

**WETLAND IDENTIFICATION AND
DELINEATION REPORT**

FOR

**PROPOSED U.S. 322 TURNING LANE
IN CONJUNCTION WITH THE
MOSHANNON VALLEY
CORRECTIONAL FACILITY**

**DECATUR TOWNSHIP
CLEARFIELD COUNTY, PENNSYLVANIA**

JANUARY, 2005

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1.0 INTRODUCTION

Gwin, Dobson, and Foreman, Inc., on behalf of Sweetland Engineering Associates Inc., has prepared the following report to document the presence and extent of wetland habitats identified along approximately a 2,000 foot section of U.S. 322 in Decatur Township, Clearfield County, herein referred to as the project area. Wetland boundaries were identified along the northern and southern borders of the project area and flagged with uniquely labeled wetland flagging. A detailed delineation identifying and marking all boundaries and extents of the wetlands was not conducted, as the proposed project will only be addressing the wetland borders near U.S. 322.

This report provides information on the project area's wetland characteristics, including the three criteria; soils, vegetation, and hydrology. The characteristics of the project area and wetlands are further documented with color photographs, provided in Appendix B. Areas investigated during the December 8, 2004 field visit by Gwin, Dobson, and Foreman, Inc. included the northern and southern borders of U.S. 322 extending approximately 1,000 linear feet east and west of Graham Station Road (T-676) and immediately adjacent areas. The proposed project area consists of approximately 2,000 linear feet of asphalt paved roadway (U.S. 322), which is bordered to the north by wetland habitat, Laurel Run, Donaldson/Douglas business and upland habitat; while areas to the south are composed Don Conklin's Salvage Yard, Laurel Run and Little Laurel Run, maintained lawns, and emergent, and scrub shrub roadside vegetation.

The contents of this report are intended to satisfy the regulating agencies needs in reviewing and permitting this project. Additional information on wetlands located within the project area, such as detailed descriptions, functions, and values are discussed in detail within this report.

1.1 Site Location:

The Moshannon Valley Correctional Facility site and proposed turn lane is located within the Laurel Run basin, a tributary to Moshannon Creek in Decatur Township, Clearfield County Pennsylvania (Figure 1. Location Map). The project area is located approximately 1.20 miles northwest of the intersection of SR 53 and U.S. 322 in Phillipsburg, PA. The project beginning is at the intersection of U.S. 322 and T-676 Graham Station Road, and encompasses an area totaling approximately 2,000 linear feet, extending east and west of T-676 for approximately 1,000 feet. Exact coordinates as calculated at the intersection of U.S. 322 and Graham Station Road are as follows: Latitude 40° 54' 50.5"; Longitude 78° 14' 50.1".

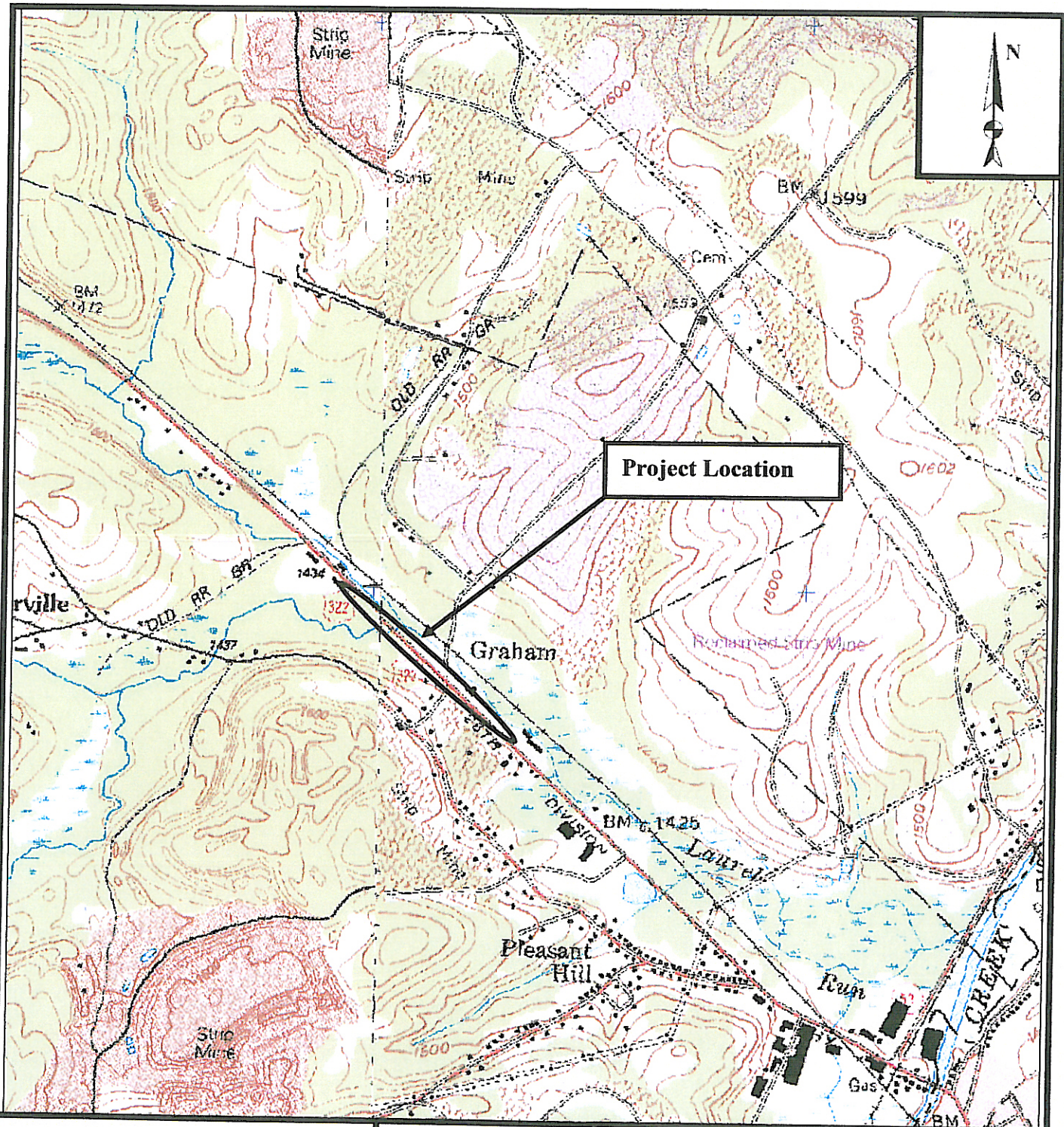
1.2 Site Description:

The aforementioned project and associated areas are located within the Laurel Run Basin. Laurel Run basin is classified by PA DEP as a Cold Water Fishery (CWF) under Pennsylvania Code Title 25 § Chapter 93.91, Water Quality Standards. The PA Fish and Boat Commission does not classify Laurel Run as a wild trout stream, or as a stocked trout stream. Thus, the associated wetlands are not considered high quality or exceptional value based on a connection to classified trout waters.

The habitats dominating the project area includes palustrine wetlands, and portions of Laurel Run. Dominant emergent vegetation consists of various rushes, sedges, grasses, and forbs. Dominant scrub/shrub and forested wetland habitats consist of Silky Dogwood, River Birch, Black Willow, Red Maple, and Speckled Alders. More detailed descriptions of the wetland vegetation are found in Sections 3.0 and 4.0 of this report

Topography adjacent to the project area is nearly level. Slope ranges in the project area from 0 to 3 percent slopes. The road base and portions of the berm area are composed of various structural fill materials presumably overlaying the existing wetland soils which pre-existed throughout the project area. It is evident that human impacts to these wetland areas have occurred through the construction of U.S. 322, and other adjacent transportation routes, the Norfolk-Southern rail road, and various encroachments associated with local business in the area. These man-made structures have caused the wetland discharges to become diked or impounded thereby causing semi-permanently flooded conditions to exist. These wetlands are very extensive and encompass a majority of the valley and floodplain area north and south of the project area. Previous mining activities in the vicinity of the project area have resulted in acid mine drainage impacts to these wetlands, and can be seen throughout the wetland areas.

A diversity of vegetation exists throughout several of the identified wetlands, thereby providing adequate food chain production for various species; shelter and resting habitat; and natural water filtration of sediments and pollutants. Do to the size and location of the wetlands in connection with Laurel Run, adequate floodwater storage is provided by several of these wetlands. Furthermore, the combination of emergent, scrub/shrub, forested and open water wetland areas allows for a diversity of habitats to exist, thereby further enhancing the functional value of several of the identified wetlands, primarily wetlands A, B, and C.



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Source: Delorme Topo
Quad 3-D, 1999,
Philipsburg, PA Quad

Date: December, 2004

Scale: 1" = 1,500'

Project No: 04096

Figure 1: Location Map

Moshannon Valley Correctional Facility
U.S. 322 Proposed Turn Lane

Wetland Identification and Delineation for

Decatur Township, Clearfield County,
Pennsylvania

2.0 METHODOLOGY

2.1 Background Data Collection:

U.S.G.S. topographic quadrangle maps, U.S.D.A. Soil Conservation Service soil survey maps, and National Wetland Inventory maps were reviewed to determine the potential presence of wetlands within the project area. Once this available mapping was reviewed, a field investigation was conducted to determine the presence or absence, and extent of wetland habitats in the proposed project area.

2.2 Field Investigation Procedures:

The project area was investigated for presence or absence, and extent of wetlands on December 8, 2004. Wetland identifications and delineations were conducted in accordance with the guidelines established by the U.S. Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987), which requires the evaluation of soils, vegetation, and hydrology. The Routine-On-Site Determination Method was used due to the homogenous characteristics of the study area. This technique uses a multi-parameter approach, which requires positive evidence of the three main criteria, hydrophytic vegetation, hydric soils, and wetland hydrology.

Classification of wetlands was conducted in accordance to United State Fish and Wildlife Service (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, 1979). The identified wetlands and adjoining upland areas were characterized in the field. Wetland boundaries were marked in the field with uniquely numbered wetland flagging, and mapped. A detailed survey of the wetland boundary flags will be conducted by Sweetland Engineering and Associates Inc. Wetland Determination Forms were completed for each wetland and representative upland locations (Appendix A).

Soils were characterized by evaluating the upper horizons of the soil profile. Soil pits were dug in the wetland and upland area using a "Sharpshooter" spade with a 14-inch blade. Numerous additional soil borings were collected and analyzed using a soil probe. Soil horizons were evaluated using normal field protocols for determining texture and nomenclature. The *Munsell soil Charts* (GretagMacbeth, 2000) were used to determine the colors of horizons and redoximorphic features. The *Soil Survey of Clearfield County, Pennsylvania* (USDA-SCS, 1988) was used for identifying soil types, and verifying field descriptions. The USDA-NRCS website was reviewed to determine if the field verified soil types were listed as national or stated listed hydric soils. Each soil sample was analyzed as per the Federal Manual for field indicators such as presence of organic material, mottling, gleying, Munsell chromas of two or less, saturation, histic epipedons, sulfidic odors, and iron and manganese concretions.

After careful evaluation of vegetation occurring on this site, plant species were identified and plant community composition was determined by an environmental scientist/ecologist. Plant species were assigned an indicator status [e.g., Upland (UPL), Facultative Upland (FACU), Facultative (FAC), Facultative Wetland

(FACW), or Obligate Wetland (OBL)] based on the USFWS's *National List of Plant Species that Occur in Wetlands: 1988 National Summary* (Reed, 1988). Plant community composition consisting of greater than fifty percent (50%) dominant OBL, FACW and FAC species, is considered hydrophytic for the purpose of the wetland classification criteria.

Determination of hydrology during the field investigations was based on visual observations of indicators such as permanent or periodic inundation of the soil, soil saturation in the upper 12 inches, water stained leaves, drift lines, sediment deposition, etc. Other primary and secondary wetland hydrology indicators were recorded if observed. Probe holes were also utilized for subsurface hydrologic observations where surface characteristics were not present.

2.3 Wetland Determination:

A wetland determination was made where criteria for all three (3) parameters were met unless one of the parameters was absent due to seasonal or physical alterations. In cases where one or more of these parameters was absent due to natural, seasonal, or man-made disturbances, a determination was made as to whether the missing parameter(s) would occur under normal circumstances based on other data, field indicators, and best professional judgment. Assessment points were established to document the vegetation, soils, and hydrology at various locations to delineate the wetland/non-wetland boundary. Vegetation, soils, and hydrologic data were recorded on wetland data forms (Appendix A). Qualifications of the wetland investigator and report preparer are located in Section 6.0 of this report.

3.0 DELINEATED WETLAND CHARACTERISTICS

The six (6) wetlands identified within the project areas consist of palustrine wetland systems. There are no unusual or unique conditions associated with the wetlands identified and delineated within the project area.

Based on the field investigations, it was found that a vast majority of the floodplain area adjacent to the project area is composed of wetland habitats. Total area (square feet or acres) of the identified wetlands was not calculated as a full delineation of the wetland boundary extents beyond those areas adjacent to the project area was not conducted. However, it is noted that wetlands A, B, and C, are presumed to be 10 acres or larger in size. In general, the wetland areas serve several environmental and ecological functions. Several of the wetlands adjacent to the project area are capable of filtering sediment and other pollutants from surface water runoff, as well as serving as food sources and food chain production for various aquatic, reptilian, mammalian and bird species; provide resting, nesting, and rearing habitats; provide escape cover; provide recharge to Laurel Run; and provide storm and floodwater storage control. It is to be noted that wetlands D, E, and F, however offer little function and value other minor sediment and pollutant filtering, as these areas are very small and impacted by man-made structures.

3.1 Wetland Mapping:

The U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Map for the Philipsburg, PA quadrangle identifies four (4) wetland habitats adjacent to the project area (Figure 2. NWI Map). Cowardin classifications of these identified wetlands are as follows:

Northern Boundary of the Project Area:

West of Graham Station Road

PFO1/SS1Ch = Palustrine Forested/ Scrub Shrub Broad-Leaved Deciduous, Seasonally Flooded, Diked/Impounded wetland

East of Graham Station Road

PFO1Eh = Palustrine Forested, Broad-Leaved Deciduous, Seasonally Flooded/Saturated, Diked/Impounded wetland

Southern Boundary of the Project Area:

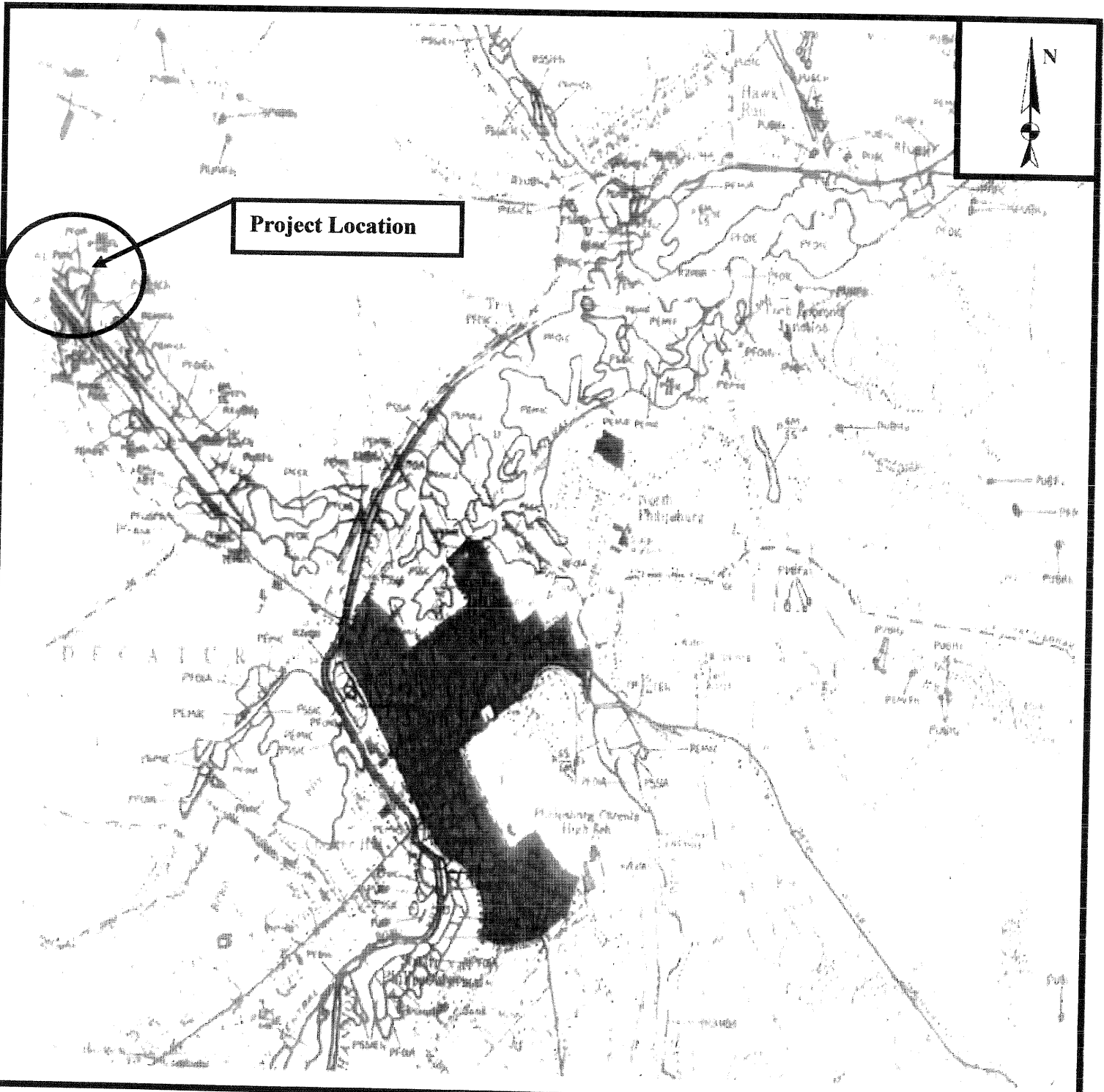
North of US 322

PFO1C = Palustrine Forested, Broad-Leaved Deciduous, Seasonally Flooded wetland

North of US 322

PEM1Ch = Palustrine Emergent, Broad-Leaved Deciduous, Seasonally Flooded, Diked/Impounded wetland

Field verification revealed all four NWI mapped wetlands exist within the project area as shown on the NWI map. However, the two wetlands located along the southern boundary of the project area (wetland C) were delineated as one contiguous wetland for mapping and identification of wetland extent purposes. Detailed discussions of each wetland are discussed later in Section 3. Aside from the NWI mapped wetlands, three (3) additional Palustrine wetlands were identified and delineated in roadside ditches and maintained lawns along the southern boundary of the project area.



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Source: Delorme Topo
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Date: December, 2004

Scale:

Project No: 04096

Figure 2: NWI Map

Moshannon Valley Correctional Facility
U.S. 322 Proposed Turn Lane

Wetland Identification and Delineation for Proposed

Decatur Township, Clearfield County,
Pennsylvania

3.2 Soils:

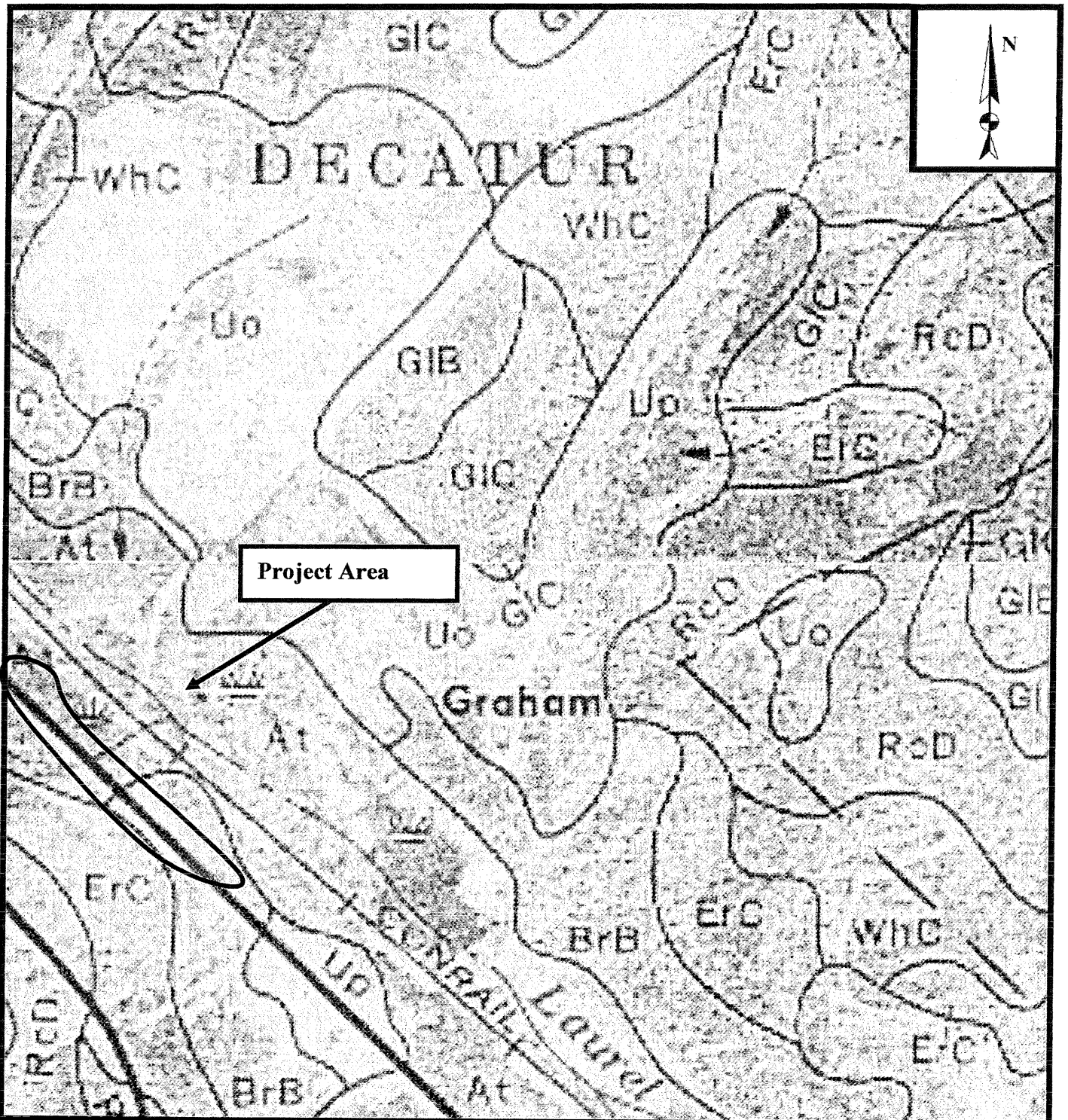
Initial soil investigations involved referencing USDA – Soil Conservation Service *Soil Survey of Clearfield County, Pennsylvania* (1988) to identify the mapped soil types of the project areas. Also the USDA – Natural Resources Conservation Service website (USDA-NRCS <http://soils.usda.gov/use/hydric/>) was searched to determine if the soils within the project area are classified on a national or state wide basis as hydric soils.

Three (3) soil series were found to occur in the immediate vicinity of the project areas. The following soil series identified include: Atkins Silt Loam (At); Brinkerton Silt Loam (BrB), 3 to 8 percent slopes; and Udorthents, smoothed (Up). Of the aforementioned soil series occurring within the project area Atkins Silt Loam and Brinkerton Silt Loam are listed as hydric soils on a national or statewide level, with Udorthents, smoothed having hydric inclusions.

Numerous soil test pits were dug along wetland /upland boundaries to determine the extent of the wetland(s) to depths in excess of eighteen (18) inches, where Munsell soil color charts were used to aid in the determination of presence/absence of hydric soil conditions (i.e. organic material, mottling, gleying, Munsell chromas of two or less, saturation, histic epipedons, sulfidic odors, and iron and manganese concretions). Within the wetland areas, the soils were largely saturated or inundated, and exhibited signs of prolonged reduced conditions having chromas less than 2 and minor mottling. Furthermore, evidence of sediment deposition, drift lines, natural drainage patterns within the wetlands, and water stained leaves were observed throughout. Conversely, soils within the upland areas remained oxidized having higher chromas.

**Table 1
Study Area Soils**

Series Name – Symbol	Mapping Unit	Hydric Conditions (based on Field Investigation)
Atkins Silt Loam (At)	Nearly level, deep, and poorly drained; Slopes are generally smooth and slightly concave; Permeability is slow to moderate, and runoff is very slow. Available water capacity is high. Seasonal high water table is between the surface and a depth of 1 foot.	YES - In the wetland areas: 1) Saturated in upper 12 inches 2) Inundated areas (temporarily and semi-permanently flooded) 3) Low Chroma colors 4) Drift lines, sediment deposition, drainage patterns, & water stained leaves
Brinkerton Silt Loam (BrB) 3-8% slopes	Gently sloping, deep, and poorly drained on uplands; Slopes are smooth and slightly concave; Permeability is moderate above the firm part of the subsoil to moderately slow and slow in the firm part, and runoff is slow; Seasonal high water table is between the surface and a depth of 6 inches	YES – In Wetland Areas: 1) Saturated in upper 12 inches 2) Low Chroma colors 3) Sediment deposition, water stained leaves, and drainage patterns
Udorthents, Smoothed (Up) 0-80% slopes	Nearly level to very steep, well drained to moderately well drained soil on uplands and floodplains; areas have been filled for highway and building construction. Permeability is slow to rapid, available water capacity is low to high, and runoff is slow to very rapid depending on cover.	NO



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Source: USDA-SCS
Soil Survey of
Clearfield CO. 1988

Date: December, 2004

Scale:

Project No: 04069

Figure 3: Soils Map

Moshannon Valley Correctional Facility
U.S. 322 Proposed Turn Lane

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3.3 Vegetation and Hydrology:

The following is a composite species list per wetland area identified in and adjacent to the project area. The indicator status of each species was classified according to the National List of Plant Species That Occur in Wetlands: Northeast (Region I), U.S. Fish and Wildlife Services Biological Report 88(26.1) May 1988. Indicator status classifications have been described in Section 2.2 of this report.

It is to be noted that the primary hydrologic supply to each wetland within the project area is supplied via the Laurel Run, Little Laurel Run, and the seasonal high water table, with additional supplies coming from surface water runoff.

**Table 2
Wetland Summary**

Wetland	Cowardin Classification System	Vegetation Common Name Scientific Name	Soil Series	Hydrology Indicators
A	PFO/SS1Ch	Red Maple Black Willow River Birch Silky Grey Dogwood Steeple Bush Broad Leaf Cattail Speckled Alder Red-Osier Dogwood Arrow-wood	At	Seasonally Flooded Inundated Water Stained leaves Drift lines Drainage patterns
B	PFO1Eh	Silky Grey Dogwood Broad Leaf Cattail Red Maple River Birch Speckled Alder Arrow-wood	At	Saturated/Seasonally flooded Inundated Water stained leaves Drift lines
C	PFO1C and PEM1Ch (combined for identifying wetland extent only)	Silky Grey Dogwood Red Maple Black Willow Speckled Alder Pin Oak White Pine Arrow-wood Broad Leaf Cattail Steeple Bush Joe-Pye Weed Wool Grass Soft Rush Winterberry Reed Canary Grass Silky Grey Dogwood Red Maple	At	Seasonally flooded Saturated Drift Lines Water stained leaves Drainage patterns Sediment Deposition
D	PEM1d	Woolgrass Broad-Leaved Cattail Soft Rush Green Bulrush	At	Saturated Water stained leaves Drainage pattern
E	PEM1d	Broad-Leaved Cattail Soft Rush Steeple Bush Grasses	BrB	Saturated Water stained leaves Drainage pattern
F	PEM1d	Broad-Leaved Cattail Soft Rush Steeple Bush Grasses	BrB	Saturated Water stained leaves Drainage pattern

3.4 Description of Identified Wetland Habitats

Field investigations of the wetland habitats surrounding the project area identified six (6) distinct wetland areas. Routine On-Site data forms documenting each wetland habitat identified are contained in Appendix A. Photographic documentation of representative areas is also included, and can be found in Appendix B. of this report. A wetland map labeled Figure 4 Wetland Map outlines the boundaries of the wetlands within the project area, and correlates their location with existing structures in the project area. A brief description of each wetland follows.

Wetland A is a Palustrine Forested, Scrub/shrub broad-leaved deciduous seasonally flooded, Diked/Impounded (PFO/SS1Ch) wetland located on the north side of U.S. 322 and west of T-676 along Laurel Run from the toe of U.S. 322 fill slope northward across the floodplain. The wetland has been impacted by the construction of U.S. 322, T-676 and presumably encroached by local businesses along the north side of U.S. 322. The PFO/SS1Ch dominant vegetation consists of facultative wet (FACW) tree and shrub species, with various facultative and obligate (OBL) grasses, and forbs. This mostly level wetland is hydrologically supplied by a seasonally high water table, surface water runoff, and Laurel Run.

Wetland B is a Palustrine Forested broad-leaved deciduous, Seasonally Flooded/Saturated, Diked/Impounded (PSS1/EM Ch) wetland located on the north side of U.S. 322 and south of T-676 along Laurel Run. This wetland has been impacted by construction activities of T-676, local businesses, and possible U.S. 322. The dominant vegetation consists of Tree and shrub with few emergent forbs and grasses throughout. This mostly level wetland is hydrologically supplied by a seasonally high water table, surface water runoff, and Laurel Run

Wetland C combines two (2) Palustrine wetland types for the purpose of simply identifying the extent of wetlands present within this section of the project area. Wetland C is composed a Palustrine Forested, broad-leaved deciduous, Seasonally Flooded (PFO1C) wetland; and a Palustrine Emergent Seasonally Flooded, Diked/Impounded (PEM1Ch) wetland located along the southern side of U.S. 322 west of T-676 along Laurel Run extending from the toe of U.S. 322 fill slope south across the floodplain. Wetland C has been impacted by the construction of U.S. 322, along its northern boundary, and by local business along to the west. The dominant vegetation consists of facultative shrub species, and emergent vegetation. This mostly level wetland is hydrologically feed by a seasonally high water table, surface water runoff, and Laurel Run.

Wetland D is a Palustrine Emergent, persistent, seasonally well drained wetland (PEM1d) located along the southern side of U.S. 322. This is a wetland area is lacks vegetative diversity, as it is impacted by human activities (mowing), and is partially restricted by U.S. 322 and upslope topography. The wetland vegetation consists primarily of FACW forbs, and OBL grasses and forbs. This wetland has been partially created by impacts / impoundments associated with the construction activities of U.S. 322 its southern boundary. This wetland is hydrologically feed by a seasonally high water table, and surface water runoff.

Wetland E and F are Palustrine Emergent, persistent, seasonally well drained wetlands (PEM1d) located along the southern side of U.S. 322 primarily within the bank to bank area of the road side ditches. Upslope wetland discharge and surface water runoff provide the hydrology to these wetland areas. The wetland vegetation consists of FACW forbs, and OBL grasses and forbs.

**Table 3
Palustrine Wetland Legend**

Class	Subclasses
RB = Rock Bottom.	1 = Bedrock 2 = Boulder
UB = Unconsolidated Bottom.	1 = Cobble/Gravel 2 = Sand 3 = Mud 4 = Organic
AB = Aquatic Bed.	1 = Submergent Algal 2 = Submergent Vascular 3 = Submergent Moss 4 = Floating-Leaved 5 = Floating 6 = Unknown Submergent 7 = Unknown Surface
ML = Moss / Lichen.	1 = Moss 2 = Lichen
EM = Emergent	1 = Persistent 2 = Nonpersistent 3 = Narrow-leaved Nonpersistent 4 = Broad-leaved Nonpersistent 5 = Narrow-leaved Persistent 6 = Broad-leaved Persistent
SS = Scrub Shrub FO = Forested	1 = Broad-leaved Deciduous 2 = Needle-leaved Deciduous 3 = Broad-leaved Evergreen 4 = Needle-leaved Evergreen 5 = Dead 6 = Deciduous 7 = Evergreen
OW = Open Water	Unknown Bottom
<u>Non-Tidal Water Regime</u>	
A = Temporary	F = Semipermanent
B = Saturated	G = Intermittently Exposed
C = Seasonal	H = Permanent
D = Seasonal Well-drained	J = Intermittently Flooded
E = Seasonal Saturated	K = Artificial
<u>Special Modifiers</u>	
b = Beaver	f = Farmed
d = Partially Drained / Ditched	r = Artificial
	h = Diked
	x = Excavated
	s = Spoil

4.0 CONCLUSIONS AND RECOMMENDATIONS

Based on this wetland identification and delineation investigation of the U.S. 322 segment extending approximately 1,000 linear feet east and west of T-676 Graham Station Road, it appears that wetland impacts are inevitable in the proposed construction of a turn lane. It is to be noted that no high quality or exceptional value wetlands would be impacted. Avoidance and minimization measures shall be reviewed and implemented if practical. It is to be noted that a Chapter 105 Joint Permit for Water Obstruction and Encroachment will most likely be required for this project. It is recommended that the design engineer(s) conduct a meeting with PADEP to determine the exact type of permit(s) required for this project.

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