to manage stormwater from pipelines or other similar utility infrastructure may be used to satisfy the PCSM requirements if the PCSM reclamation or restoration plan meets the requirements of 25 Pa. Code §§ 102.8(b), (c), (e), (f), (h), (i), (l), and when applicable, (m).

VI. PRE-CONSTRUCTION MEETING

For earth disturbance activities authorized by this General Permit, a pre-construction meeting is required, unless the permittee has been notified otherwise in writing by DEP or CCD. The permittee shall invite DEP and CCD to attend the pre-construction meeting and provide at least seven (7) days' notice of the pre-construction meeting to all invited attendees. Permittees, co-permittees, operators, and licensed professionals, or designees responsible for earth disturbance activity, including implementation of E&S, PCSM and PPC Plans and critical stages of implementation of the approved PCSM Plan, shall attend the pre-construction meeting.

VII. SPOIL OR BORROW AREAS

A. An E&S Plan or other authorization meeting the regulatory requirements detailed in 25 Pa. Code § 102.4(b) shall be reviewed and approved by DEP or CCD and implemented for all spoil and borrow areas, regardless of their location.

B. Clean Fill Requirements – Any person placing clean fill that has been affected by a spill or release of a regulated substance must use DEP Form FP-001 (Certification of Clean Fill) to certify the origin of the fill material and the results of the analytical testing to qualify the materials as clean fill. The form must be retained by the owner of the property receiving the fill. Fill material not qualifying as clean fill is regulated fill and must be managed in accordance with DEP's municipal or residual waste regulations based on 25 Pa. Code Chapters 271 or 287, whichever is applicable.

VIII. PHASED PROJECTS

Prior to the commencement of earth disturbance activities for subsequent phases of the project, the permittee or co-permittee(s) shall submit an E&S Plan and PCSM Plan and supporting information for each additional phase or portion of the project to DEP or CCD for approval. Coverage under this General Permit is only granted for those phases or portions of a project for which an E&S Plan and PCSM Plan has been submitted and approved by DEP or CCD. Permittees and co-permittees with phases commenced after expiration of this PAG-02 General Permit shall be responsible for complying with the final renewed, reissued, or amended General Permit.

IX. WETLAND PROTECTION

If hydric soils or other wetland features are present, a wetland determination must be conducted in accordance with applicable DEP procedures. A copy of any wetland determination conducted on the project site shall be provided to DEP or CCD as part of the NOI. All wetlands identified must be included on the E&S Plan and PCSM Plan. Special precautions must be taken to protect wetlands and other water resources identified in the NOI, plans, and other supporting documents.

X. INFILTRATION BMPs

The permittee and co-permittee(s) shall ensure that soil compaction is avoided or minimized in any areas where infiltration BMPs will be utilized. If the areas planned for infiltration BMPs are compromised through compaction or other means, additional soil testing must be performed to verify that the infiltration BMPs will perform as planned.

XI. STABILIZATION

Upon final completion of an earth disturbance activity or any stage or phase of an activity; or temporary cessation of the earth disturbance activity, or any stage or phase of an activity where the cessation of earth disturbance will exceed four (4) days, the project site shall be immediately stabilized in accordance with the requirements of 25 Pa. Code §102.22(a) or (b) (relating to site stabilization), as applicable. E&S BMPs shall be implemented and maintained until permanent stabilization is completed. Once permanent stabilization has been established the temporary E&S BMPs shall be removed. Any areas disturbed in the act of removing temporary E&S BMPs shall be permanently stabilized upon completion of the temporary E&S BMP removal activity.

XII. SEWAGE FACILITIES

Earth disturbance may not commence until all applicable Act 537 Sewage Facilities Planning approvals have been obtained.

XIII. LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPs

A. The permittee or co-permittee shall be responsible for long-term O&M of PCSM BMPs unless a different person is identified in the NOT and that person has agreed to long-term O&M of PCSM BMPs.

B. For any property containing a PCSM BMP, the permittee or co-permittee shall record an instrument with the Recorder of Deeds which will assure disclosure of the PCSM BMP and the related obligations in the ordinary course of a title search of the subject property within 45 days of approval of coverage under this General Permit, unless extended in writing by DEP or CCD. The recorded instrument must identify the PCSM BMPs, provide

for necessary access related to long-term O&M for PCSM BMPs, and provide notice that the responsibility for long-term O&M of the PCSM BMPs is a covenant that runs with the land that is binding upon and enforceable by subsequent grantees. The permittee shall provide DEP or CCD proof of filing of the instrument recording with a Transfer Application, if applicable, and the NOT.

C. For Commonwealth-owned property, a covenant that runs with the land is not required until the transfer of the land containing a PCSM BMP occurs. Upon transfer of the Commonwealth-owned property containing the PCSM BMP, the deed must comply with 25 Pa. Code § 102.8(m). An agency of the federal government shall not be required to make or record a declaration of covenants on its property until transfer of the property to a non-federal or non-Commonwealth entity or individual. Upon transfer of the Commonwealth-owned or federally-owned property containing the PCSM BMP, the deed must comply with 25 Pa. Code § 102.8(m).

D. The person responsible for performing long-term O&M may enter into a written agreement with another person, including a conservation district, nonprofit organization, municipality, authority, private corporation, or other person, to transfer the responsibility for PCSM BMPs or to perform long-term O&M and provide notice thereof to DEP.

E. A permittee or co-permittee that fails to transfer long-term O&M of the PCSM BMPs or otherwise fails to comply with this requirement, shall remain jointly and severally responsible with the landowner for long-term O&M of the PCSM BMPs located on the property.

F. Unless an alternative process is approved by DEP in writing, upon the sale or other transfer of any parcel, lot, road or other real property included within the permit boundary, the permittee shall notify the purchaser, grantee, or transferee of the long-term PCSM BMP O&M requirements. The permittee shall expressly identify the PCSM BMPs on each property, the schedule for inspection and reporting, the person or entity responsible for long-term O&M of the PCSM BMPs and how access to the BMPs will be achieved and shall obtain approval from the purchaser, grantee or transferee. Unless a later date is approved by DEP in writing, the permittee shall provide DEP and CCD with notice of compliance with this section within 45 days from the date of transfer of the property and at the time the permittee files an NOT.

XIV. VOLUNTARY RIPARIAN FOREST BUFFERS

Persons that protect, convert, or establish a new riparian forest buffer that meets the requirements of 25 Pa. Code § 102.14(b) (relating to riparian buffer criteria) may qualify for benefits under 25 Pa. Code §§ 102.14(e)(1) (relating to antidegradation presumption) and (2) (relating to trading or offsetting credits).

XV. IMPLEMENTATION OF GENERAL PERMIT REQUIREMENTS

A. Prior to commencement of construction activities or commencement of work on the project site, the permittee and co-permittee(s) shall ensure that the following personnel understand the requirements of, and their specific responsibilities under, this General Permit:

- Personnel responsible for the installation, maintenance, and/or repair of E&S and PCSM BMPs and implementation of the PPC Plan.
- Personnel responsible for the application and storage of treatment chemicals (if applicable).
- Personnel responsible for conducting inspections.
- Personnel responsible for taking corrective actions.

B. The permittee and co-permittee(s) are responsible for ensuring that all activities on the project site comply with the requirements of this General Permit. The permittee and co-permittee(s) are not required to provide or document formal training for subcontractors or other outside service providers, but the permittee and co-permittee(s) must ensure that personnel understand any requirements of this General Permit that are relevant to the work they are subcontracted to perform.

C. At a minimum, the permittee and co-permittees must ensure that personnel understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections).

- The General Permit deadlines associated with installation, maintenance, and removal of stormwater controls, and with site stabilization.
- The location of all stormwater controls on the project site required by this General Permit and how they are to be maintained.
- The proper procedures to follow with respect to the General Permit's pollution prevention requirements.
- When and how to conduct inspections, record applicable findings, and take corrective actions.

D. A training log must be kept on-site and made available upon request from EPA, DEP, or CCD staff.

E. All personnel must have access at all times during earth disturbance activities to an electronic or paper copy of this General Permit, the approved copies of the E&S, PCSM and PPC Plans, and other relevant documents or information that must be kept with these plans.

XVI. THREATENED AND ENDANGERED SPECIES PROTECTION

A. If applicable, the permittee and co-permittee(s) shall comply with the provisions of any Habitat Conservation Plan approved by the jurisdictional resource agencies to protect State or Federal threatened and endangered species.

B. If any potential impact to federal or state threatened or endangered species is identified on the Pennsylvania Natural Diversity Inventory (PNDI) receipt, the permittee shall implement any avoidance/mitigation measures indicated on the PNDI receipt and/or other measures determined necessary by the resource agencies in a clearance letter, determination or other correspondence to resolve potential species impacts and ensure compliance with applicable federal and State laws pertaining to the protection of Federal or State threatened and endangered species.

C. When conducting earth disturbance activities, the permittee and co-permittee(s) have a continuing obligation to ensure compliance with applicable state and federal laws pertaining to the protection of Federal or State threatened and endangered species.

APPENDIX I

PENNSYLVANIA DEPARTMENT OF TRANSPORTATION HIGHWAY OCCUPANCY PERMIT

M-945P (6/12)

pennsylvania
DEPARTMENT OF TRANSPORTATION

Highway Occupancy Permit

Permit No.: **06106222**

Name and Address of Permittee:		
East Bradford Township 666 Copeland School Road West Chester, PA 19380	County: Chester	Issue Date: 4/13/2021
	County Contact No.: (484) 340-3220	Expiration Date: **4/13/2022**
	Issuing District Office: 6-0	Application No.: 226530
	District Contact No.: (610) 205-6790	Account No.:
	Municipalities: East Bradford Township	Permit Fee: $ 80.00

Immediately upon completion of the work Permittee shall notify the permit office where application was made. Subject to all the conditions, agreements, restrictions, and regulations prescribed by the Pennsylvania Department of Transportation, (see in particular 67 Pa. Code, Chapter 212, 441 and 459 and State Highway Law, 36 P.S. Section 670 - 411, 420 and 421) and subject to the plans, special conditions, or restrictions herein set forth or attached hereto. This permit shall be located at the work site and shall be available for inspection by any police officer or Department representative.

Location and Description of Work

Permit No.: **06106222**

1 of 3	State Route #: Segment(s): Offset(s):	0052 From 0170 To 0170 From 0314 To 0615	521: Install Low Volume Driveway
2 of 3	State Route #: Segment(s): Offset(s):	2001 From 0070 To 0070 From 0110 To 0110	101: CONSTRUCT CURB RAMP
3 of 3	State Route #: Segment(s): Offset(s):	2001 From 0070 To 0070 From 0122 To 0122	101: CONSTRUCT CURB RAMP

Permit Conditions

Permit No.: **06106222**

1 of 24	CONTRACTOR MUST NOTIFY THE PENNDOT PRESS OFFICE VIA E-MAIL: bradrudolph@pa.gov; robbriggs@pa.gov; claceymabe@pa.gov. A MINIMUM FIVE WORKING DAYS PRIOR TO THE CLOSING OF TRAVEL LANE(S) ONLY.
2 of 24	NOTIFY THE TRAFFIC MANAGEMENT CENTER AT 610-205-6934 PRIOR TO SETTING UP ANY LANE CLOSURES OR RESTRICTIONS, AND WHEN THE CLOSURE/RESTRICTION IS REMOVED.
3 of 24	CONTACT COUNTY PERMIT INSPECTOR AT LEAST 3 WORK DAYS PRIOR TO START OF WORK AT 484-340-3220.
4 of 24	RESTORATION SECURITY SHALL BE SUBMITTED TO THE DEPARTMENT AT LEAST 30 DAYS PRIOR TO START OF WORK. NO WORK MAY BE PERFORMED UNTIL SECURITY IS APPROVED.
5 of 24	AN INSPECTOR, WHEN AVAILABLE, WILL BE ASSIGNED ON MORE THAN A SPOT INSPECTION BASIS. PERMITTEE WILL BE CHARGED ALL INSPECTION COSTS INCURRED BY THE DEPARTMENT.
6 of 24	THIS PERMIT AUTHORIZES WORK ONLY IN DEPARTMENT HIGHWAY RIGHT OF WAY.
7 of 24	2A COARSE AGGREGATE BACKFILL MATERIAL IS REQUIRED UNDER 67 PA CODE, SECTION 459.8 (g)(2) AND SECTION 703.2 OF PUBLICATION 408.

Highway Occupancy Permit

Permit No.: **06106222**

Permit Conditions	Permit No.: **06106222**
8 of 24	DEPARTMENT MUST BE NOTIFIED IN WRITING TWO WEEKS IN ADVANCE OF PRE-CONSTRUCTION MEETING.
9 of 24	IT IS THE PERMITTEE'S RESPONSIBILITY TO KEEP VEGETATION TRIMMED IN ORDER TO MAINTAIN MINIMUM SIGHT DISTANCE. NO OBJECTS MAY BE PLACED WITHIN THE LINE OF SIGHT.
10 of 24	DEPARTMENT MUST BE NOTIFIED IN WRITING UPON COMPLETION OF WORK.
11 of 24	THE PERMITTEE IS REQUIRED TO USE HOT MIX OR WARM MIX MATERIAL FOR TEMPORARY RESTORATION. COLD MIX WILL BE PERMITTED AT THE DISCRETION OF THE DEPARTMENT. PERMITTEE MUST MAINTAIN A SMOOTH PAVEMENT SURFACE SUITABLE FOR DRIVING FOR THE DURATION OF THE TEMPORARY PAVEMENT.
12 of 24	SHOULDERS MUST BE RESTORED IN ACCORDANCE WITH APPROPRIATE SECTION OF PUB. 408 AND ROADWAY CONSTRUCTION STANDARDS RC-25M.
13 of 24	ACCESS SIGNING AND PAVEMENT MARKINGS MUST BE MAINTAINED BY PERMITTEE.
14 of 24	ALL DISTURBED AREAS OUTSIDE THE PAVEMENT OR SHOULDER SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED BEFORE THE START OF WORK.
15 of 24	NO LANES MAY BE RESTRICTED BETWEEN THE HOURS OF 6:00 AM TO 9:00 AM OR BETWEEN THE HOURS OF 3:00 PM TO 6:00 PM.
16 of 24	DRAINAGE INSTALLED BY THIS PERMIT IS THE RESPONSIBILITY OF THE PERMITTEE TO CONTINUALLY MAINTAIN OR REPLACE.
17 of 24	DRAINAGE INSTALLED BY THIS PERMIT IS THE PRIMARY RESPONSIBILITY OF THE LOCAL GOVERNMENT TO CONTINUALLY MAINTAIN OR REPLACE. LANDOWNER CO-PERMITTEE IS RESPONSIBLE FOR PROVIDING FUNDING TO THE LOCAL GOVERNMENT TO OFFSET FUTURE MAINTENANCE COSTS ASSOCIATED WITH THE PERMITTED DRAINAGE FACILITY(IES).
18 of 24	PERMITTEE IS RESPONSIBLE FOR ENSURING THAT MUD, SILT AND OTHER DEBRIS IS REMOVED FROM VEHICLES AND TIRES (BY POWER WASH, ETC.) BEFORE ENTERING ONTO THE HIGHWAY.
19 of 24	PERMITTEE MAY BE REQUIRED TO PROVIDE DAILY VIRTUAL INSPECTION VIA ELECTRONIC DOCUMENTATION. THIS DOCUMENTATION SHOULD INCLUDE, BUT IS NOT LIMITED TO, PHOTO DOCUMENTATION OF WORK PERFORMED, DAILY LOG OF WORK ACTIVITIES, MATERIAL CERTIFICATIONS, TEST RESULTS, AND OTHER PERTINENT INFORMATION THAT DOCUMENTS PROPER RESTORATION OF THE HIGHWAY. PRIOR TO THE START OF WORK, CONTACT THE DISTRICT PERMIT MANAGER OR COUNTY PERMIT SUPERVISOR FOR SPECIFIC REQUIREMENTS. FAILURE TO PROVIDE THE DOCUMENTATION MAY RESULT IN PENNDOT STOPPING THE WORK, PHYSICALLY CLOSING ACCESS TO THE STATE HIGHWAY, AND/OR REMOVAL AND REPLACEMENT OF WORK.
20 of 24	ALL WORK MUST COMPLY WITH THE GUIDANCE FOR BUSINESSES IN THE CONSTRUCTION INDUSTRY PERMITTED TO OPERATE DURING THE COVID-19 DISASTER EMERGENCY.
21 of 24	PRIOR TO THE START OF WORK, THE CONTRACTOR IS REQUIRED TO PROVIDE THE DEPARTMENT WITH THE NAME OF THE PANDEMIC SAFETY OFFICER.

Highway Occupancy Permit

Permit No.: **06106222**

Permit Conditions	Permit No.: **06106222**
22 of 24	AT THE COMPLETION OF CONSTRUCTION, A CD MUST BE SUBMITTED TO THE PENNDOT COUNTY INSPECTOR WITH AS-BUILT CS-4401 FORMS IN EXCEL FORMAT. ALL MEASUREMENTS MUST BE WITNESSED BY THE PENNDOT COUNTY INSPECTOR. THIS PERMIT CANNOT BE CLOSED OUT UNTIL THE CD IS RECEIVED, AND ALL INVOICES HAVE BEEN PAID.
23 of 24	A FOLLOW-UP SUBMISSION FOR A TRAFFIC SIGNAL PERMIT MUST BE MADE IN THE TSP - TRAFFIC SIGNAL PERMIT SECTION OF EPS. THE FOLLOWING ITEMS MUST BE PROVIDED WITH THE EPS TRAFFIC SIGNAL PERMIT SUBMISSION: A. SCALED PDF OF SIGNAL PERMIT PLAN DIGITALLY OR ELECTRONICALLY SIGNED BY THE MUNICIPALITY; B. PDF OF SYSTEM PERMIT PLAN (IF APPLICABLE) DIGITALLY OR ELECTRONICALLY SIGNED BY THE MUNICIPALITY; C. ELECTRONIC CAD FILES; D. ELECTRONIC SYNCHRO .SYN FILES; E. ONE COMBINED PDF OF THE FOLLOWING: I. COVER LETTER WITH HOP NAME, EPS NUMBER, AND PROPOSED WORK; II. TE-160 FORM AND RESOLUTION; III. TRAFFIC SIGNAL DESIGN STUDY (IF APPLICABLE); IV. PEDESTRIAN STUDY (IF APPLICABLE); V. COST ESTIMATE (IF APPLICABLE); VI. TURNING TEMPLATES (IF APPLICABLE); VII. CLEARANCE CALCULATIONS (IF APPLICABLE; VIII. ADA RAMP PLANS (IF APPLICABLE); IX. ANY OTHER TRAFFIC SIGNAL DESIGN DOCUMENT.
24 of 24	THE COMPLETION OF THE PEDESTRIAN TRAIL, THE CONSTRUCTION OF THE ASSOCIATED ADA RAMPS, CROSSWALK AND ALL OF THE ASSOCIATED TRAFFIC SIGNAL IMPROVEMENTS LOCATED AT THE INTERSECTION OF SR 0052 (LENAPE RD.) & SR 2001 (BIRMINGHAM RD.) MUST BE COMPLETED AS A SECOND PHASE OF CONSTRUCTION. TIME EXTENSIONS MUST BE SUBMITTED, AS NECESSARY TO COMPLETE THE CONSTRUCTION. THE ASSOCIATED CONSTRUTION MUST FOLLOW THE MOST CURRENT PENNDOT SPECIFICATIONS AND STANDARDS.

Acknowledgement of Completion	Yassmin Gramian, P.E.
Permit work has been completed:	Secretary of Transportation
Date:	Kenneth B. McClain
By:	District Executive

APPENDIX J

PADEP AND USACE JOINT PERMIT

Pennsylvania
Department of Environmental Protection

September 23, 2024

Mr. Richard Phifer
East Bradford Township
676 Copeland School Road
West Chester, PA 19380

Re: Water Obstruction and Encroachment
Permit No. E1501224-002
Plum Run Trail
APS No. 1110227, AUTH No. 1478262
East Bradford Township
Chester County

Dear Mr. Phifer:

Enclosed is your State Water Obstruction and Encroachment Permit. Also enclosed is your Section 404 Clean Water Act Pennsylvania State Programmatic General Permit (PASPGP), providing Federal authorization. Please review both permits so that you are aware of the extent of authorization and the conditions that apply to each authorization.

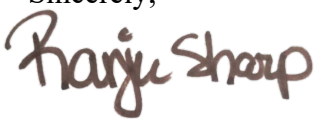
Prior to the commencement of construction, the enclosed *Acknowledgment of Notification of Permit Conditions* must be completed and signed by the permittee and an individual responsible for the supervision or control of the construction work acknowledging and accepting the general and special conditions, if any, contained in the permit. Unless the signed *Acknowledgment of Notification of Permit Conditions* is submitted to this office, the permit is void.

Also, a copy of both the permit and the *Acknowledgment of Notification of Permit Conditions* must be available at the work site for inspection upon request by any officer or agent of DEP or any other Federal, State, County, and Municipal agency.

Finally, the Completion Report form must be signed by you and the supervising engineer indicating that the work has been completed as approved. The Completion Report must be submitted to this office within 30 days of the completion of the approved project.

If you have any questions concerning this matter, please call Mr. Abdel Nassani at the telephone number located in the first page footer.

Sincerely,



Ranjana Chopra Sharp, P.E.
Environmental Program Manager
Waterways and Wetlands

Enclosure

cc: U.S. Army Corps of Engineers - Philadelphia
Mr. Clauser – Clauser Environmental Services Chester County Conservation District
Pennsylania Fish & Boat Commission - South East Region
East Bradford Township
Mr. Hassler
Mr. Suanlarm, P.E.
Re 30 (GJS24WAW)255

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE
WATERWAYS AND WETLANDS

WATER OBSTRUCTION AND ENCROACHMENT PERMIT

The Department of Environmental Protection ("DEP"), established by the Act of December 3, 1970, P.L. 834 (71 P.S. §§ 510–1 et seq.) and empowered to exercise certain powers and perform certain duties under and by virtue of the Act of November 26, 1978, P.L. 1375, as amended by the Act of October 23, 1979, P.L. 204 (32 P.S. §§ 693.1 et seq.) known as the "Dam Safety and Encroachments Act"; Act of October 4, 1978, P.L. 851 (32 P.S. §§ 679.101 et seq.) known as the "Flood Plain Management Act"; Act of June 22, 1937, P.L. 1987 (35 P.S. §§ 691.1 et seq.) known as the "Clean Streams Law"; and the Administrative Code, Act of April 9, 1929, P.L. 177, as amended, which empowers DEP to exercise certain powers and perform certain duties by law vested in and imposed upon the Water Supply Commission of Pennsylvania and the Water and Power Resources Board, hereby issues this permit to:

East Bradford Township
676 Copeland School Road
West Chester, PA 19380

giving its consent to East Bradford Township in proposing to construct and maintain the below-listed water obstruction and encroachment activities associated with the Plum Run Trail & Heritage Area Project. The proposed project is located within the floodway and floodplain of Plum Run (WWF, MF). The proposed project will include the following installation of a 1-mile long segment of the multi-use, 8-foot-wide, asphalt-surfaced, in and along the 100-year floodplain of Plum Run (WWF, MF). The proposed project will include the following:

1. **The construction of a 1-mile long segment of the multi-use, 8-foot wide, asphalt-surfaced trail.**

2. **The construction of a new pedestrian bridge 50 ft long, by 8 ft wide, by 8.3 high, from Outdoor Heritage Center, and amenities from West Chester University to the proposed Strodes Barn Outdoor Heritage Center.**

3. **A 775 sq ft of permanent impacts and 100.7 sq ft of temporary impacts for a proposed pedestrian bridge over Plum Run.**

4. **A 4,720.5 sq ft of permanent floodplain impacts for the trail and access area.**

The project will follow along Tigue Road and SR 52 between Birmingham Road and terminate near the South New Street (West Chester, PA USGS Quadrangle, Latitude: 39.93032; Longitude: -75.61624) in East Bradford Township, Chester County.

The issuance of this permit also constitutes approval of a Water Quality Certification under Section 401 of the Federal Water Pollution Control Act [33 U.S.C.A. 1341(a)].

If this work is not completed on or before the **31st** day of **December** A.D. **2029,** this permit, if not previously revoked or specifically extended by DEP, in writing, shall become void without further notification.

This permit is issued in response to an application filed with DEP on the **25th** day of **March** A.D. **2023,** and with the understanding that the work shall be performed in accordance with the maps, plans, profiles, and specifications filed with and made a part of the application on **August 8, 2024,** subject, however, to the provisions of the Dam Safety and Encroachments Act, the Flood Plain Management Act, the Clean Streams Law, the Administrative Code, the Rules and Regulations promulgated thereunder and the following conditions and restrictions:

1. The permittee shall sign the *Acknowledgement of Notification of Permit Conditions* thereby expressly certifying the permittee's acceptance of, and agreement to comply with, the terms and conditions of this permit. The permittee shall return a signed copy of the *Acknowledgement of Notification of Permit Conditions* to DEP. Unless the *Acknowledgement of Notification of Permit Conditions* form is completed and filed with DEP, this permit is void.

2. DEP, in issuing this permit, has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended, or revoked, in whole or in part, and DEP may, in addition, institute appropriate legal proceedings.

3. This permit does not give any property rights, either in real estate or material, nor any exclusive privileges, nor shall it be construed to grant or confer any right, title, easement, or interest in, to, or over any land belonging to the Commonwealth of Pennsylvania; neither does it authorize any injury to private property or invasion of private rights, nor any infringement of Federal, State, or Local laws or regulations; nor does it obviate the necessity of obtaining Federal assent when necessary.

4. The work shall, at all times, be subject to supervision and inspection by representatives of DEP, and no changes in the maps, plans, profiles, and specifications as approved shall be made except with the written consent of DEP. DEP, however, reserves the right to require such changes or modifications in the maps, plans, profiles, and specifications as may be considered necessary. DEP further reserves the right to suspend or revoke this permit if in its opinion the best interest of the Commonwealth will be subserved thereby.

5. This permit authorizes the construction, operation, maintenance, and normal repair of the permitted structures conducted within the original specifications for the water obstruction or encroachment, and in accordance with the regulations of DEP and terms and conditions of this permit. Any repairs or maintenance involving modifications of the water obstruction or encroachment from its original specifications, and any repairs or reconstruction involving a substantial portion of the structure as defined by regulations of DEP shall require the prior written approval and permit of DEP.

6. Waste materials, scrap, or excess construction materials may not be disposed of in any watercourse, floodway or body of water, but shall be collected, stored, and disposed of in accordance with the Solid Waste Management Act (35 P.S. §§ 6018.101–6018.1003), the Municipal Waste, Planning, Recycling and Waste Reduction Act (53 P.S. §§ 4000.101–4000.1904), the Clean Streams Law (35 P.S. §§ 691.1–691.1001) and related rules and regulations.

7. There shall be no unreasonable interference with the free discharge of the river or stream or navigation during construction.

8. If, in the future, DEP determines that the water obstruction or encroachment causes unreasonable obstruction to the free passage of floodwaters or navigation, the permittee shall, upon due notice remove or alter the water obstruction or encroachment, without expense to the Commonwealth of Pennsylvania, so as to increase the flood carrying capacity of the channel or render navigation reasonably free, easy, and unobstructed, in such manner as DEP may require. No claim shall be made against the Commonwealth of Pennsylvania on account of any such removal or alteration.

9. The permittee shall notify DEP, in writing, of the proposed time for commencement of work at least 15 days prior to the commencement of construction.

10. If construction work has not been completed within the time specified in the permit and the time limit specified in the permit has not been extended, in writing, by DEP or if a permit has been revoked for any reason, the permittee shall, at his own expense and in a manner that DEP may prescribe, remove all or any portion of the work as DEP requires and restore the water course and floodplain to their former condition.

11. The permittee shall fully inform the engineer or contractor, responsible for the supervision and conduct of work, of the terms, conditions, restrictions, and covenants of this permit. Prior to the commencement of construction, the permittee shall file with DEP in writing, on a form provided by DEP, a statement signed by the permittee and an individual responsible for the supervision or conduct of the construction work acknowledging and accepting the general and special conditions contained in the permit. Unless the acknowledgment and acceptance have been filed, the permit is void. A copy of the permit and the acknowledgment shall be available at the work site for inspection upon request by an officer or agent of DEP or another Federal, State, County, or Municipal Agency.

12. The permittee shall operate and maintain the structure or work authorized herein in a safe condition in accordance with the permit terms and conditions and the approved maps, plans, profiles, and specifications.

13. This permit may not be transferred without prior written approval from DEP, such approval being considered upon receipt of the properly executed "Application of Transfer of Permit" form.

14. If and when the permittee desires to discontinue use or abandon the activity authorized herein, he must remove all or part of the structure or work authorized and take other actions as are necessary to protect safety and the environment in accordance with a permit issued by DEP.

15. If the use of explosives in any waterways is required, the permittee shall secure the prior written permit from the Pennsylvania Fish and Boat Commission, pursuant to the Pennsylvania Fish and Boat Code, Act 1980-175 Title 30 Pennsylvania Consolidated Statutes, Section 2906. Requests should be directed to the Pennsylvania Fish and Boat Commission, Division of Environmental Services, 450 Robinson Lane, Bellefonte, Pennsylvania 16823-9616, Telephone: 814.359.5140.

16. Permittee shall implement and monitor the Erosion and Sedimentation Control Plan prepared in accordance with Chapter 102, so as to minimize erosion and prevent excessive sedimentation into the receiving watercourse or body of water.

17. The project site shall, at all times, be available for inspection by authorized officers and employees of the Pennsylvania Fish and Boat Commission. Prior to commencement and upon completion of the work authorized by this permit, the permittee shall notify the Pennsylvania Fish and Boat Commission's Southeast Regional Office, P.O. Box 8, Elm, Pennsylvania 17521, Telephone: 717.626.0228.

18. The project site shall, at all times, be available for inspection by authorized officers and employees of the County Conservation District. Prior to commencement and upon completion of the work authorized by this permit, the permittee shall notify the following:

Chester County Conservation District
688 Unionville Road
Suite 200
Kennett Square, PA 19348
Telephone: 610.925.4920

19. **Work may not commence until a signed copy of the *Acknowledgement of Notification of Permit Conditions* is received by DEP.** Any work authorized by this permit conducted prior to DEP's receipt of a signed copy of the *Acknowledgement of Notification of Permit Conditions* is a violation of the Dam Safety and Encroachments Act and the Clean Streams Law, and you may be subject to fines and penalties pursuant to those Acts.

SPECIAL CONDITIONS

A. All disturbed areas are to be restored to the original contours and shall be replanted with indigenous plant species.

B. Streambank disturbance shall be kept to a minimum and stabilized with indigenous vegetation upon final earthmoving to prevent erosion and provide cover, shading, and food source for aquatic life.

C. Upon discovery of significant changes that could compromise the integrity of the project, the permittee shall immediately notify Pennsylvania DEP's Southeast Regional Office (SERO) at 484.250.5160.

D. To avoid impacts to the Broad-headed skink, the permittee shall adhere to the avoidance measures listed in the PAFBC response letter dated September 21, 2020.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Ranjana Chopra Sharp, P.E.
Environmental Program Manager
Waterways and Wetlands

September 23, 2024
Issue Date

Re 30 (GJS24WAW)255a

bcc: Mr. Nassani
Re 30 (GJS24WAW)255a

PENNSYLVANIA STATE PROGRAMMATIC GENERAL PERMIT – 6
(PASPGP-6)
July 1, 2021

Please note: the full text of the PASPGP-6 may be viewed on the Baltimore District web site at http://www.nab.usace.army.mil/Missions/Regulatory/PermitTypesandProcess.aspx **or by calling the Corps at 814-235-0570**

Permittee: East Bradford Twp.
Date of PASPGP-6 Verification: 9/17/24
State Authorization(s):E1501224-002

Corps District:

☐ **Baltimore District**
U.S. Army Corps of Engineers State College Field Office
1631 South Atherton Street
Suite 101
State College, Pennsylvania 16801-6260
Email: NAB-Regulatory@usace.army.mil

☑ **Philadelphia District**
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East Regulatory Branch
Philadelphia, Pennsylvania 19107-3390
Email: PhiladelphiaDistrictRegulatory@usace.army.mil

☐ **Pittsburgh District**
U.S. Army Corps of Engineers, Regulatory Branch
William S. Moorhead Federal Building, 20th floor
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186
Email: Regulatory.Permits@usace.army.mil

It has been determined that your proposed project, which includes the discharge of dredged and/or fill material and/or the placement of structures into waters of the United States, including wetlands, qualifies for federal authorization under the provisions of Section 404 of the Clean Water Act and /or Section 10 of the River and Harbor Act of 1899, under the terms and conditions of the PASPGP-6.

All activities authorized under PASPGP-6 must comply with all conditions of the authorization, including General, Procedural, and Special Conditions. Failure to comply with all the conditions of the authorization, including project special conditions, will constitute a permit violation and may be subject to criminal, civil, or administrative penalties, and /or restoration.

The authorized activity must be performed in compliance with the following General Conditions to be authorized under PASPGP-6:

General Conditions:

1. Permit Conditions: The permittee shall conduct all work and activities in waters of the United States, including jurisdictional wetlands, in strict compliance with the approved authorization/verification including all final maps, plans, profiles, and design specifications.

2. 401 State Water Quality Certification (SWQC) Conditions: The permittee shall comply with the following conditions unless a project specific SWQC is required as identified below:

    a. Prior to beginning any activity authorized by the Corps under PASPGP-6, the applicant shall obtain from the Department all necessary environmental permits, authorizations or approvals, and submit to the Department environmental assessments and other information necessary to obtain the permits and approvals, as required under state law, including The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Dam Safety and Encroachments Act (32 P.S. §§ 693.1—693.27), the Surface Mining Conservation and Reclamation Act (52 P.S. §§ 1396.1—1396.19b), the Noncoal Surface Mining Conservation and Reclamation Act (52 P.S. §§ 3301—3326), the Bituminous Mine Subsidence and Land Conservation Act (52 P.S. §§ 1406.1—1406.21), the Coal Refuse Disposal Control Act (52 P.S. §§ 30.51—30.66), the Solid Waste Management Act (35 P.S. §§ 6018.101—6018.1003), the Hazardous Sites Cleanup Act (35 P.S. §§ 6020.101—6020.1305), the Land Recycling and Environmental Remediation Standards Act (35 P.S. §§ 6026.101— 6026.908), 58 Pa.C.S. §§ 3201—3274 (related to development), the Air Pollution Control Act (35 P.S. §§ 4001—4015), the Storage Tank and Spill Prevention Act (35 P.S. §§ 6021.101— 6021.2104) and the regulations promulgated thereunder, including 25 Pa. Code Chapters 16, 71, 77, 78, 78a, 86—91, 92a, 93, 95, 96, 102, 105, 106, 127, 245 and 260a—299.

    b. Fill material may not contain any wastes as defined in the Solid Waste Management Act.

    c. Applicants and projects eligible for the PASPGP-6 must obtain all state permits or approvals, or both, necessary to ensure that the project meets the state's applicable water quality standards, including a project-specific SWQC.

Note: As part of PADEP's issuance of 401 SWQC for PASPGP-6 on February 12, 2021, the following was included to clarify the meaning of this condition:

This 401 SWQC is only available for projects that do not require any federal authorization other than authorization from the Corps under Section 404 of the Act or Section 10 of the Rivers and Harbors Act of 1899. Applicants seeking authorization for activities not eligible for coverage under PASPGP-6, or for activities that require another federal authorization (such as an interstate natural gas pipeline, a gas storage field or a nuclear or hydroelectric project requiring authorization by another federal agency), must submit a request to the Department for a project-specific SWQC. The scope of the issuance of this SWQC is related only to the scope and applicability of the proposed PASPGP-6. Any activity or project requiring the Department to

issue 401 SWQC that is beyond the scope of the proposed PASPGP-6 or other programmatically issued SWQC (e.g. Nationwide Permits) will require the applicant to obtain a project-specific SWQC from the Department. This would include any activity or project requiring a SWQC associated with an authorization, permit or license issued by a federal agency, such as Federal Energy Regulatory Commission or Nuclear Regulatory Commission. Such activities or projects include, but are not limited to, an interstate natural gas pipeline, a gas storage field or a nuclear or hydroelectric project.

3. Terms and Conditions Related to Coastal Zone Management Act (CZMA) Certification: For those projects located within Pennsylvania's Coastal Zones, Non-Reporting Activities have General CZMA consistency determination and Reporting Activities must obtain individual CZMA consistency determination (see General Condition 30(b)).

4. Aquatic Life Movements: No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless crossing cannot be used, then culverts should be designed, constructed, and appropriately depressed, if possible, below the stream invert to minimize adverse effects to aquatic life movements.

5. Threatened and Endangered Species: By signing the Pennsylvania Natural Diversity Inventory (PNDI) receipt, the permittee has agreed to comply with all avoidance measures identified by the PNDI receipt. The applicant may also agree in writing to comply with all avoidance measures identified in U.S. Fish and Wildlife Service (USFWS) correspondence, including IPaC, as part of the application. To ensure compliance with the Endangered Species Act (ESA), those avoidance measures associated with federally listed, threatened, or endangered species are a condition of the PASPGP-6 verification, unless modified by the Corps.

If an activity is verified under the PASPGP-6, and a federally listed, threatened, or endangered species, or proposed species, is subsequently found to be present, all work must cease, and the Corps and USFWS (or National Marine Fisheries Service (NMFS)) must be notified by telephone immediately (contact information below). The PASPGP-6 verification is automatically suspended without additional notification to the permittee and will not be re-issued until consultation pursuant to Section 7 of the ESA is concluded and adverse effects to federally listed, threatened, endangered, and proposed species are avoided, or incidental take authorization issued.

Furthermore, persons have an independent responsibility under Section 9 of the ESA to avoid any activity that could result in the "take" of a federally listed species.

USFWS:
Pennsylvania Field Office
110 Radnor Rd; Suite 101
State College, PA 16801
office phone: 814 234-4090
fax: 814-234-0748 or 814 206-7452

NMFS:
Ms. Jennifer Anderson
Assistant Regional Administrator
Protected Resources Division NOAA Fisheries
55 Greater Republic Drive
Gloucester, Massachusetts 01930

6. Spawning Areas: The permittee shall comply with all time-of-year-restrictions (see below) associated with spawning areas as set forth by the Pennsylvania Fish and Boat Commission (PFBC) or other designated agency. Discharges or structures in spawning or nursery areas shall not occur during spawning seasons unless written approval is obtained from the PFBC or another designated agency. In addition, work in areas used for other time sensitive life span activities of fish and wildlife (such as hibernation or migration) may necessitate the use of seasonal restrictions for avoidance of adverse impacts to vulnerable species. Impacts to these areas shall be avoided or minimized to the maximum extent practicable during all other times of the year.

Wild Trout	October 1 - December 31
Class A Wild Trout	October 1 - April 1

List of Trout Streams found at:
https://www.fishandboat.com/Fish/PennsylvaniaFishes/Trout/Pages/TroutWaterClassifications.aspx.

7. Shellfish Production: No discharge of dredged and/or fill material and/or the placement of structures may occur in areas of concentrated shellfish production, unless the discharge is directly related to an authorized shellfish harvesting activity.

8. Adverse Effects From Impoundment: If the regulated activity creates an impoundment of water, the adverse effects on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow, including impacts to wetlands, shall be minimized to the maximum extent practicable.

9. Management of High Flows: To the maximum extent practicable, the preconstruction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity,

and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Erosion and Sediment Controls: Appropriate soil erosion and sediment controls, in accordance with state regulations, must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States, including jurisdictional wetlands, during periods of low-flow or no-flow, or during low tides.

11. Suitable Material: No activities, including discharges of dredged and/or fill material or the placement of structures, may consist of unsuitable material (i.e., asphalt, trash, debris, car bodies, etc.). No material discharged shall contain toxic pollutants in amounts that would violate the effluent limitation standards of § 307 of the Clean Water Act (CWA).

12. Temporary Fill and Structures: Temporary fill (i.e., access roads and cofferdams) and structures in waters and/or wetlands authorized by PASPGP-6 shall be properly constructed and stabilized during use to prevent erosion and accretion. Temporary fill in wetlands shall be placed on geotextile fabric laid on existing wetland grade, unless such requirement is specifically waived by the Corps. Whenever possible, rubber or wooden mats should be used for equipment access through wetlands to the project area. Temporary fills and structures shall be removed, in their entirety, to an upland site, and suitably contained to prevent erosion and transport to a waterway or wetland. Temporarily impacted areas shall be restored to their preconstruction contours, elevations, and hydrology, and revegetated with a wetland seed mix that contains non-invasive, native species, to the maximum extent practicable. Unless approved by the Corps, the restoration work must be completed within 30 days of the date the temporary fill/structure is no longer needed.

13. Equipment Working in Wetlands: Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

14. Installation and Maintenance: Any regulated structure or fill authorized by PASPGP-6 shall be properly installed and maintained to ensure public safety.

15. PASPGP-6 Authorization:

    a. PASPGP-6 expires June 30, 2026, unless suspended or revoked.

    b. Verifications of PASPGP-6 expire June 30, 2026, unless the PASPGP-6 permit is suspended, revoked, or the PADEP authorization expires, whichever date occurs sooner. Activities authorized under PASPGP-6 that have commenced construction or are under contract to commence construction will remain authorized provided the activity is completed within 12 month of the date of the PASPGP-6 expiration, modification, or revocation; or until the expiration date of the project specific verification, whichever is sooner.

16. One-Time Use: A PASPGP-6 verification is valid to construct the project, or perform the activity, one time only, except for PASPGP-6 verifications specifically issued for reoccurring maintenance activities.

17. Water Supply Intakes: No regulated activity may occur in the proximity of a public water supply intake and adversely impact the public water supply. In order to minimize the effects of intakes on anadromous fish eggs and larvae, and oyster larvae, intake structures should be equipped with screening (with mesh size no larger than 2 mm) of wedge wire or another material of equal or better performance. Where feasible, intakes should be located away from spawning or nursery grounds, or to minimize the impingement on, or entrainment of, eggs or larvae. In addition, intake velocities should not exceed 0.5 ft/sec.

18. Historic Properties: For all activities verified under a PASPGP-6, upon the unanticipated discovery of any previously unknown historic properties (historic or archeological), all work must cease immediately, and the permittee must notify the State Historic Preservation Officer (SHPO) and the Corps. The Corps will contact the tribes with whom they routinely consult, within 24 hours in accordance with each District's tribal consultation process. PASPGP-6 may be re-verified, and special conditions added if necessary, after an effect's determination on historic properties and/or tribal resources is made, in consultation with the SHPO, the tribes and other interested parties. The PASPGP-6 verification may be modified and/or rescinded for the specific activity if an adverse effect on the historic property cannot be avoided, minimized, or mitigated.

19. Tribal Rights: No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

20. Corps Civil Works Projects: The PASPGP-6 does not authorize any work which will interfere with an existing or proposed Corps Civil Works project, or any Corps-owned or managed property or easement (i.e., flood control projects, dams, reservoirs, and navigation projects), unless specifically approved by the Corps in writing. Pursuant to 33 U.S.C 408, a review by, or permission from the Corps is required for activities that will alter or temporarily or permanently occupy or use a Corps federally authorized Civil Works project. Any activity that requires Section 408 permission and/or review is not authorized by PASPGP-6 until the appropriate Corps office issues the Section 408 permission or completes its review to alter, occupy, or use the Corps Civil Works project, and Corps issues a written PASPGP-6 verification.

21. Navigation: No activity verified under PASPGP-6 may cause more than minimal adverse effect on navigation. No attempt shall be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the activity authorized herein. In addition, activities that require temporary causeways that prohibit continued navigational use of a waterway (i.e., temporary causeways extending greater than ¾ the width across the waterway) shall be removed in their entirety upon completion of their use. Any safety lights and signals prescribed by the U.S. Coast Guard (USCG), through regulation or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States. The permittee understands and agrees that, if further operations by the United States require the removal, relocation, or other alteration, of the

structure or work herein authorized, or if, in the opinion of the Secretary of the Army or an authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

22. Inspections: The permittee shall allow a District Engineer or an authorized representative(s) to make periodic inspections at any time deemed necessary in order to ensure that the work is being performed in accordance with all the terms and conditions of PASPGP-6. The District Engineer may also require post-construction engineering drawings (as-built plans) for completed work.

23. Modifications of Prior Verifications: Any proposed modification of a previously verified Single and Complete project that results in a change in the verified impact to, or use of waters of the United States, including jurisdictional wetlands, must be approved by PADEP, or the Corps if applicable. Corps written approval is required if the prior verification was reviewed by the Corps, or if the proposed modification is a Reporting Activity under PASPGP-6. Project modifications that cause a Single and Complete Project to exceed 0.5 acre of loss of waters of the United States, including jurisdictional wetlands (except those identified in Part II A.2. a. and b.), or greater than 1,000 linear feet of permanent jurisdictional stream loss (except those identified in Part II A.2. a and b.), are not eligible for PASPGP-6 and will be forwarded to the Corps for review under an alternative permit review procedure.

24. Recorded Conservation Instruments: As per Part III.D.27 and Part III.E.8 of this permit, proposed Draft Conservation Instruments may be submitted by the applicant as part of the permit application package for review and approval. When such proposed Conservation Instruments are submitted by the applicant, proof of the recorded deed restriction, conservation easement, or deed restricted open space area shall be forwarded to the appropriate Corps District and appropriate PADEP offices, prior to the initiation of any permitted work, unless specifically waived by the Corps in writing. Conservation Instrument templates can be found at: http://www.nab.usace.army.mil/Missions/Regulatory/PermitTypesandProcess.aspx

25. Property Rights: PASPGP-6 does not obviate the need to obtain other federal, state, or local authorizations required by law, nor does the permit grant any property rights or exclusive privileges or authorize any injury to the property or rights of others.

26. Navigable Waters of the United States (Section 10 Waters):

    In addition to the other general conditions, the following conditions are applicable for activities in the eligible navigable waters of the United States identified in Appendix B:

    a. For aerial transmission lines, the following minimum clearances are required for aerial electric power transmission lines crossing navigable waters of the United States. These clearances are related to the clearances over the navigable channel provided by the

existing fixed bridges, or the clearances which would be required by the USCG for new fixed bridges, in the vicinity of the proposed aerial transmission line. These clearances are based on the low point of the line under conditions producing the greatest sag, taking into consideration temperature, load, wind, length of span, and type of supports as outlined in the National Electric Safety Code:

Nominal System Voltage (kV)	Minimum Additional Clearance (ft.) Above Clearance Required for Bridges
115 and below	20
138	22
161	24
230	26
350	30
500	35
700	42
750-765	45

i. Clearances for communication lines, stream gauging cables, ferry cables, and other aerial crossings must be a minimum of ten feet above clearances required for bridges, unless specifically authorized otherwise by the District Engineer.

ii. Corps regulation ER 1110-2-4401 prescribes minimum vertical clearances for power communication lines over Corps lake projects. In instances where both regulation and ER 1110-2-4401 apply, the greater minimum clearance is required.

b. Encasement: The top of any cable, encasement, or pipeline shall be located a minimum of three feet below the existing bottom elevation of the streambed and shall be backfilled with suitable heavy material to the preconstruction bottom elevation. Where the cable, encasement, or pipeline is placed in rock, a minimum depth of one foot from the lowest point in the natural contour of the streambed shall be maintained. When crossing a maintained navigation channel, the requirements are a minimum of eight feet between the top of the cable, encasement, or pipeline and the authorized depth of the navigation channel. For maintained navigational channels, where the utility line is placed in rock, a minimum depth of two feet from the authorized depth of the navigation channel shall be maintained.

c. As-Built Drawings: Within 60 days of completing an activity that involves an aerial transmission line, submerged cable, or submerged pipeline across a navigable water of the United States (i.e., Section 10 waters), the permittee shall furnish the Corps and National Oceanic and Atmospheric Administration, Nautical Data Branch, N/CS26, Station 7317, 1315 East-West Highway, Silver Spring, Maryland, 20910 with professional, certified as-built drawings, to scale, with control (i.e., latitude/longitude, state plane coordinates), depicting the alignment and minimum clearance of the aerial wires above the mean high water line at the time of survey or depicting the elevations and alignment of the buried cable or pipeline across the navigable waterway.

d. Aids to Navigation: The permittee must prepare and provide for USCG approval, a Private Aids to Navigation Application (CG-2554). The application can be found at: https://media.defense.gov/2017/Nov/20/2001846135/-1/- 1/0/CG_2554.pdf. The completed application must be sent to the appropriate USCG office as indicated below:

i. Baltimore/Philadelphia Districts: Commander Fifth Coast Guard District, 431 Crawford Street, Room 100, Portsmouth, VA 23704-5504, Attn: Mr. Matthew Creelman; by email to Matthew.K.Creelman2@uscg.mil; or by FAX to (757) 398-6303.

ii. Pittsburgh District: Eighth Coast Guard District, Sector Ohio Valley, USCGC Osage, 300 McKown Ln, Sewickley, PA 15143; phone (412) 741-1180

Within 30 days of the date of receipt of the USCG approval, the permittee must provide a copy to the appropriate Corps district office.

27. PADEP Waiver: If the Corps determines a specific activity, which is eligible for a PADEP Non-reporting Waiver, has a significant adverse impact on life, property or important aquatic resources, the Corps may require the owner to modify the activity to eliminate the adverse condition or to obtain a Corps Individual Permit. In accordance with 33 CFR 325.7(a), "The District Engineer may reevaluate the circumstances and conditions of any permit, including regional permits, either on his own motion, at the request of the permittee, or a third party, or as the result of periodic progress inspections, and initiate action to modify, suspend, or revoke a permit as may be made necessary by considerations of the public interest. In the case of regional permits, this reevaluation may cover individual activities, categories of activities, or geographic areas."

28. Corps Water Releases: For projects located downstream of a Corps dam, the permittee should contact the appropriate Corps, Area Engineer Office, to obtain information on potential water releases and to provide contact information for notification of unscheduled water releases. It is recommended that no in-water work be performed during periods of high-water flow velocities. Any work performed at the project site is at the permittee's own risk.

29. State Authorization: The activity must receive state authorization. For the purpose of this requirement, any one of the following is considered as a state authorization:

a. A PADEP Chapter 105 Water Obstruction and Encroachment Permit, including PADEP approved Environmental Assessment pursuant to 25 Pa. Code § 105.15; or

b. A PADEP GP issued pursuant to 25 Pa. Code § §105.441-105.449; or

c. A PADEP approved Environmental Assessment for activities not otherwise requiring a PADEP permit pursuant to 25 Pa. Code § 105.12; or

d. A PADEP Dam Permit, including maintenance or repairs of existing authorized dams, including maintenance dredging; or

e. A PADEP Emergency Permit issued pursuant to 25 Pa. Code § 105.64; or

f. A PADEP permit for the construction of a bridge or culvert which allows for maintenance activities of bridges and culverts; or

g. A PADEP Chapter 105 Dam Safety and Encroachment Enforcement Action.

30. Other Authorizations: Additional federal, state, and/or local authorizations or approvals may be required and where applicable must be secured by the applicant, prior to initiating any discharge of dredged and/or fill material, and/or the placement of structures into waters of the United States, including jurisdictional wetlands. These approvals include, but are not limited to:

    a. A project specific 401 SWQC issued by PADEP or considered waived, consistent with Section 401 of the CWA.

       PADEP has issued 401 SWQC for activities authorized by PASPGP-6 with conditions. See General Condition 2 for conditions and for identification when a project specific 401 SWQC or a waiver thereof is required. If the permittee cannot comply with all of the conditions of the 401 SWQC previously issued for PASPGP-6, then the permittee must obtain a project specific 401 SWQC or waiver for the proposed discharge in order for the activity to be authorized by PASPGP-6. The Corps or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality; and

    b. Reporting Activities located within the designated CZM Areas. Require a CZMA consistency determination issued by PADEP or a presumption of concurrence pursuant to Section 307 of the Federal Coastal Zone Management Act.

       The District Engineer or PADEP may require additional measures to ensure that the authorized activity is consistent with state CAM requirements; and

    c. Fills within the 100-year floodplains. This activity must comply with applicable Federal Emergency Management Agency approved state or local floodplain management requirements.

31. Federal Liability: In issuing this permit and any subsequent activity verification, the federal government does not assume any liability, including but not limited to the following:

    a. Damages to permitted project or users, thereof, as a result of other permitted or unpermitted activities or from natural causes;

    b. Damages to the permitted project or uses, thereof, as a result of current or future activities undertaken by or on behalf of the United States in the public interest;

    c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit;

d. Design or construction deficiencies associated with the permitted work; and

e. Damage claims associated with any future modification, suspension, or revocation of the PASPGP-6.

32. False and Incomplete Information: The Corps may modify or rescind a previously issued project specific verification, if it determines that the original verification was issued based on false, incomplete and/or inaccurate information; or other information becomes available whereby such action is necessary to ensure compliance with other federal laws and regulations.

33. Anadromous Fish Waters: To protect anadromous fish during their migration and spawning, no work can take place in the following anadromous fish waterways listed in the table below from March 15 to June 30 unless approved in writing by the Corps. Questions on the applicability of this condition should be directed to the Corps, Philadelphia District.

Waterway	Downstream extent	Upstream extent	Upstream Latitude (N)	Upstream Longitude (E)
Delaware River in Pennsylvania (including W. Branch)	Rte. 220 Bridge	PA/NY Border	41.999448	-75.359573
Lehigh River and adjacent canals	confluence with Delaware River	500 feet upstream of the Cementon Dam	40.690275	-75.503800
Little Lehigh Creek	confluence with Lehigh River	500 feet upstream of the lowermost dam	40.596318	-75.475570
Hokendauqua Creek	confluence with Lehigh River	State Route 4014 (West Scenic Drive)	40.793273	-75.439262
Bushkill Creek	confluence with Delaware River	500 feet upstream of the lowermost dam	40.694859	-75.212406
Waterway	Downstream extent	Upstream extent	Upstream Latitude (N)	Upstream Longitude (E)
Brodhead Creek	confluence with Delaware River	500 feet upstream of the Stroudsburg Water Co. Dam	41.018667	-75.201063
Bush Kill	confluence with Delaware River	500 feet upstream of Resica Falls	41.111235	-75.095824
Lackawaxen River	confluence with Delaware River	500 feet upstream of the Woolen Mill Dam	40.984304	-75.191569
Dyberry Creek	confluence with Lackawaxen River	Jadwin Dam	41.612088	-75.263391
Darby Creek	Confluence with Delaware River	500 feet upstream of the confluence of Cobbs Creek and Darby Creek	39.907278	-75.255432

Schuylkill River	Fairmount Dam	500 feet upstream of the Bingaman St. Bridge in Reading, Pennsylvania	40.326411	-75.934417
Neshaminy Creek	Confluence with Delaware River	500 feet upstream of the lowermost dam	40.143369	-74.915828

34. Compliance Certification: Each permittee who receives a written PASPGP-6 verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. This certification should indicate if the success of any required permittee-responsible mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits. The signature of the permittee is also required to certify the completion of the activity and mitigation. The completed certification document must be submitted to the District Engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

35. Migratory Birds and Bald and Golden Eagles: The permittee is responsible for ensuring that an action authorized by PASPGP-6 complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the USFWS to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity. The permittee should contact the appropriate local office of the USFWS to determine if such authorizations are required for a particular activity. Information on the conservation of migratory birds and Bald and Golden Eagles can be found at the following USFWS web site: http://www.fws.gov/northeast/pafo/

36. Migratory Bird Breeding Areas: Activities in waters of the United States, including jurisdictional wetlands, that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable. Recommendations pertaining to the conservation of migratory birds can be found at the following USFWS web site: http://www.fws.gov/northeast/pafo/

By Authority of the Secretary of the Army:

LITZ.JOHN.THOMAS.1106467079 Digitally signed by LITZ.JOHN.THOMAS.1106467079
Date: 2021.06.24 16:54:15 -04'00'

_____

John T. Litz
Colonel, U.S. Army
Commander and District Engineer
Baltimore District

PARK.DAVID.CHONGWOO.1044560808 Digitally signed by PARK.DAVID.CHONGWOO.1044560808 Date: 2021.06.14 10:26:03 -04'00'

David C. Park
Lieutenant Colonel, Corps of Engineers
District Commander
Philadelphia District

Andrew J. Short
Colonel, Corps of Engineers
District Engineer
Pittsburgh District

Permit No. E1501224-002

Commonwealth of Pennsylvania
Department of Environmental Protection
Southeast Region – Field Operations
Waterways and Wetlands Program – Dams and Waterways Section

WATER OBSTRUCTION AND ENCROACHMENT PERMIT COMPLETION REPORT

Project Location: 39.93032; -75.61624

County: Chester County

Township: East Bradford Township

Dear_____:

I (We) hereby certify that the work associated with restoring and stabilizing the stream corridor of an Unnamed Tributary to the Neshaminy Creek West Branch

was completed on _____ , in accordance with the plans approved and that all unauthorized obstructions have been removed.

Name: _____
(Type or Print)

Signature: _____

Title: _____

Firm: _____

Date: _____

Return to:

Department of Environmental Protection
Southeast Region – Field Operations
Waterways and Wetlands Program
Dams and Waterways Section
2 East Main Street
Norristown, PA 19401

Permit No: **E1501224-002**

Commonwealth of Pennsylvania
Department of Environmental Protection
Southeast Region – Field Operations
Waterways and Wetlands Program – Dams and Waterways Section

ACKNOWLEDGEMENT OF NOTIFICATION OF PERMIT CONDITIONS

Project Location: 39.93032; -75.61624

County: Chester Co

Township: East Bradford Township

Gentlemen:

Acknowledgement is made that I, _____
(Permittee Name)

and _____
(Name, address, and telephone of individual responsible for supervision of work)

have been notified of and are familiar with the terms and conditions of Permit No. _____

issued to _____ giving its consent to _____
(Permittee) (Work authorized as stated on permit)

Return to:

Department of Environmental Protection
Southeast Region – Field Operations
Waterways and Wetlands Program
Dams and Waterways Section
2 East Main Street
Norristown, PA 19401

_____ _____
(Permittee signature) (Date)

_____ _____
(Signature of individual responsible for supervision of work) (Date)

PASPGP-6 PERMIT COMPLIANCE, SELF-CERTIFICATION - EXAMPLE

PASPGP-6 General Condition 34 requires submittal of a signed certification documenting the completion of the authorized activity and implementation of any required compensatory mitigation. This certification should indicate if the success of any required permittee-responsible mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits. The signature of the permittee is also required to certify the completion of the activity and mitigation. The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later. Below are Corps District mailing and email addresses, and a list of the information to be included as part of the certification submittal.

Project Name: Plum Run Trail Project

Applicant Name: East Bradford Twp.

PADEP Permit: E1501224-002

Date of Issuance: 9/17/2024

County:Chester Co.

Corps Permit Number:

Waterway:

☐ **Baltimore District**
U.S. Army Corps of Engineers State College Field Office
1631 South Atherton Street
Suite 101
State College, Pennsylvania 16801-6260
Email: NAB-Regulatory@usace.army.mil

☑ **Philadelphia District**
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East Regulatory Branch
Philadelphia, Pennsylvania 19107-3390
Email: PhiladelphiaDistrictRegulatory@usace.army.mil

☐ **Pittsburgh District**
U.S. Army Corps of Engineers, Regulatory Branch
William S. Moorhead Federal Building, 20th floor
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222-4186
Email: Regulatory.Permits@usace.army.mil

The following information is required by PASPGP-6 General Condition 34:

- ☐ Date authorized work commenced.
- ☐ Date authorized work completed.
- ☐ Was all work, including any required mitigation, completed in accordance with your PASPGP-6 authorization, explain any deviations?
- ☐ Was compensatory wetland/stream mitigation accomplished through an approved Mitigation Bank and/or In-Lieu fee program, if yes, attach proof of transaction, including resource type and number of credits

Sunoco Pipeline LP

purchased? Was permittee compensatory wetland and/or stream mitigation required, if yes, was the required compensatory mitigation completed in accordance with the permit and mitigation plan requirements?

- Sign and date certification.

APPENDIX K

EXAMPLE INTERPRETIVE PANEL (STRODE'S MILL PANEL)

Strode's Mill

Background: Watercolor drawing of Strode's Mill by John Rubens Smith, Chester County, Pennsylvania, United States, 1810-40, Graphite, ink and watercolor on wove paper. Courtesy of Winterthur Museum (1967.0262), Museum purchase with funds provided by Mrs. A. Duer Irving.

Strode's Mill, located opposite Birmingham Road and known alternatively at various times as Entrikin's Mill or Etter's Mill, is one of Chester County's most historic mills. The mill was constructed to operate as a water-powered grist mill in 1721 by John Willis, George Carter and Samuel Scott. That same year, Willis, Carter and Scott hired George Entrikin, an Irishman, as the first miller. George Entrikin would go on to purchase the mill in 1735. The mill served surrounding farms for almost two centuries, grinding corn and grain into flour, as well as functioning as a saw and cider mill. The mill is famously known to have produced flour that helped feed General George Washington's army during the Revolutionary War.

Richard Strode acquired the mill in 1784 and the Strode family owned and operated the mill until 1893. Water provided by the Plum Run ceased being the mill's power source by around 1907, whereafter the mill equipment was driven by electric power. The mill remained operational until 1967 and was briefly used to grind grain for Pepperidge Farm breads in the 1940's and 1950's. Once the mill was out of production, the structure was purchased and partitioned by locally renowned wildlife artist, Harry J. Waite, to include a private residence and a separate commercial space. The structure served as Waite's art studio and briefly became home to the People's Light and Theatre Company in the early 1970's. In more recent years, the mill has housed the Strode's Mill Art Gallery and framing shop which became renowned for providing framing for Andrew Wyeth's paintings and the Brandywine Museum of Art.

Photograph of Strode's Mill by East Bradford Township, taken in 1985 while under the ownership of Harry J. Waite.

Courtesy of East Bradford Township

Photograph of Strode's Mill by Ned Goode taken in 1958.

Courtesy of Library of Congress

Photograph of Strode's Mill by Frank R. Zebley, taken in 1931 while under the ownership of J. Calvin Etters.

Courtesy of Delaware Public Archives

Photograph of Strode's Mill by Douglas E. Brinton, taken in 1899 while under the ownership of Ellwood M. Worrall.

Courtesy of Chester County History Center

Strode's Mill Through Time:

APPENDIX L

ASBESTOS CLEARANCE LETTER

REPSG
React Environmental
Professional Services Group, Inc.

June 29, 2015

Friends of Strodes Mill
198 Lucky Hill Road
West Chester, PA 19382
Attention: Ms. Linda Kaat
VIA EMAIL: linda.katt@att.net

RE: Asbestos Management Services
998 Lenape Road
West Chester, PA 19382
REPSG Project Number 9728.200.01

Dear Ms. Kaat:

React Environmental Professional Services Group, Inc. (REPSG) has performed the abatement of asbestos-containing materials at the Strodes Mill historic property, located at 998 Lenape Road in West Chester, Pennsylvania (subject property). These asbestos-containing materials were identified by REPSG during a separate asbestos inspection on May 5, 2015.

1.0 ASBESTOS ABATEMENT ACTVITIES

1.1 Asbestos Abatement

REPSG performed the abatement of asbestos-containing materials at the subject property on June 2, 2015. All abatement activities were conducted in accordance with applicable EPA, PADEP, OSHA, NIOSH and local regulations. These materials were identified by REPSG, and are as follows:

Location	Asbestos-Containing Material	Amount
Central Room	Asbestos-containing pipe and pipe fitting insulation	15 Linear Feet

2.0 ASBESTOS AIR MONITORING

Air monitoring services were provided by an independent, Pennsylvania-certified air monitoring firm.

P.O. Box 5377
6901 Kingsessing Avenue, Suite 201
Philadelphia, PA 19142-0377

215 729.3220
215 729.1557 (Fax)
www.repsg.com

The air monitoring performed for this project included the collection of final clearance samples. These samples are required as documentation that air at areas where abatement has been completed does not contain asbestos fibers in excess of the levels determined as acceptable by current NIOSH standards for re-occupancy. The final clearance samples for this project were analyzed on-site by the asbestos project inspector (API) via Phase Contrast Microscopy (NIOSH method 7400).

The analysis of all final clearance samples collected from all areas of abatement indicated that the air at these areas did not contain levels of airborne asbestos fibers in exceedence of the regulatory standards established by NIOSH (below 0.01 fibers per cubic centimeter (f/cc) for areas cleared by PCM analysis). Documentation of all air monitoring performed, including the results of the analysis of final clearance air samples, are included in **Attachment 1**.

3.0 WASTE DISPOSAL

Asbestos-containing wastes generated during this abatement project were transported by Allied Wastes to the IESI Landfill in Bethlehem, Pennsylvania. These materials were disposed of in accordance with applicable regulations governing friable asbestos-containing wastes. A copy of the manifest for these wastes will be forwarded on to the client upon receipt.

Should you have any questions or need any further information, please do not hesitate to contact our office.

Sincerely,
React Environmental Professional Services Group, Inc.

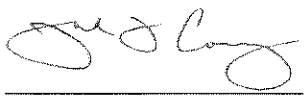
James Romanchek
Project Manager

ATTACHMENT 1: AIR SAMPLING REPORTING

EHS ENVIRONMENTAL, INC.

411 SOUTHGATE COURT, SUITE E • MICKLETON, NJ • 08056
MAIN: 856-224-0080 • FAX: 856-224-0081

ASBESTOS ABATEMENT AIRBORNE SAMPLE ANALYSIS REPORT

CLIENT:	**R.E.P.S.G.** **P.O. Box 5377** **Philadelphia, PA 19142**
LOCATION:	**998 Lenape Road** **West Chester, PA**
PROJECT NUMBER:	**6-15-20091**
CONTACT PERSON:	**Mr. James Romanchek**
DATE OF REPORT:	**June 5, 2015**
REPORT REVIEWED BY:	 **Jack F. Carney, President**

EHS Environmental, Inc.

EXECUTIVE SUMMARY

EHS Environmental, Inc. was contracted by R.E.P.S.G. to provide sample collection and analytical services for airborne asbestos following the removal of specified asbestos containing materials from 998 Lenape Road located in West Chester, Pennsylvania.

This project entailed the removal of approximately 15 linear feet of pipe insulation and pipe fitting insulation from the First Floor. Abatement operations were performed by ACI Tech, Inc. of Marcus Hook, Pennsylvania. EHS was directed to asbestos removal locations by the client.

Results indicate that samples collected following removal activities were below 0.01 Fibers per cubic centimeters of air (F/cc), the current re-occupancy standard utilizing NIOSH Method 7400, Phase Contrast Microscopy for analysis.

METHODS

Asbestos Sampling

Airborne asbestos samples were collected using calibrated equipment and NIOSH recommended sampling procedures. Asbestos fibers were collected on mixed cellulose membrane filters with 0.80 micron pore size mounted in a 3 stage filter cassette. Sample collection was performed in the open face position by drawing a known volume of air through the filter with a calibrated sampling pump. Final air samples were collected utilizing aggressive air sampling techniques.

Asbestos Analysis

Airborne asbestos samples were analyzed per NIOSH Method 7400 using the 'A' counting rules. This method identifies total number of fibers by Phase Contrast Microscopy using 400 x magnifications. This method does not distinguish between asbestos and non-asbestos fibers (i.e., fiberglass, mineral wool, cellulose, etc.). All fibers with a length to diameter ratio of 3 to 1 or greater and a length of greater than 5 microns are considered to be asbestos fibers and are counted as such. The NIOSH Method 7400 requires 5.5 fibers per 100 fields to be counted to be considered "detectable".

Asbestos Standards

OSHA Standard is 0.10 F/cc: (applies to workers inside the work area and work area samples) 0.10 Fibers per cubic centimeters of air (F/cc) averaged over an 8-hour time period.

Clearance Criteria is 0.01 F/cc: (applies to samples collected inside the change room of the decontamination unit, outdoors, outside the work area, and final air samples collected following removal activities).

EHS Environmental, Inc.

AIRBORNE SAMPLING RESULTS

CLIENT: **R.E.P.S.G.**

PROJECT NUMBER: **6-15-20091**

LOCATION: **998 Lenape Road**
West Chester, PA
1st Floor

ACTIVITY: **Final Air Tests**

COLLECTION DATE: **June 2, 2015 - 1st Shift**

SAMPLE#	LOCATION/DESCRIPTION	CONCENTRATION (F/cc)
20091-1	Inside work area - rear of room	<0.002
20091-2	Inside work area - left side of room	<0.002
20091-3	Inside work area - center of room	0.002
20091-4	Inside work area - right side of room	<0.002
20091-5	Inside work area - front of room at entrance	0.003
20091-6	Field Blank	0.0 Fibers/100 Fields
20091-7	Field Blank	0.0 Fibers/100 Fields