APPENDIX G—MARTIN STATE AIRPORT WETLAND DELINEATION REPORT

Task 4 - Wetland Inventory

Martin State Airport

Baltimore County, Maryland

Comprehensive Environmental Planning Contract No. MAA-AE-05-004

Prepared for: **Maryland Aviation Administration**
Division of Environmental Planning
P.O. Box 8766
BWI Airport, Maryland 21240-0766

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April, 2006

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Introduction

Vanasse Hangen Brustlin, Inc. (VHB) has been contracted by the Maryland Aviation Administration (MAA) to prepare a wetlands inventory for the property comprising Martin State Airport (MTN), located in Baltimore County near Middle River, Maryland (Figure 1). This inventory represents the first inclusive delineation conducted at MTN, evaluating all portions of the airport property simultaneously. While no specific project is pending, this wetland inventory will serve as a management tool to guide future developments in and around MTN, effectively avoiding and minimizing potential impacts to jurisdictional wetlands and waters of the United States.

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Project Description

MTN is located east of the town of Middle River, Maryland (Figure 1). It lies atop a peninsula within the Chesapeake Bay. The entire airport property of 775 acres constitutes the Study Area and is bounded by the following (Figure 2):

- North and West: the airport proper is bounded by Eastern Boulevard (MD-150), though a 37-acre wooded parcel north of MD-150 and the Amtrak rail line is also owned by the MAA;
- East: Frog Mortar Creek, and;
- South: Stansbury Creek / Wilson Point Road

Site topography generally slopes gently to the south and east from roughly 30 feet MSL near MD-150 to approximately 8 ft MSL along the shoreline. The steepest gradients occur along the Frog Mortar Creek shoreline, where abundant shore-defense structures have been installed.

Methodology

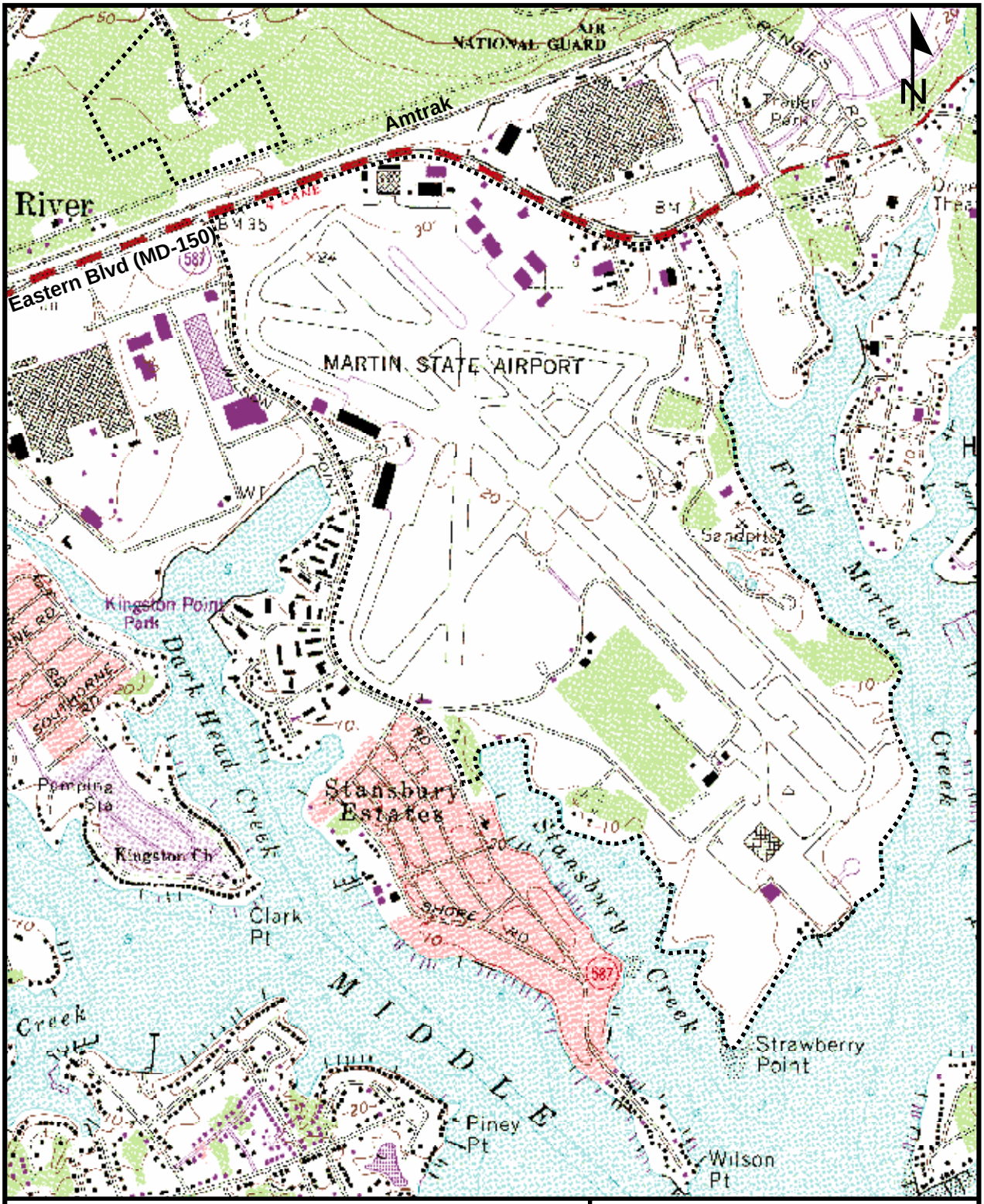
Prior to the initiation of the wetland delineation, scientists reviewed published background information to evaluate the airport property for the presence of wetlands and other surface-water resources, hydric soils, and vegetation. This information included the following:

- Soil Survey of Baltimore County, Maryland (USDA, 1976, 2005a, 2005b);

Figure 1.
Project Area
Martin State Airport

Vanasse Hangen Brustlin, Inc. VHB

Sources: USGS 1996a



Study Area

approximate scale:

0 1500 feet

Figure 2.
Project Boundaries
Martin State Airport

Vanasse Hangen Brustlin, Inc. VHB

Source: USGS 1996b

- USGS 7.5-Minute Series (Topographic) Quadrangle Map, Middle River, MD (USGS, 1996b)
- National Wetland Inventory Map, Middle River, Maryland (USFWS 1982, 2005a),
- Aerial photographs of the airport property (MDOT 2005)
- Wetland Investigation Report for the Martin State Airport Air Traffic Control Tower Relocation, Baltimore County, Maryland (MAA 2001)

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Soils

MTN occurs in the lower coastal plain of Maryland dominated by soil types found within the Sassafras-Woodstown-Fallsington Association and Mattapex-Barclay-Othello Association. These soil associations are commonly located along the eastern side of Baltimore County adjacent to the Chesapeake Bay where they formed from ancient marine sediments and deposits (USDA 1976).

Twelve (12) individual soil mapping units occur on the MTN property (Figure 3). A list of the soils and a brief description of their features are provided below, grouped by their status as hydric, non-hydric, or disturbed. Most of MTN is underlain by disturbed soils.

National, State, and County hydric soil lists are consistent for those soils mapped at MTN (USDA 2005b).

Hydric Soils

- Elkton loam (Em) – is a deep, poorly drained, hydric soil found on nearly level flats. The permeability is slow to very slow in the subsoil, and the seasonal high water table occurs at the surface to within 1 foot of the surface.

- Fallsington sandy loam (Fa) – is a poorly drained, hydric soil found on nearly level flats. The thick subsoil provides for a slow permeability, and a seasonal high water table is usually found within 6 inches of the surface.

- Pocomoke sandy loam (Po) – is a very poorly drained, hydric soil found on flats and in depressions. Sand is the dominant mineral component with small amounts of silt and clay. Permeability is moderate, and the water table is above or at the surface for most of the year.

Em	Elkton loam
Fa	Fallsington sandy loam
FtB	Fort Mott loamy sand
GaB	Galestown loamy sand
LoB	Lenior-Urban land complex
Ma	Made land
MmB	Mattapex-Urban land complex
Po	Pocomoke sandy loam
SnB	Sassafras-Urban land complex
WdA	Woodstown sandy loam
WoA	Woodstown Loam (0-2%)
WoB	Woodstown loam (2-5%)

Study Area

approximate scale:

0 — 1500 feet

Figure 3.
Soils Series Map
Martin State Airport

Vanasse Hangen Brustlin, Inc. VHB

Sources: USDA 1976, 2005a

Non-Hydric Soils

- Fort Mott loamy sand (FtB) – is a well-drained soil found on level to gently sloping uplands in the Coastal Plain. Permeability is rapid due to the sandy texture found throughout the soil profile.

- Galestown loamy sand, 0 – 5 percent slopes (GaB) – is a somewhat excessively drained on level to moderately sloping soil predominately comprised of sand.

- Woodstown sandy loam, 0 – 2 percent slopes (WdA) – The Woodstown soil consists of moderately well drained, nearly level to gently sloping soils in uplands. Hydric inclusions of Fallsington soils are reported to occur in depressions within this soil series.

- Woodstown loam, 0 – 2 percent slopes (WoA) – contains more silt and less sand than the surface layer of WdA, retains moisture and plant nutrients better, and is later to dry and warm. Hydric inclusions of Fallsington soils are reported to occur in depressions within this soil series.

- Woodstown loam, 2 – 5 percent slopes (WoB) – as per WdA, but found on gently sloping terrain. Hydric inclusions of Fallsington soils are reported to occur in depressions within this soil series.

Disturbed Soils

- Lenior-Urban land complex, 0 – 5 percent slopes (LoB) – are somewhat poorly drained soils with a heavy clay subsoil that have been cut, filled, graded, or otherwise disturbed.

- Made land (Ma) – are areas that have been created by man primarily from spoil material from excavations or hydraulic dredging.

- Mattapex-Urban land complex, 0 – 5 percent slopes (MmB) – are soils that have been cut, graded, filled, or otherwise disturbed. Most areas contain fill material over 18 inches deep. Most of the developed portions of MTN are underlain by this soil unit. Hydric inclusions of Othello soils are reported to occur in flats within this soil series.

- Sassafras-Urban land complex, 0 – 5 percent slopes (SnB) – are well-drained, nearly level to gently sloping soils that have been cut, filled, graded, or otherwise disturbed, and typically covered with over 18 inches of fill material.

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National Wetlands Inventory Mapping

A number of wetlands mapped by the National Wetlands Inventory (USFWS 1982, 2005a) are contained within the MTN Study Limits. Most of these wetlands are palustrine, though estuarine wetlands are mapped around Strawberry Point at the southern terminus of the Study Area (Figure 4). Table 1 summarizes these wetlands, their classification, and location.

Table 1.
WETLANDS MAPPED BY THE NATIONAL WETLANDS INVENTORY

Code*	Description	Location
Palustrine Wetlands		
PFO1A	palustrine, forested, broad-leaved deciduous, temporarily flooded	• In parcel north of MD-150 • Forested area at center of airport
PF/SS1C	palustrine, forested / scrub-shrub broad-leaved deciduous, seasonally flooded	• Forested area at center of airport
PEM1KAhs	palustrine, emergent, persistent, artificially flooded, temporarily flooded, diked / impounded, spoil	• Strawberry Point
PUBZ	palustrine, unconsolidated bottom, intermittently exposed / permanent	• Forested area at center of airport • Areas mapped as "sandpits" on Eastern side of MTN **
POWF	palustrine, open water / unknown bottom, semipermanently flooded	• At curve in Wilson Point Road south of Dark Head Creek headwall • In parcel north of MD-150
Estuarine Wetlands		
E2EMP5	estuarine, intertidal, irregularly flooded, mesohaline	• Strawberry Point
E2BBP	estuarine, intertidal, beach-bar, irregularly flooded	• Strawberry Point

Source: USFWS 1982, 2005a

* from *Classification of Wetlands & Deepwater Habitats of the United States,* Cowardin *et al.* 1979

** sandpits reclassified as PUBZ according to USFWS 2005a (were POWZh on USFWS 1982)

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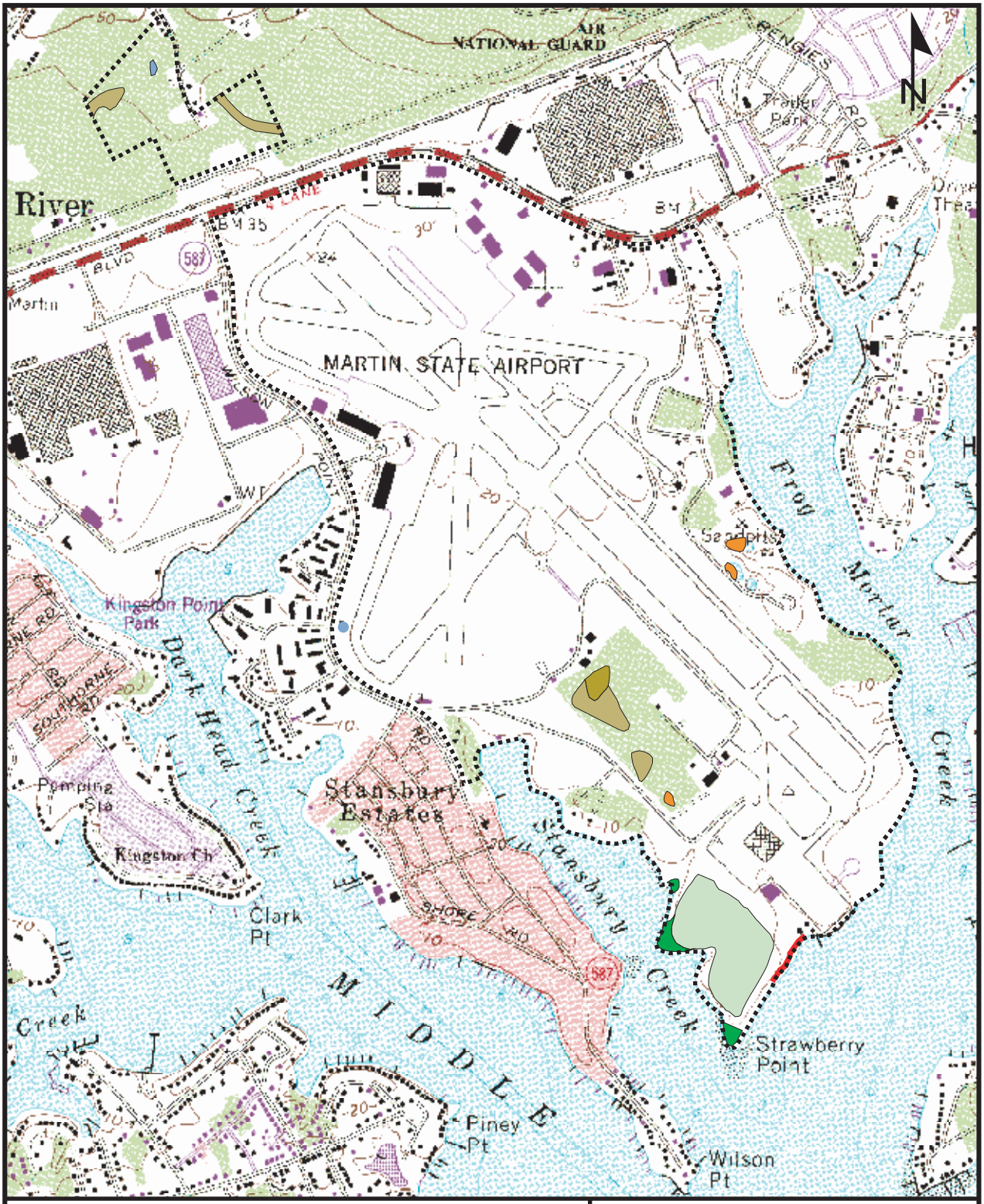
Wetlands Inventory

Where parcel size exceeded 5 acres, the wetland delineation at MTN was performed using the comprehensive method described in Part IV, Section (E) of



Palustrine Wetlands
- PFO1A
- PF/SS1C
- PEM1KAHs
- PUBZ
- POWF

Estuarine Wetlands
- E2EMP5
- E2BBP

Study Area

approximate scale:

0 — 1500 feet

Figure 4.
National Wetlands Inventory Map
Martin State Airport

Vanasse Hangen Brustlin, Inc. VHB

Sources: USFWS 1982, 2005a

the U.S. Army Corps of Engineers (COE) Wetland Delineation Manual (COE 1987, hereafter referred to as the "Manual") and subsequent Corps guidance. This relatively intensive methodology involves the use of observation points along transect lines spaced at varying intervals depending upon the size of the subject tract and the transect baseline established. The interval between observation points was typically 100 feet.

Data collected for each observation point included a description of the soil profile to determine the presence of hydric indicators, notes on the occurrence of any hydrological field indicators, and a record of vegetative composition. All vegetative layers were sampled based on standard plot sizes within each observation point as described below.

- **Trees –** All trees with a diameter at breast height (dbh) greater than 3 inches within a 30-foot radius from the plot center were tallied, noting species and dbh.

- **Saplings/Shrubs –** All saplings/shrubs were tallied by species and height within a radius of 10 feet from the plot center. Saplings and shrubs consisted of all woody stems greater than 3.2 feet in height to a dbh of 3 inches.

- **Herbs –** Both woody and non-woody plants less than 3.2 feet in height within a 3-foot radius from the plot center constituted the herbaceous component of the vegetative sample. The percent aerial coverage of each species was recorded.

- **Vines –** All woody vines greater than 3.2 feet in height within 30 feet of the plot center were tallied simply by number of occurrence.

Where the vegetative community remained unchanged at and between successive observation points, detailed plant sampling was not carried out and reference made to a single representative observation point.

The U.S. Fish and Wildlife Service (USFWS) has assigned an indicator status to most common plants describing the likelihood of their occurrence in wetlands. The 1996 draft edition of the "National List of Plant Species that Occur in Wetlands: Region 1 – Northeast" was consulted to determine the indicator status of plants enumerated at each observation point (USFWS 2005b). Each indicator is defined in Table 2.

Where parcel size was less than 5 acres, a routine determination was carried out, as outlined in Part IV, Section (D) of the Manual. In the interest of site and personnel security, northeastern portions of MTN leased to the Maryland Air National Guard (MANG, see "MANG Area", Figure 5) were subjected to a

cursory examination and verification of a previous delineation confirmed by the COE in February, 2002.

The evaluation of the shoreline and distribution of estuarine wetlands was performed on foot where possible. Where shorelines were inaccessible by foot or where steep conditions or security concerns precluded an onsite investigation, the shoreline was observed from the water with the assistance of the Baltimore County Police Department's Marine Unit.

The wetland delineation took place from 9/19 to 9/22/05, from 10/3 to 10/6/05, and on 3/28/06. All wetland flags were survey-located between 11/1 to 11/3/05 and on 3/28/06 using a Leica Model GS50 backpack Global Positioning System (GPS) receiver and real-time beacon (RTB) antenna having sub-meter accuracy. Wetlands in the MANG area that were not flagged were surveyed by walking their boundary with the GPS unit, or where dense *Phragmites* hindered direct access, mapped using high-resolution aerial photography provided by the MAA (MDOT 2005).

Table 2.
WETLAND PLANT INDICATOR STATUS

Indicator Status	Probability of Occurrence in Wetlands
OBL (Obligate Wetland)	Occur almost always (estimated probability >99%) under natural conditions in wetlands.
FACW (Facultative Wetland)	Usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
FAC (Facultative)	Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
FACU (Facultative Upland)	Usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
UPL (Obligate Upland)	Occur in wetlands in another region, but occur almost always (estimated probability >99%) under natural conditions in non-wetlands in the region specified.
NA	No Agreement
NI	No Indicator
+	Indicates a frequency toward the higher end of the category (*i.e.* more frequently found in wetlands).
-	Indicates a frequency toward the lower end of the category (*i.e.* less frequently found in wetlands).
*	Tentative assignments based on limited information or conflicting review

Source: (USFWS 2005b)

Results

A total of 25 potentially jurisdictional wetland areas were observed and delineated on the Martin State Airport property (Figure 5). Wetlands varied widely in type, from man-made ditches to forested depressions to tidal marshes. To facilitate the discussion of the results, the airport property was subdivided into six geographically discrete tracts generally corresponding to the sequence in which the field investigation proceeded. A description of the wetlands found in each tract is provided in the following sections and they are graphically depicted in Figures 6 through 12 along with tabular data describing their relative size and Cowardin classification. The dominant vegetation encountered in each wetland is summarized in Table 3, organized by stratum with species grouped and color-coded according to their indicator status.

Representative data sheets for each wetland feature and adjoining upland are included in Appendix A, with representative photographs in Appendix B. Data sheets are arranged sequentially by tract number and grouped into wetland and upland data sheets.

■

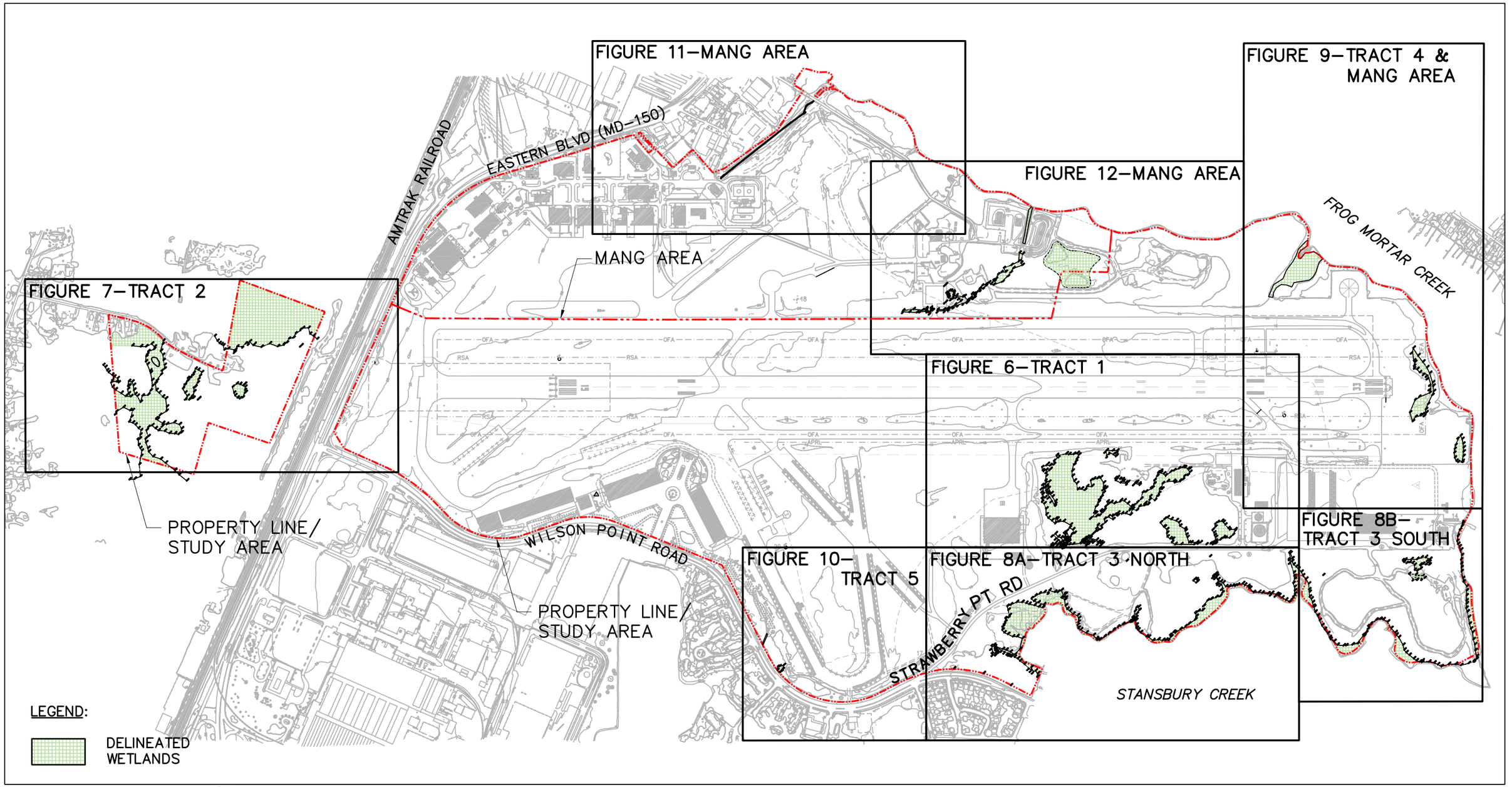
Tract 1

Tract 1 consists of a rectangular section of wooded land just north of Strawberry Point Road (Figures 5 & 6). This area is approximately 25 acres in size and is underlain primarily by the hydric Elkton loam and disturbed Sassafras-Urban Land Complex soils. Five transects and thirty observations points were utilized to perform the delineation and are depicted in Figure 6.

Excessively dry soil conditions in Tract 1 hindered the soils investigation somewhat. Because of routine auger refusal and in consideration of the history of soil disturbance in the area, the delineation was driven in large part by the distribution of hydrophytic vegetation and hydrologic indicators.

Wetlands

Six depressional wetlands occur within the Elkton soil mapping unit (Wetlands A through F, Figure 6). At 7.10 acres, Wetland A is the largest system in Tract 1 and the largest single wetland encountered onsite. It incorporates most of the western half of the tract with a narrow finger extending towards the east (Figure 6). Like all of the wetlands in Tract 1, Wetland A is a palustrine forested, broad-leaved deciduous (PFO1) depression with evidence of standing water as indicated by stained leaves and stain lines on tree trunks (Photo B1).



NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1–3/05 & 3/28/06.

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Figure 5 April 2006

Overview Map
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

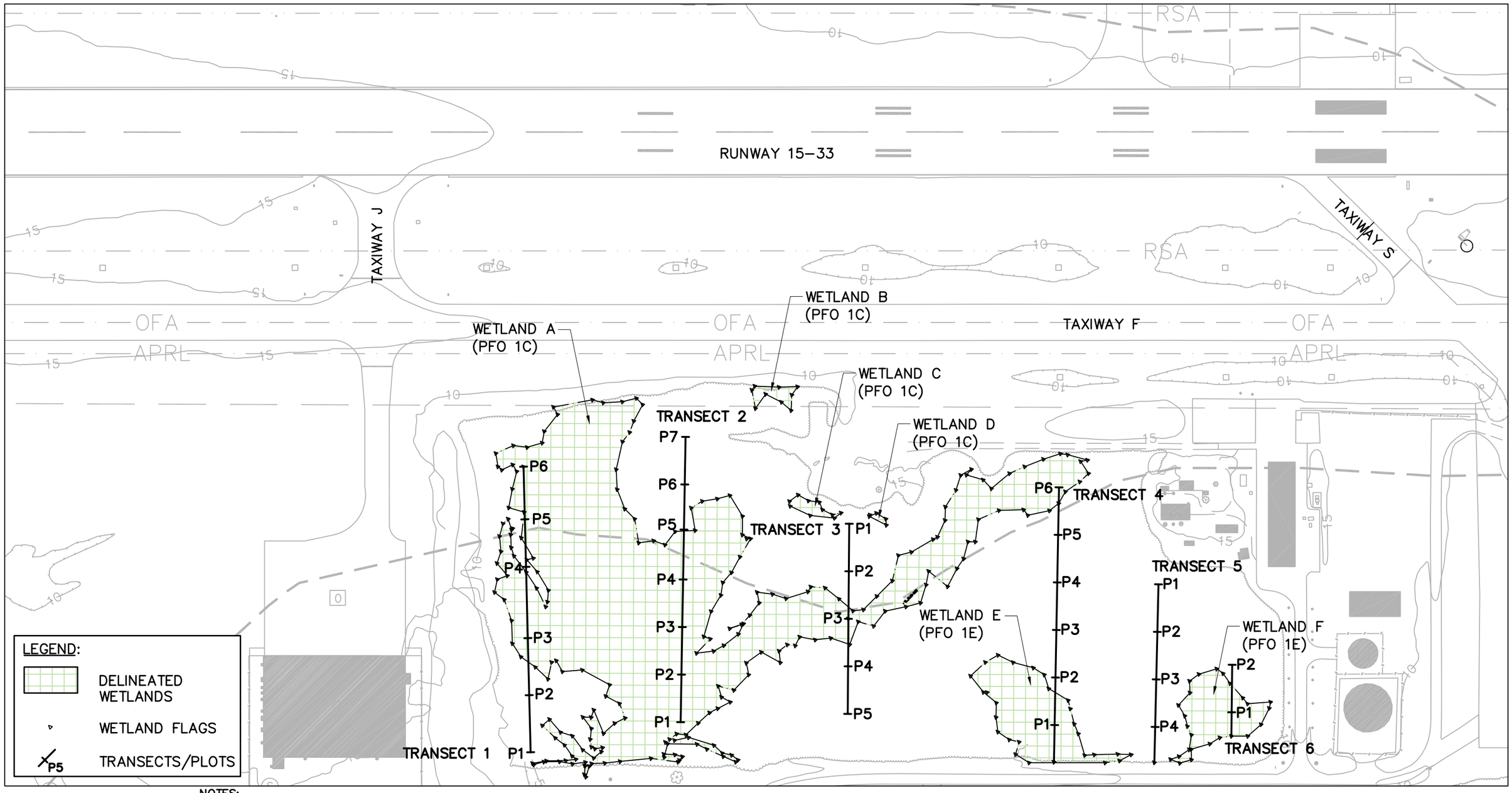
Table 3.30
MARTIN STATE AIRPORT WETLAND INVENTORY:
Dominant Vegetation by Tract

STRATUM	TREES											
INDICATOR STATUS	OBL	FACW+	FACW		FAC+	FAC				FACU	FACU+*	NA
SPECIES	Pond pine (*Pinus serotina*)	Sweetbay magnolia (*Magnolia virginiana*)	Pin oak (*Quercus palustris*)	Green ash (*Fraxinus pennsylvanica*)	Willow Oak (*Quercus phellos*)	Red maple (*Acer rubrum*)	Sweetgum (*Liquidambar straciflua*)	Blackgum (*Nyssa sylvatica*)	Eastern cottonwood (*Populus deltoides*)	Black cherry (*Prunus serotina*)	White oak (*Quercus alba*)	Scarlet oak (*Quercus coccinea*)
Tract 1												
A	●		●		●	●	●					
B							●	●				
C						●	●					
D						●	●					
E					●	●	●	●				
F					●		●	●				
Tract 2												
G					●	●	●					
H	●		●			●	●	●				
I	●	●				●	●	●				
J	●	●				●						
Tract 3												
K				●		●	●					
L												
M						●	●					
N												
O												
P						●	●			●		
Tract 4												
Q												
R												
Tract 5												
S				●			●					
T												
MANG AREA												
U												
V												
W							●					
X												
Y												
UPLAND												
Tract 1						●	●		●	●	●	●

STRATUM	SHRUBS																	
INDICATOR STATUS	OBL		FACW+	FACW					FAC+		FAC*	FAC				FACU		FACU-
SPECIES	Possumhaw viburnum (*Viburnum nudum*)	Buttonbush (*Cephalanthus occidentalis*)	Wild azalea (*Rhodedendron viscosum*)	Cinnamon fern (*Osmunda cinnamonea*)	Highbush blueberry (*Vaccinium corymbosum*)	Eastern baccharis (*Baccharis halimifolia*)	Silky dogwood (*Cornus amomum*)	Swamp dogwood (*Cornus foemina*)	Sweet pepperbush (*Clethra alnifolia*)	Boxelder (*Acer negundo*)	American holly (*Ilex opaca*)	Devil's walking stick (*Aralia spinosa*)	Sweetgum (*Liquidambar straciflua*)	Blackgum (*Nyssa sylvatica*)	Greenbriar (*Smilax rotundifolia*)	Black cherry (*Prunus serotina*)	Blackberry (*Rubus argutus*)	Southern red oak (*Quercus falcata*)
Tract 1																		
A			●	●	●				●						●			
B					●													
C					●										●			
D					●										●			
E			●		●				●						●			
F																		
Tract 2																		
G					●				●						●			
H			●	●	●				●						●			
I	●		●		●				●						●			
J			●						●						●			
Tract 3																		
K								●							●			
L		●				●												
M					●													
N																		
O																		
P													●			●		●
Tract 4																		
Q																		
R																		
Tract 5																		
S							●											
T	J	U	R	I	D	I	C	T	I	O	N	A	L					
MANG AREA																		
U																		
V										●								
W												●					●	
X	J	U	R	I	D	I	C	T	I	O	N	A	L					
Y																		
UPLAND																		
Tract 1					●				●		●	●		●			●	

STRATUM	HERBACEOUS / ETC																	
INDICATOR STATUS	OBL					FACW+			FACW			FAC		FAC-	FACU	FACU+	--	--
SPECIES	Virginia chain fern (*Woodwardia virginica*)	Broadleaf arrowhead (*Sagittaria latifolia*)	Saltmarsh camphor-weed (*Pluchea purpurascens*)	Broad-leaf cattail (*Typha latifolia*)	Narrow-leaf cattail (*Typha angustifolia*)	Woolgrass (*Scirpus cyperinus*)	Soft rush (*Juncus effusus*)	False nettle (*Boehmeria cylindrical*)	Common reed (*Phragmites australis*)	Seaside goldenrod (*Solidago sempervirens*)	Pennsylvania smartweed (*Polygonum pensylvanicum*)	Red maple (*Acer rubrum*)	Switchgrass (*Panicum virgatum*)	Japanese honeysuckle (*Lonicera japonica*)	Bracken fern (*Pteridium aquilinum*)	American pokeweed (*Phytolacca americana*)	*Carex spp.*	*Spaghnum spp.*
Tract 1																		
A																		
B																	●	
C																		
D																		
E																		
F	●																	●
Tract 2																		
G																		
H	●							●									●	●
I																		
J																		
Tract 3																		
K																		
L			●		●					●								
M																		
N									●									
O						●							●					
P												●			●			
Tract 4																		
Q				●		●	●						●					
R				●		●	●						●					
Tract 5																		
S																		
T	D	I	T	C	H													
MANG AREA																		
U									●									
V		●						●			●							
W									●					●		●		
X	D	I	T	C	H				●									
Y									●									
UPLAND																		
Tract 1														●				

Legend:
- Facultative wetland (FACW) or wetter (OBL) plant species
- Facultative (FAC) plant species
- Facultative upland (FACU) or drier (UPL) species
- No agreement, indicator, or species determination



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2. WETLANDS SURVEYED BY VHB 11/1–3/05 & 3/28/06

WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC–SF
A	PFO 1C	7.10–309,345
B	PFO 1C	0.06–2,628
C	PFO 1C	0.05–2,177
D	PFO 1C	0.01–383
E	PFO 1E	0.75–32,594
F	PFO 1E	0.44–19,153

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Figure 6 April 2006

Tract 1
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

Surface water accumulates in the wetland during the wet season, overflows into ditches located at the southwestern corner of the tract, and eventually flows southward underneath Strawberry Point Road.

Wetland B is an isolated depression located along the northeastern edge of Tract 1 and adjacent to the mowed grass associated with the airport taxiway. Wetlands C and D are small, artificial PFO1C wetlands. Wetland C is located at the toe of an area of fill material approximately 4 feet in height. Wetland D appears to be the result of the gouging of the soil surface by a bladed dozer. This area was observed having stained leaves with asphalt, bottles, and other debris intermingled.

Wetlands E and F are seasonally flooded / saturated palustrine forested, broad-leaved deciduous wetlands (PFO1E) with vernal pools at their centers (Figure 6, Photo B2). The outer reaches of the wetlands occur as saturated areas within relatively flat terrain. The portion of the wetland identified as the vernal pool maintains a relatively open understory where standing water occurs during the wet season. Maximum depths range from roughly 4 to 6 inches at Wetland E and 8 to 10 inches at Wetland F. Excess water from Wetland E extends into the Strawberry Point Road right-of-way and into a roadside swale. This water is then conveyed to a culvert underneath the road where the water flows southward to a ditch leading to Stanbury Creek. Overflowing water from Wetland F is captured by a small swale cut between the wetland and Strawberry Point Road and conveyed through a small culvert towards Stansbury Creek.

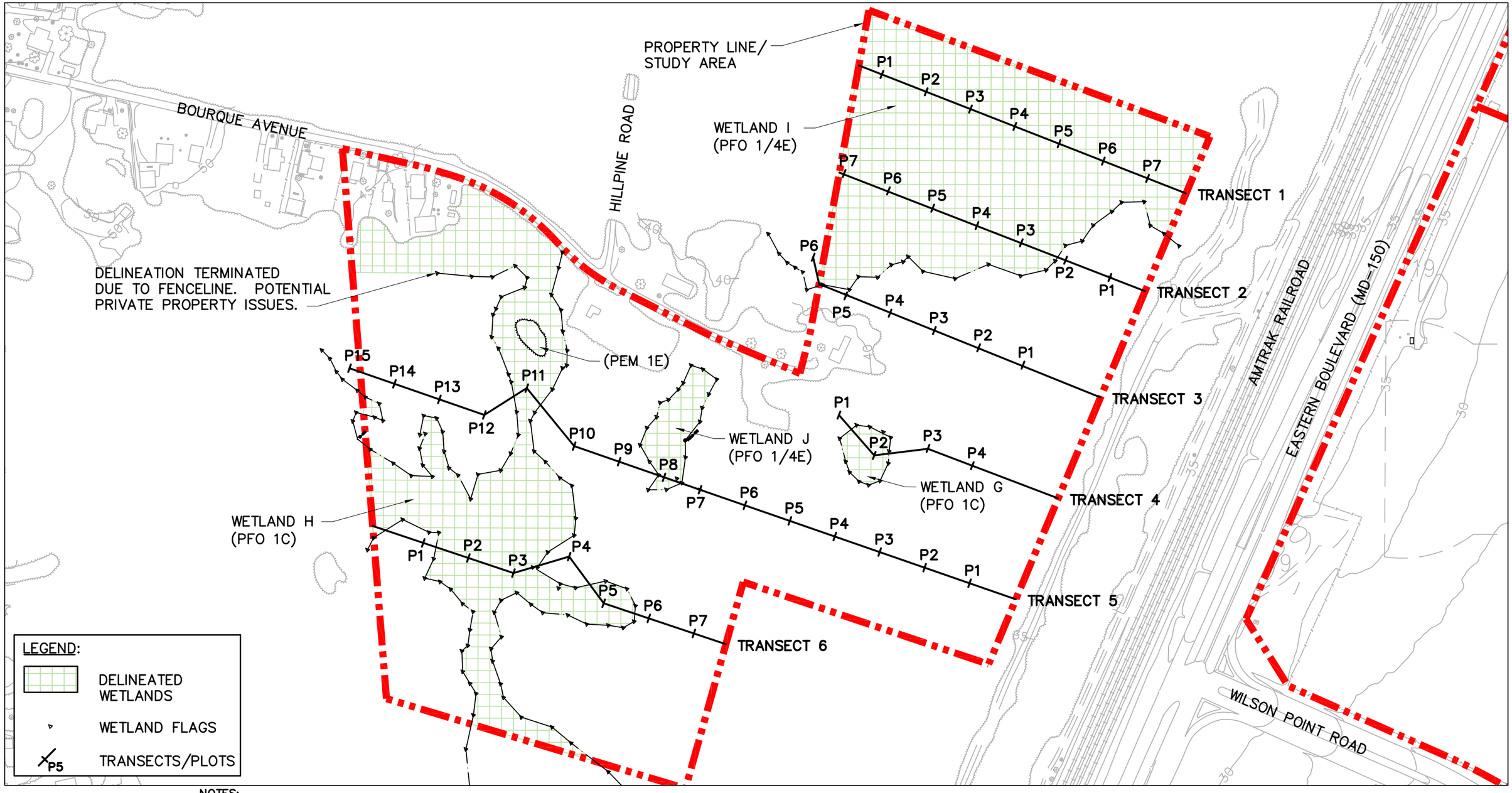
Uplands

Uplands occur within portions of the Elkton and Sassafras-Urban Land Complex mapping units. The north central portion of the site contains a disturbed area with deposited construction debris and concrete rubble. The dominant upland vegetation in Tract 1 is outlined at the bottom of Table 3.

■

Tract 2

Tract 2 is a forested parcel measuring roughly 37 acres in size. It is located on the northern side of Eastern Boulevard and the Amtrak rail line (Figures 5 and 7). The entire site is wooded with the exception of an old lot and house currently overgrown with vines and woody shrubs at the end of Bourque Avenue. Six transects and forty-six observation points were located in Tract 2, resulting in the delineation of four wetlands (Wetlands G through J). These are associated with



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2. WETLANDS SURVEYED BY VHB 11/1-3/05 & 3/28/06

WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC-SF
G	PFO 1C	0.22-9,684
H	PFO 1C	5.01-218,258
I	PFO 1/4E	6.63-288,623
J	PFO 1/4E	0.45-19,540

Vanasse Hangen Brustlin, Inc.

Figure 7 April 2006

Tract 2
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

the Pocomoke and Fallsington hydric soil types. Uplands occur in areas mapped as Woodstown, Fort Mott, and Galestown soils.

Wetland G is a small forested wetland associated with an isolated vernal pool located just southwest of the old home site; a hydric inclusion in the otherwise upland Woodstown soil type, (Figure 7). Wetland J is a similar feature located just north of Wetland G and west of Bourque Avenue. While this wetland occurs as a slight depression in the landscape, it does not retain the deeper features of other vernal pools in the area. Wetland J also has needle-leaf evergreens (pond pine, *Pinus serotina*).

Wetland H is a larger wetland located at the northernmost end of the property, extending west from the intersection of Bourque Avenue and Hillpine Road. This wetland represents a narrow, but relatively flat drainageway across the landscape (Photo B3). One vernal pool inclusion occurs near Bourque Avenue. Excess surface water from the system flows towards the southwest where it feeds a tributary to Dark Head Creek.

Wetland I is a densely forested, deciduous and needle-leaf evergreen wetland in which surface water ponds much of the year (Photo B4).

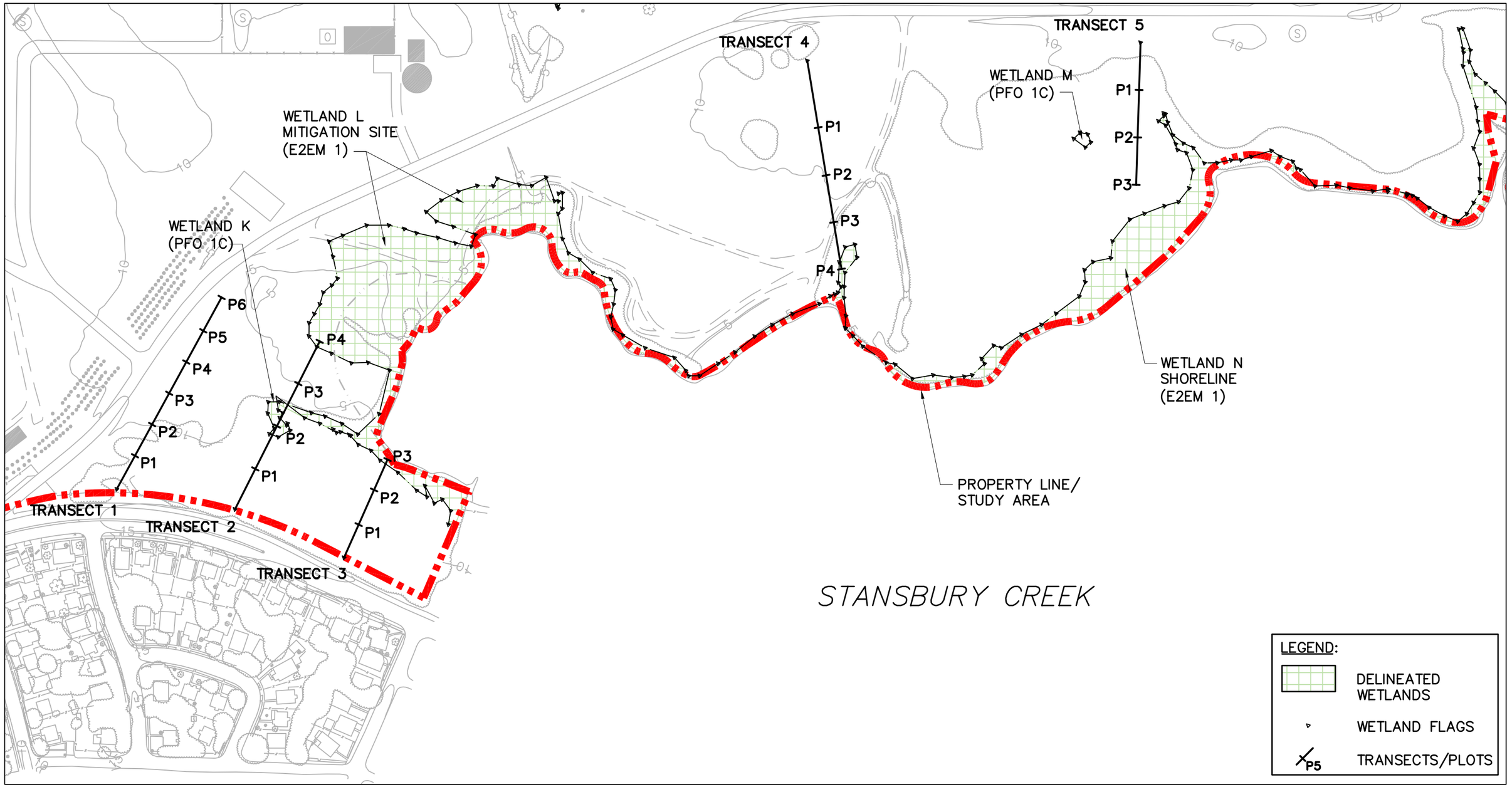
■

Tract 3

Tract 3 covers all of the airport property between Stansbury Creek and Strawberry Point Road (Figures 5, 8A, 8B). Wetlands on this section of land include a restored system functioning as a mitigation site, two small depressions, and the vegetated shoreline. Soils on Tract 3 include Sassafras-Urban Land Complex, Lenior-Urban Land Complex, and old spoil material simply mapped in the soil survey as Made Land (USDA 1976).

Wetland K within Tract 3 is a small depressional feature located between the toe of a slight ridge and a tidal ditch (Figure 8A). During periods of abundant rainfall or high water table, excess overflows into the ditch.

Wetland L is a tidally influenced, emergent wetland mitigation site (Figure 8A, Photo B5). The majority of the wetland is covered with narrow-leaf cattails (*Typha angustifolia*) though many other species were observed along the edge of the system and planted within its boundary (Table 3). It should be noted that the delineation at Wetland L may differ from the wetland limits depicted within annual monitoring reports for permit compliance. In this case, the latter source should be deemed more accurate, as it is based on the compilation of more detailed hydrologic and vegetative monitoring data.



LEGEND:

- DELINEATED WETLANDS
- WETLAND FLAGS
- P5 TRANSECTS/PLOTS

NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1–3/05

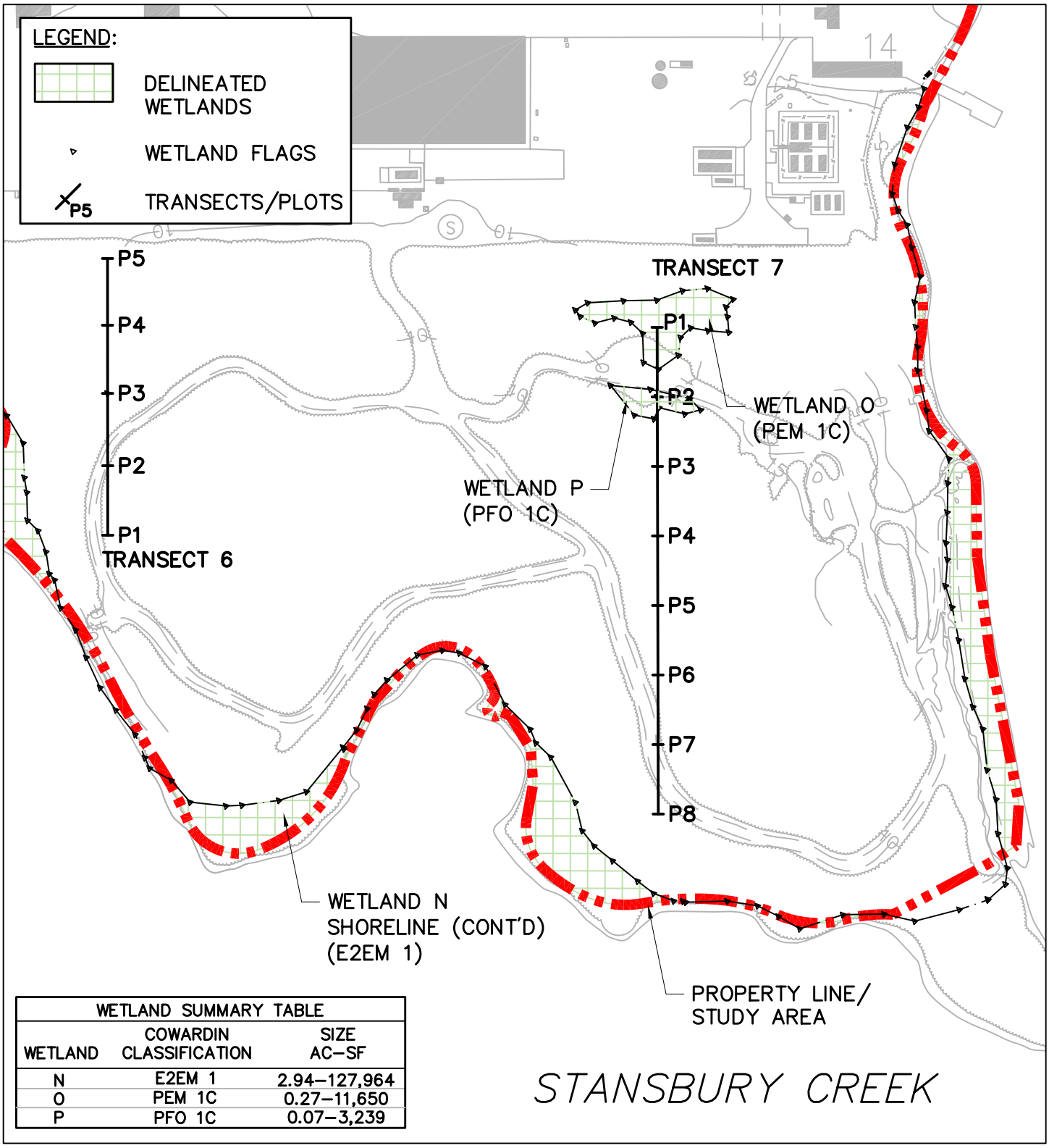
0 100 200 Feet

WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC–SF
K	PFO 1C	0.37–16,042
L	E2EM 1	2.32–101,178
M	PFO 1C	0.01–642
N	E2EM 1	2.94–127,964

Vanasse Hangen Brustlin, Inc.

Figure 8A April 2006

Tract 3 (North Portion)
Martin State Airport
Baltimore County, Maryland
Project # 09246.04



WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC-SF
N	E2EM 1	2.94-127,964
O	PEM 1C	0.27-11,650
P	PFO 1C	0.07-3,239

Vanasse Hangen Brustlin, Inc.

0 100 200 Feet

NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1-3/05 & 3/28/06

Figure 8B April 2006

Tract 3 (South Portion)
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

Wetland M is a small forested wetland located in the center of Tract 3 adjacent to old fill material (Figure 8A). It appears surface runoff is captured within a slight depression abutting the toe of the fill material. The wetland may have inadvertently been created by anthropogenic disturbance.

Wetland N refers to the immediate shoreline of Stanbury Creek associated with a fringe of common reed (*Phragmites australis*) and is thus an estuarine emergent wetland feature (Figures 8A, 8B). Some portions of the shore are lined with rip rap. The *Phragmites* typically occurs as very dense stands just landward of the mean high tide elevation and among the rip rap (Photo B6).

Wetland O occurs as a man-made, isolated depression at the southern end of Tract 3 (Figure 8B). The surrounding landscape of Strawberry Point is characterized by historic fill dirt mounded in a way that allows surface water to slope away from the shoreline and back towards the police station. Runoff eventually makes its way to a low point in the fill mound where a berm is located along the wood line adjacent to the police station. This berm serves to hold the water within a small basin sufficiently wet to encourage the occurrence of emergent hydrophytes (Table 3). Wetland P is a forested extension of Wetland O (Figure 8B), separated from it by an access road.

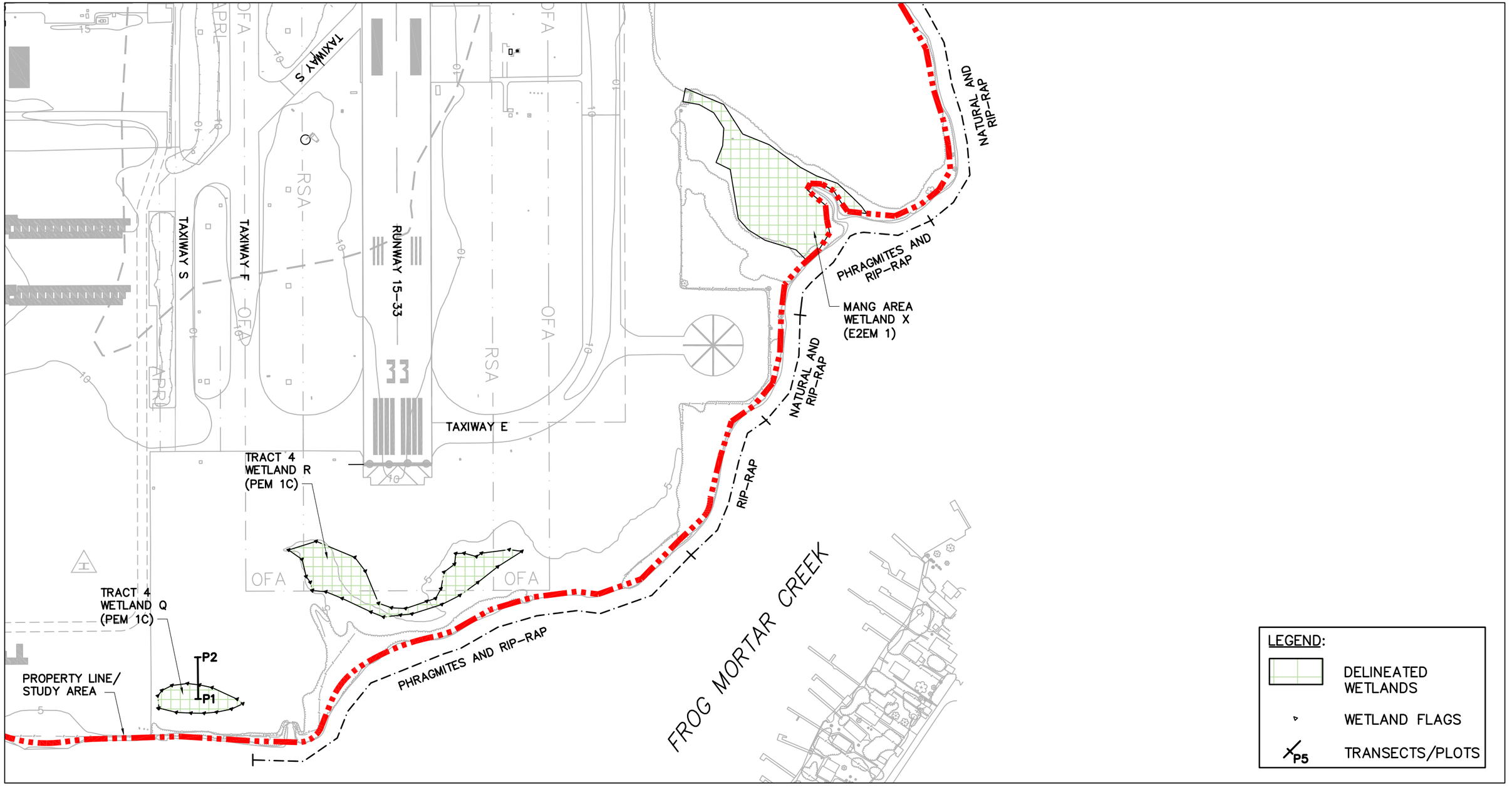
The delineation of Strawberry Point differs appreciably from the NWI mapping (Figure 4). This discrepancy is likely due to the fact that wetlands appearing on NWI maps are often based on photointerpretation, and therefore field-delineated boundaries of these areas can be significantly different than those depicted on NWI maps, especially in areas characterized by heavy vegetation. The tree and shrub strata are dominated by the FACU black cherry (*Prunus serotina*) and FAC sweetgum (*Liquidambar styraciflua*) with occasional stems of the FACU southern red oak (*Quercus falcata*), indicating that upland conditions are prevalent.

■

Tract 4

Tract 4 includes all of the grassed areas adjacent to main runway and taxiways. No wetland areas occur amongst these features. These maintained areas are shaped and contoured to convey runoff to numerous drop inlets where water enters underground pipes for eventual release to various surrounding creeks and ditches.

However, two wetlands (Wetlands Q and R) occur at the far southern end of the main runway, between the concrete terminus and shoreline of Frog Mortar Creek (Figures 5 and 9). Both of these systems have very similar characteristics. The wetlands occur on compacted soils with a shallow gravel base where rainwater



NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1-3/05

0 125 250 Feet

WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC-SF
Q	PEM 1C	0.29-12,769
R	PEM 1C	0.90-39,115
X	E2EM 1	1.53-66,697

Vanasse Hangen Brustlin, Inc.

Figure 9 April 2006

Tract 4 and MANG Area
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

from the concrete runway gathers into very shallow depressions (Photo B7). Between the wetlands and Frog Mortar Creek, a raised gravel road is present which functions as a small berm that helps impound the runoff. This configuration has created the two artificial emergent wetlands totaling 1.19 acres. It is likely that these areas are mowed during dry periods in the summer months.

■

Tract 5

Tract 5 refers to a small strip of land located between Wilson Point Road and the existing T-hangers (Figures 5 and 10). Two very small wetlands occur within this area. Wetland S is sustained by a hillside seep where water sheetflows across a flat, forested area. Surface water reaches the edge of Wilson Point Road where it accumulates in a small swale leading to a culvert underneath the road.

Wetland T is a small drainage ditch approximately 3 to 4 feet wide designed to capture runoff from the hillside and adjacent airplane hangers and convey the water westward towards a culvert underneath Wilson Point Road (Figure 10). The jurisdictional reach of the ditch extends only 20 to 30 feet across the boundary towards the airport from the roadside fence (Photo B8). Standing water was observed at the lower reaches of the ditch next to the road.

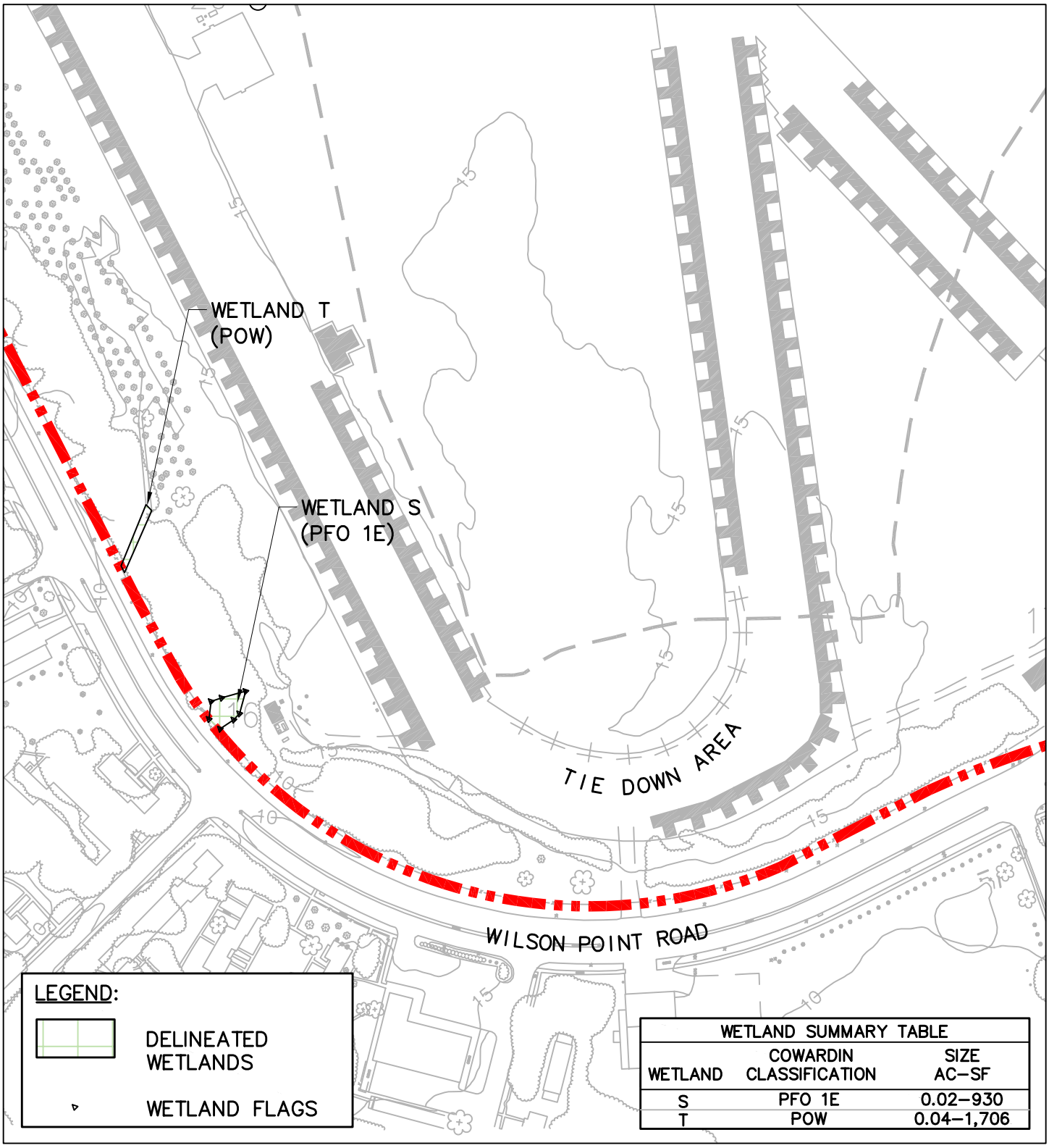
■

MANG Area

Wetlands

The MANG area encompasses all of the land east of the taxiways and runway where MANG facilities are located (Figures 5, 11, and 12). This parcel of land has been developed significantly relative to the west side of MTN. The northernmost portion of the MANG area is occupied by office buildings, parking areas, maintenance facilities, and paved tarmacs. The southern part of the tract is underlain by disturbed soils associated with old spoil and dump sites and is overgrown with a variety of plant communities.

Working from north to south, the first wetland system encountered (Wetland U) is a large drainage ditch that collects and conveys runoff from the surrounding impervious surfaces towards the east and into Frog Mortar Creek (Figure 11, Photo B9). The lower portion of this ditch is presumed to be tidally influenced and giant reed is most common (Photo B10).



WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC–SF
S	PFO 1E	0.02–930
T	POW	0.04–1,706

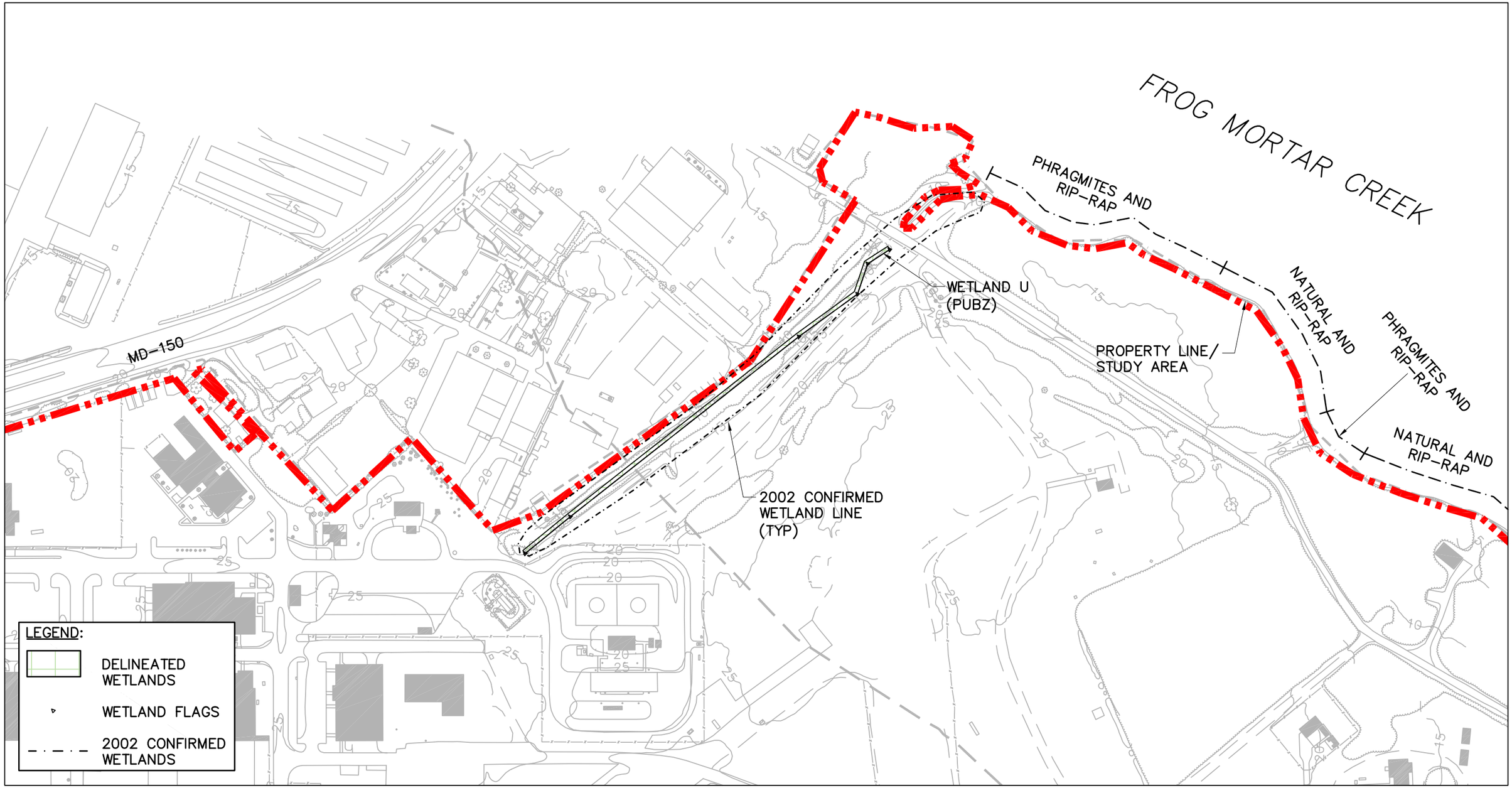
Vanasse Hangen Brustlin, Inc.

0 100 200 Feet

NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1–3/05

Figure 10 April 2006
Tract 5
Martin State Airport
Baltimore County, Maryland
Project # 09246.04



NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1-3/05

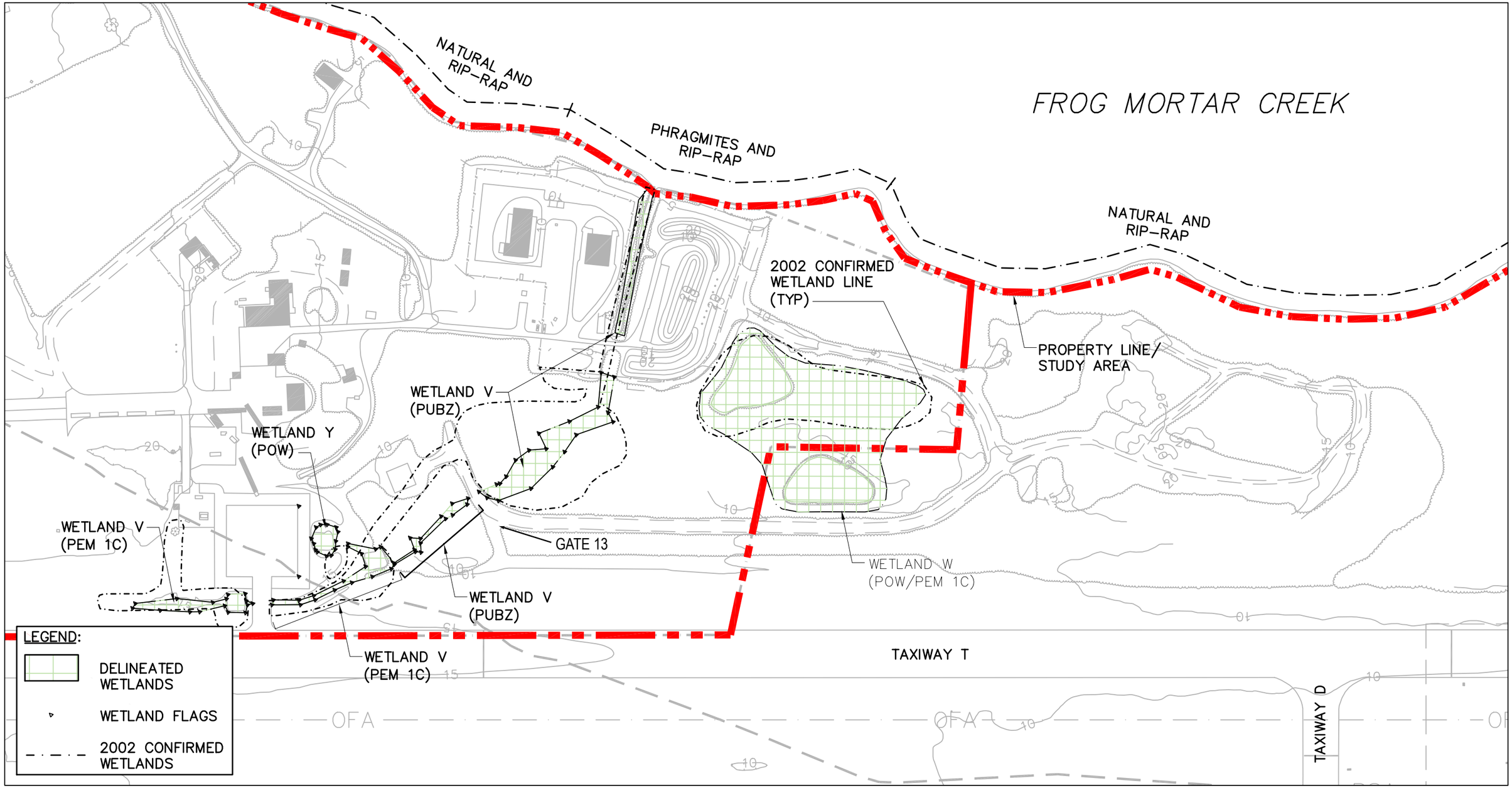
WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC-SF
U	PUBZ	0.19-8,074

0 100 200 Feet

Vanasse Hangen Brustlin, Inc.

Figure 11 April 2006

MANG Area
Martin State Airport
Baltimore County, Maryland
Project # 09246.04



NOTES:

1. BACKGROUND INFORMATION FROM PLAT ENTITLED "AIRPORT LAYOUT PLAN: EXISTING FACILITIES" PREPARED BY DMJM AVIATION AND DATED 10/16/02. BACKGROUND INFORMATION IS FOR PRESENTATION PURPOSES ALONE AND HAS NOT BEEN VERIFIED BY VHB.
2. WETLANDS SURVEYED BY VHB 11/1-3/05

0 100 200 Feet

WETLAND SUMMARY TABLE		
WETLAND	COWARDIN CLASSIFICATION	SIZE AC-SF
V	PEM 1C	0.25-11,042
V	PUBZ	0.57-25,017
W	POW/PEM 1C	2.51-109,224
Y	POW	0.06-2,764

Vanasse Hangen Brustlin, Inc.

Figure 12 April 2006

MANG Area
Martin State Airport
Baltimore County, Maryland
Project # 09246.04

East of Taxiway T and adjacent to the engine testing facility, infrastructure is in place to capture, pipe, and release runoff into a 3-foot wide ditch that conveys water through a wooded area near Gate 10 (Photo B11). As the water flows underneath an existing dirt road, it enters a sandy flat and distinct channel that appears to have been formed by flashy rain events (Wetland V, Figure 12). The system fans out into a low energy, absorbing wetland with a heavy sand and silt soil texture populated by scattered smartweeds (*Polygonum* spp.), broadleaf arrowhead (*Sagittaria latifolia*), and false nettle (*Boehmeria cylindrical*) growing in the lowest areas, and box elder (*Acer negundo*) growing along the outer edges. Any excess water not absorbed by the sandy flat eventually enters another ditch that conveys the water eastward to Frog Mortar Creek. It should be noted that the size and configuration of Wetland V varies appreciably from the corresponding wetland delineated in 2002 (Figure 12). In addition, the position of the ditch just north of Gate 13 is offset noticeably to the north. MAA and VHB are currently consulting with MANG staff to resolve these inconsistencies.

Wetland W is located south of the Wetland V and contains two artificial ponds (Figure 12). Both ponds are surrounding by extremely dense stands of giant reed, making a complete inspection difficult. Furthermore, MAA and MANG staff recommended but a cursory evaluation of this area. It appears these ponds are formed from depressions in the landscape resulting from historic dumping and backfilling activities. Signs of past dumping activities include piles of construction debris, concrete rubble, and vegetation typically associated with disturbed sites such as common reed (*Phragmites australis*), Japanese honeysuckle (*Lonicera japonica*), blackberry (*Rubus argutus*), pokeweed (*Phytolacca americana*), and devil's walking stick (*Aralia spinosa*). The ponds are open-water features with no distinguishable outlets.

Wetland W is of a larger size than the corresponding wetland confirmed in 2002, and incorporates the southern pond (Figure 12).

Farther south and adjacent to the Compass Rose lies a monoculture of *Phragmites* functioning as a low marsh approximately 1.53 acres in size (Wetland X, Figure 9). This wetland appears to receive runoff from the airstrip through a piped system before being released into Frog Mortar Creek (Photos B12 and B13).

Shoreline

Unlike the shoreline in Tract 3 along Stansbury Creek (Figures 8A and 8B), the eastern shoreline along the MANG portion of the airport is far more inaccessible and punctuated by steep sections of riprap. As a result, field personnel evaluated this shoreline from the water with the aid of a Baltimore County Police boat launched from Strawberry Point.

Three general shoreline types arose as a result of this investigation. These include:

- areas of little vegetation dominated by shore defense materials such as riprap;
- areas of *Phragmites* intermingled with riprap, and;
- areas of relatively native vegetation intermingled with rip rap.

The distribution of these shoreline types is presented in Figures 9, 11, and 12. Average width of the vegetated areas was 10 to 15 feet. Native vegetation consisted of saltmarsh cordgrass (*Spartina alterniflora*) and Eastern baccharis (*Baccharis halimifolia*). Some relatively natural, intertidal sandy beaches were noted, transitioning to upland side slopes colonized by red maple (*Acer rubrum*), sweetgum (*Liquidambar styfaciflua*) and various oaks (*Quercus* spp.).

■

Wetlands Functions & Values Assessment

Methodology

At the request of the MAA, VHB utilized a methodology to assess functional values based on an approach developed by the New England District of the U.S. Army Corps of Engineers and outlined in the Highway Methodology Workbook: Supplement (COE 1999). This methodology assesses 13 functional values through a "descriptive approach", using both wetland science and judgment in the field. If a particular function is judged to be present by the evaluator, justification for identifying that function is easily documented by descriptive characteristics. The guidebook provides a listing of such characteristics that can be easily referenced on a data form. The data form then provides an "unbiased record of the wetland, including its location, function, appearance, and relationship to its adjacent land use." The 13 functional values that were evaluated are listed below.

- Groundwater Recharge/Discharge
- Floodflow Alteration/Attenuation
- Fish and Shellfish Habitat
- Sediment/Toxicant Retention
- Nutrient Removal
- Production Export
- Sediment/Shoreline Stabilization

- Wildlife Habitat
- Recreation
- Educational/Scientific Value
- Uniqueness/Heritage
- Visual Quality/Aesthetics
- Endangered Species Habitat

Results

Wetlands at MTN were found to be of varying degrees of quality, ranging from man-made disturbed areas to mature hardwood swamps. The various types of wetlands also account for the wide variety of functional values. Endangered Species Habitat and Recreational values, however, are the only functions not offered by any wetland on the property.

The non-tidal forested systems - including swamps and vernal pools - have unique value for wildlife use and stormwater retention. Tidal systems tend to be thin, vegetated shorelines with the exception of the excavated mitigation area located in Tract 3 (Figure 8A). Many of the other systems in the MANG area offer very little wetland functional values due to significant past disturbances and dumping.

The results of the functional values assessment are summarized in Table 4, and a brief description of the values offered is provided below for each tract.

Tract 1

The larger wetlands within Tract 1 (A, E, and F, Figure 6) are high-quality forested systems that are unique to the local area. These systems provide stormwater attenuation and wildlife habitat as their primary functions. The smaller, isolated and artificial systems provide a sediment / toxicant removal function alone because of their location adjacent to old fill material and construction debris and depressional setting.

Tract 2

Tract 2 contains the highest quality wetland systems on the entire airport property. Approximately 35% of this tract is forested wetlands comprised of unique swamp and vernal pool systems. Wetlands G and I (Figure 7) provide a high degree of wildlife habitat, flood storage, and nutrient/sediment removal as points of water collection. Wetland I, in particular, is a mature forest with a wide variety of native plants. Wetland H conveys surface water slowly across the property towards the west, and provides wildlife habitat, floodflow attenuation, and production export values.

Table 4.
WETLAND FUNCTIONS AND VALUES ASSESSMENT

	TRACT 1						TRACT 2				TRACT 3						TRACT 4		TRACT 5		MANG AREA				
Wetland Function/Value	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**Q**	**R**	**S**	**T**	**U**	**V**	**W**	**X**	**Y**
Groundwater Recharge/Discharge	✓				✓	✓	✓	✓	✓	✓									★						
Floodflow Alternation/Attenuation	★				★	★	★	★	★	★							★	★				★	✓		★
Fish and Shellfish Habitat																							✓		
Sediment/Toxicant Retention	✓		★	★	✓	✓	✓	★	★	★	★	✓	★		★	★	★	★			✓	★	★	★	★
Nutrient Removal	✓				✓	✓		✓	★	✓	★	✓									★	★	✓	✓	
Production Export								✓				✓		✓										✓	
Sediment/Shoreline Stabilization												★		★										★	
Wildlife Habitat	★				★	★	★	★	★	★		★		★	★	★				★			★		
Recreation																									
Educational/Scientific Value					✓	✓						✓													
Uniqueness/Heritage	✓				★	★	★	★	✓			✓													
Visual Quality/Aesthetics												★													
Endangered Species Habitat																									

✓ - Functional value present
★ - Denotes principal function offered by wetland

Tract 3

Wetlands within Tract 3 (Figures 8A, 8B) are associated chiefly with the tidal shoreline adjacent to Stansbury Creek. The highest valued system is the mitigation site (Wetland L) which provides sediment retention, production export, shoreline stabilization, and wildlife habitat functions. Other wetlands within Tract 3, other than the *Phragmites*-dominated shoreline, are small depressions that offer fewer functional values.

Tract 4

Wetlands within Tract 4 (Figure 9) at the end of the runway capture surface runoff from the neighboring pavement and grassed areas. Flood storage and sediment/toxicant retention are the only functional values these wetlands provide.

Tract 5

The two small wetlands within Tract 5 (Figure 10) include the seep and man-made ditch. Each of these systems is too small to provide any significant wetland function. The small seep, which was dry during the field work, offers groundwater discharge functions. Several frogs were observed in the ditch using the standing water for habitat.

MANG Area

Because the MANG property has experienced years of earth moving, filling, and dumping, wetlands on this parcel are primarily the result of man-made features dominated by invasive species (*Phragmites*). As such, sediment/toxicant retention and nutrient removal appear to be the dominant functions offered. The two ponds, however, offer wildlife habitat for species such as waterfowl and amphibians.

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Appendix A – DATA FORMS

TRACT 1 – Wetland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 1 DATE: 9/19/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Wetland A
Is the site significantly disturbed (Atypical Situation)? Yes No Transect ID T-2
Is the area a potential Problem Area? Yes No Plot ID P-1
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Acer rubrum	T	FAC	9.		
2. Liquidambar styraciflua	T	FAC	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Vaccinium corymbosum	SH	FACW-	12.		
5. Smilax rotundifolia	V	FAC	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: 14.4 (in.)

Depth to Saturated Soil: 0.0 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
X Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)

X Oxidized Root Channels in Upper 12 inches
X Water-Stained Leaves
____ Local Soil Survey Data
X Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-1,T-2)

Map Unit Name
(Series & Phase): Elkton Loam

Drainage Class: Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic endoaquults

Confirm Mapped Type: (YES) NO
see remarks

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-2	O	10YR 3/1			Saturated loamy sand & organics
2-6	A	10YR 3/2			Saturated loamy sand
6-12	B1	5Y 6/2	7.5YR 4/6	com./fine/prom.	Moist clayey f-sand, friable, ox rc
12-17	B2	5Y 6/2	7.5YR 4/6	many/med./prom.	Saturated clayey fine sand, friable
17	refusal				

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion. Soils were not sampled due to extremely hard and dry conditions.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria and is classified as a PFO1C wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 1 DATE: 9/20/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Wetland E
Transect ID T-4
Plot ID P-1

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus phellos	T	FAC+	9.		
2. Liquidambar styraciflua	T	FAC	10.		
3. Acer rubrum	T	FAC	11.		
4. Acer rubrum	SH	FAC	12.		
5. Vaccinium corymbosum	SH	FACW-	13.		
6. Liquidambar styraciflua	SH	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: >18 (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 inches
X Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ Fac-Neutral Test
___ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion.

S O I L S (P-1,T-4)

Map Unit Name
(Series & Phase): Elkton Loam

Drainage Class: Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-2					Organic duff; Dry
2-6		10YR 3/1			Clay Loam; Slightly Moist
6-18		2.5Y 4/1	2.5Y 5/6	Com Prom Dist	Clay Loam; Slightly Moist

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria and is classified as a PFO1E wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 1 DATE: 9/20/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Vernal Pool, Wetland F
Transect ID T-6
Plot ID P-1

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Vaccinium corymbosum	SH	FACW-	10.		
3. Woodwardia virginica	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 inches
X Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 inches
X Water-Stained Leaves
___ Local Soil Survey Data
___ Fac-Neutral Test
___ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-1,T-6)

Map Unit Name
(Series & Phase): Elkton Loam

Drainage Class: Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-3					Organic duff; Dry
3-16		10YR 2/1		unmottled	Silt Loam; Friable
16-18+		10YR 4/1	10YR 5/8	Com Med Dist	Clay Loam; Friable

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1E wetland.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 1 – Upland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 1 DATE: 9/19/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? ~~Yes~~ No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Upland
Transect ID T-3
Plot ID P-1

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Acer rubrum	T	FAC	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Prunus serotina	SH	FACU	12.		
5. Acer rubrum	SH	FAC	13.		
6. Clethra alnifolia	H	FAC+	14.		
7. Pteridium aquilinum	H	FACU	15.		
8. Toxicodendron radicans	V	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC
(EXCLUDING FAC-). **75**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- X Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; Does not satisfy criterion.

S O I L S (P-1,T-3)

Map Unit Name
(Series & Phase): Elkton Loam

Drainage Class: Poorly drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO
see remarks

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-2	A	7.5YR 2.5/2			Fine loam
2-9	B1	2.5Y 6/6	10YR 3/6	Com., Fine., Dist.	Fine sandy loam
			10YR 5/1	Few, Fine, Dist.	
9-21	B2	10YR 6/6	5YR 5/8	Com., Med.,Dist.	Sandy loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Insufficient indicators of hydric soil. Does not satisfy criteria

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport –Tract 1 DATE: 9/20/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Upland
Transect ID T-4
Plot ID P-2

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Nyssa sylvatica	T	FAC	9. Vaccinium corymbosum	H	FACW-
2. Quercus prinus	T	UPL	10.		
3. Liquidambar styraciflua	T	FAC	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Vaccinium corymbosum	SH	FACW-	13.		
6. Ilex opaca	SH	FACU+	14.		
7. Smilax rotundifolia	V	FAC	15.		
8. Clethra alnifolia	H	FAC+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **78**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; Does not satisfy criterion

S O I L S (P-2,T-4)

Map Unit Name
(Series & Phase): Elkton Loam

Drainage Class: Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-2	O				Organic duff; Dry
2-4	A	2.5Y 3/1		unmottled	Silt Loam; Dry
4-8	E	2.5Y 6/2		unmottled	Silt Loam; Dry
8-0	E	2.5Y 6/2	2.5Y 6/3	Com Med Fnt	Silt Loam; Dry

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:?	(Yes)	No	(Circle)	
Wetland Hydrology Present?	Yes	(No)	Is this Sampling Point	
Hydric Soils Present?	Yes	(No)	Within a Wetland? Yes	(No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 1 DATE: 9/20/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes No
Is the area a potential Problem Area? Yes No
(If needed, explain on reverse.)

Community ID Forested Upland
Transect ID T-6
Plot ID P-2

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus alba	T	FACU-	9.		
2. Quercus prinus	T	UPL	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Vaccinium corymbosum	SH	FACW-	13.		
6. Lycopodium clavatum	H	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **67**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: >18 (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology no present; Does not satisfy criterion.

S O I L S (P-2,T-6)

Map Unit Name
(Series & Phase): Mattapex-Urban land complex

Drainage Class: N/A
Field Observations
Confirm Mapped Type: (YES) NO

Taxonomy (Subgroup): N/A

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-1					Organic duff; Dry
1-3		2.5Y 4/2		unmottled	Silt Loam; Friable
3-12+		2.5Y 4/3		unmottled	Sandy Loam; Friable

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 2 – Wetland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Wetland I
Is the site significantly disturbed (Atypical Situation)? Yes No Transect ID T-1
Is the area a potential Problem Area? Yes No Plot ID P-2
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Magnolia virginiana	T	FACW+	9.		
2. Pinus serotina	T	OBL	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Nyssa sylvatica	SH	FAC	13.		
6. Magnolia virginiana	SH	FACW+	14.		
7. Smilax rotundifolia	V	FAC	15.		
8. Clethra alnifolia	H	FAC+	16.		

Percent of Dominant Species that are OBL, FACW or FAC
(EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
X Water-Stained Leaves
____ Local Soil Survey Data
X Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-2,T-1)

Map Unit Name
(Series & Phase): Pocomoke

Drainage Class: Very Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic Umbraquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-6		10YR 2/1		unmottled	Silt Loam; Dry
6-12		10YR 3/1		unmottled	Silt Loam; Slightly Moist
12-18+		10YR 4/1		unmottled	Silt Loam; Slightly Moist

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1/4E wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Vernal Pool G
Transect ID T-4
Plot ID P-2

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus phellos	T	FAC+	9.		
2. Liquidambar styraciflua	T	FAC	10.		
3. Smilax rotundifolia	V	FAC	11.		
4. Smilax rotundifolia	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- X Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-2,T-4)

Map Unit Name
(Series & Phase): Fallsington Sandy Loam

Drainage Class: Poorly Drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO
see remarks

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
					see remarks;

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
		X	Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion. Plot located in a vernal pool; hydric soils are assumed.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1C wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Wetland J
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-5
Is the area a potential Problem Area? Yes (No) Plot ID P-8
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Pinus serotina	T	OBL	9. Rhododendron viscosum	H	OBL
2. Magnolia virginiana	T	FACW+	10. Smilax rotundifolia	H	FAC
3. Quercus falcata	T	FACU-	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Magnolia virginiana	SH	FACW+	13.		
6. Rhododendron viscosum	SH	OBL	14.		
7. Smilax rotundifolia	V	FAC	15.		
8. Clethra alnifolia	H	FAC+	16.		

Percent of Dominant Species that are OBL, FACW or FAC
(EXCLUDING FAC-). **90**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
X Local Soil Survey Data
X Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-8,T-5)

Map Unit Name
(Series & Phase): Woodstown

Drainage Class: Moderately well-drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: YES (NO)

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-12		2.5Y 3/2		Oxid. Rhizo.	Fine Sandy Loam; Dry
12+		2.5Y 6/2	2.5Y 3/2	Com Med Fnt	Fine Sandy Loam; Dry

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion. Soil does not appear to match the mapped type.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria, and is classified as a PFO1/4E wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Wetland H
Transect ID T-6
Plot ID P-2

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus palustris	T	FACW	9.		
2. Acer rubrum	T	FAC	10.		
3. Liquidambar styraciflua	T	FAC	11.		
4. Vaccinium corymbosum	SH	FACW-	12.		
5. Clethra alnifolia	SH	FAC+	13.		
6. Aronia melanocarpa	SH	FAC	14.		
7. Rhododendron viscosum	H	OBL	15.		
8. Smilax rotundifolia	V	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
X Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion.

S O I L S (P-2,T-6)

Map Unit Name
(Series & Phase): Fallsington Sandy Loam

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Typic Endoaquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-12		2.5Y 2.5/1		unmottled	Sandy Loam; Dry
12-16+		2.5Y 5/2	10YR 4/4	Mny Med Prom	Sandy Loam; Dry

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1C wetland.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 2 – Upland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Upland
Is the site significantly disturbed (Atypical Situation)? Yes No Transect ID T-3
Is the area a potential Problem Area? Yes No Plot ID P-1
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9. Lonicera japonica	V	FAC-
2. Acer rubrum	T	FAC	10.		
3. Quercus phellos	T	FAC+	11.		
4. Liquidambar styraciflua	SH	FAC	12.		
5. Prunus serotina	SH	FACU	13.		
6. Nyssa sylvatica	SH	FAC	14.		
7. Parthenocissus quinquefolia	V	FACU	15.		
8. Vitis rotundifolia	V	FAC-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **55**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; Does not satisfy criterion.

S O I L S (P-1,T-3)

Map Unit Name
(Series & Phase): Galestown loamy sand

Drainage Class: Well Drained
Field Observations
Confirm Mapped Type: YES NO

Taxonomy (Subgroup): Psammentic Hapludults

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-10		10YR 4/2		unmottled	Silt Loam; Dry
10-14+		2.5Y 5/5		unmottled	Silt Loam; Dry

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria. Area of upland appears historically disturbed and left to naturally re-vegetate. Soil has undulations and mounds implying past clearing and/or earthwork. Mounds have same soil consistency as natural ground.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Upland
Is the site significantly disturbed (Atypical Situation)? Yes No Transect ID T-4
Is the area a potential Problem Area? Yes No Plot ID P-1
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus coccinea	T	UPL	9. Carya glabra	H	FACU-
2. Pinus virginiana	T	UPL	10.		
3. Liquidambar styraciflua	T	FAC	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Nyssa sylvatica	SH	FAC	13.		
6. Acer rubrum	SH	FAC	14.		
7. Smilax rotundifolia	V	FAC	15.		
8. Clethra alnifolia	H	FAC+	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **67**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; Does not satisfy criterion.

S O I L S (P-1,T-4)

Map Unit Name
(Series & Phase): Woodstown

Drainage Class: Moderately Well Drained
Field Observations
Confirm Mapped Type: YES NO

Taxonomy (Subgroup): Aquic Hapludults

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-3		2.5Y 4/3		unmottled	Sandy Loam; Dry
3-12+		2.5Y 6/4		unmottled	Sandy Loam; Dry

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? Yes No Community ID Forested Upland
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-5
Is the area a potential Problem Area? Yes (No) Plot ID P-2
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Quercus phellos	T	FAC+	10.		
3. Betula nigra	T	FACW	11.		
4. Nyssa sylvatica	SH	FAC	12.		
5. Liquidambar styraciflua	SH	FAC	13.		
6. Lonicera japonica	H	FAC-	14.		
7. Quercus phellos	H	FAC+	15.		
8. Toxicodendron radicans	V	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **88**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; Does not satisfy criterion.

S O I L S (P-2,T-5)

Map Unit Name
(Series & Phase): Woodstown

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-10		2.5Y 3/2		unmottled	Sandy Loam; Dry
10-18+		10YR 5/4		unmottled	Sandy Loam; Dry

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No Community ID Forested Upland
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-5
Is the area a potential Problem Area? Yes (No) Plot ID P-12
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Pinus serotina	T	OBL	9. Clethra alnifolia	H	FAC+
2. Nyssa sylvatica	T	FAC	10. Sassafras albidum	H	FACU-
3. Sassafras albidum	T	FACU-	11.		
4. Clethra alnifolia	SH	FAC+	12.		
5. Vaccinium corymbosum	SH	FACW-	13.		
6. Magnolia virginiana	SH	FACW+	14.		
7. Toxicodendron radicans	V	FAC	15.		
8. Parthenocissus quinquefolia	V	FACU	16.		

Percent of Dominant Species that are OBL, FACW or FAC
(EXCLUDING FAC-). **70**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
____ Stream, Lake, or Tide Gauge
X Aerial Photographs
____ Other
____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
____ Inundated
____ Saturated in Upper 12 inches
____ Water Marks
____ Drift Lines
____ Sediment Deposits
____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
____ Oxidized Root Channels in Upper 12 inches
____ Water-Stained Leaves
____ Local Soil Survey Data
____ Fac-Neutral Test
____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-12,T-5)

Map Unit Name
(Series & Phase): Woodstown Sandy Loam

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: YES (NO) **See remarks**

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-4		10YR 3/1		unmottled	Sandy Loam; Dry
4-10		10YR 4/1		unmottled	Sandy Loam; Dry
10-16		10YR 3/2		unmottled	Loamy Fine Sand; Dry
16-18+		2.5Y 5/3	2.5Y 5/2 & 2.5Y 5/5	Com Med Fnt Few Fine Prom.	Loamy Fine Sand; Dry

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; does not satisfy criterion. Soil appears to represent a spodosol inclusion. Chroma 3 below spodic layer. Would expect a chroma 2 or less in a hydric soil.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria. Plot located in an area that appears to be a transitional zone from a wetland community to an upland community.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 2 DATE: 9/21/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Upland
Transect ID T-6
Plot ID P-4

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Quercus coccinea	T	UPL	9. Smilax rotundifolia	H	FAC
2. Pinus virginiana	T	UPL	10.		
3. Liquidambar styraciflua	SH	FAC	11.		
4. Sassafras albidum	SH	FACU-	12.		
5. Acer rubrum	SH	FAC	13.		
6. Clethra alnifolia	H	FAC+	14.		
7. Vaccinium corymbosum	H	FACW-	15.		
8. Sassafras albidum	H	FACU-	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **56**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-4,T-6)

Map Unit Name
(Series & Phase): Woodstown Sandy Loam

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: YES (NO)

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-6		10YR 4/2		unmottled	Sandy Loam; Dry
6-12+		2.5Y 5/5		unmottled	Sandy Loam; Dry

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface
_____ Sulfidic Odor	_____ Layer in Sandy Soils
_____ Aquic Moisture Regime	_____ Organic Streaking in sandy Soils
_____ Reducing Conditions	_____ Listed on Local Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Listed on National Hydric Soils List
	_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria. Plot located on edge of wetland; off-set into uplands.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 3 – Wetland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No Community ID Forested Wetland K
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-2
Is the area a potential Problem Area? Yes (No) Plot ID P-2
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Acer rubrum	T	FAC	10.		
3. Nyssa sylvatica	T	FAC	11.		
4. Vaccinium corymbosum	SH	FACW-	12.		
5. Liquidambar styraciflua	SH	FAC	13.		
6. Acer rubrum	SH	FAC	14.		
7. Smilax rotundifolia	V	FAC	15.		
8. Toxicodendron radicans	V	FAC	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- X Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion.

S O I L S (P-2,T-2)

Map Unit Name
(Series & Phase): Sassafras – Urban Land Complex

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Typic Hapludults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-3					Organics Dry
3-8		2.5Y 3/1			Sandy Loam; Dry
8-18		2.5Y 4/1		w/ OR's	Sandy Loam; Dry

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	X	Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; satisfies criterion. Soil is an hydric inclusion in an otherwise non-hydric soil.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1C wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Wetland Delineation - Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Virginia

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Mitigation Site (Wetland L)
Transect ID T-2
Plot ID P-4

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Pluchea purpurascens	H	OBL	9.		
2. Solidago sempervirens	H	FACW	10.		
3. Typha angustifolia	H	OBL	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- X Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-4,T-2)

Map Unit Name
(Series & Phase): Lenoir-Urban Land Complex

Drainage Class: Somewhat Poorly Drained

Field Observations

Taxonomy (Subgroup): Aeric Paleaquults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-16		10YR 4/3		unmottled	Sandy Loam; Wet
16+		Gley 1 4/10Y	Gley 1 4/5GY	Com Med Dist	Clay; Wet

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion. Soil appears to be disturbed. Clay layer is most likely the original subsoil.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as an E2EM1 wetland. Plot located in a wetland creation site.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Wetland
Transect ID T-4
Plot ID P-4

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Acer rubrum	SH	FAC	10.		
3. Onoclea sensibilis	H	FACW	11.		
4. Lonicera japonica	H	FAC-	12.		
5. Lonicera japonica	V	FAC-	13.		
6. Vitis rotundifolia	V	FAC-	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **50**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- X Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion.

S O I L S (P-4,T-4)

Map Unit Name
(Series & Phase): Sassafras – Urban Land Complex

Drainage Class: Well Drained
Field Observations
Taxonomy (Subgroup): Typic Hapludults
Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-8		10YR 3/2	7.5YR 4/6	CMD	Sandy Loam; Dry
8-16+		7.5YR 4/1		Oxid. Rhizo.	Silt Loam; Moist

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Emergent Wetland O
Transect ID T-7
Plot ID P-1

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Scirpus cyperinus	H	FACW+	9.		
2. Polygonum sagittatum	H	OBL	10.		
3. Panicum virgatum	H	FAC	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gauge
_____ Aerial Photographs
_____ Other
_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)

X Oxidized Root Channels in Upper 12 inches
X Water-Stained Leaves
_____ Local Soil Survey Data
_____ Fac-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-1,T-7)

Map Unit Name
(Series & Phase): Made Land

Drainage Class: N/A
Field Observations
Confirm Mapped Type: (YES) NO

Taxonomy (Subgroup): N/A

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-12+		Gley 1 4/10Y		unmottled	Clay; Dry

Hydric Soil Indicators:

___	Histosol	___	Concretions
___	Histic Epipedon	___	High Organic Content in Surface
___	Sulfidic Odor	___	Layer in Sandy Soils
___	Aquic Moisture Regime	___	Organic Streaking in sandy Soils
___	Reducing Conditions	___	Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors	___	Listed on National Hydric Soils List
		___	Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion. Plot located in an isolated depression.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)
Wetland Hydrology Present? (Yes) No
Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PEM1C wetland.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 3 DATE: 10/4/05 – 3/28/06
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No Community ID Forested Wetland P
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-7
Is the area a potential Problem Area? Yes (No) Plot ID P-2
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Acer rubrum	T	FAC	10.		
3. Prunus serotina	T	FACU	11.		
4. Liquidambar styraciflua	SH	FAC	12.		
5. Prunus serotina	SH	FACU	13.		
6. Quercus falcata	SH	FACU-	14.		
7. Acer rubrum	H	FAC	15.		
8. Pteridium aquilinum	H	FACU	16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **50**

Remarks: Sample area does satisfy the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: at surface (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- X Other (Explain in Remarks)

Remarks: Field indicators of hydrology are limited, but include buttressed tree roots and occasional water-stained leaves.

S O I L S (P-2,T-7)

Map Unit Name
(Series & Phase): Made Land

Drainage Class: N/A
Field Observations
Confirm Mapped Type: (YES) NO
See remarks

Taxonomy (Subgroup): N/A

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-12+		2.5Y 5/2	10YR 5/6	Com Med Dist	Silty loam, saturated

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime	X	Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present, satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1C wetland.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 3 – Upland Data Sheets

Tract 3, Transect 1, Observation Points P1 & P2:
Area largely mowed and maintained with little natural vegetation.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Upland Field
Transect ID T-2
Plot ID P-3

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Lonicera japonica	H	FAC-	9.		
2. Festuca arundinacea	H	FACU	10.		
3. Agrostis alba	H	FACW	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **33**

Remarks: Sample area does not satisfy the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
_____ Stream, Lake, or Tide Gauge
X Aerial Photographs
_____ Other
_____ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
_____ Inundated
_____ Saturated in Upper 12 inches
_____ Water Marks
_____ Drift Lines
_____ Sediment Deposits
_____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
_____ Oxidized Root Channels in Upper 12 inches
_____ Water-Stained Leaves
_____ Local Soil Survey Data
_____ Fac-Neutral Test
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-3,T-2)

Map Unit Name
(Series & Phase): Sassafras – Urban Land Complex

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Typic Hapludults

Confirm Mapped Type: YES (NO)

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-8		2.5Y 4/3			Sandy Loam; Dry

Hydric Soil Indicators:

___ Histosol	___ Concretions
___ Histic Epipedon	___ High Organic Content in Surface
___ Sulfidic Odor	___ Layer in Sandy Soils
___ Aquic Moisture Regime	___ Organic Streaking in sandy Soils
___ Reducing Conditions	___ Listed on Local Hydric Soils List
___ Gleyed or Low-Chroma Colors	___ Listed on National Hydric Soils List
	___ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; does not satisfy criterion. Soil too hard and dry to auger deeper.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No Community ID Forested Upland
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID T-4
Is the area a potential Problem Area? Yes (No) Plot ID P-3
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Prunus serotina	T	FACU	9.		
2. Liquidambar styraciflua	SH	FAC	10.		
3. Rubus argutus	H	FACU	11.		
4. Lonicera japonica	H	FAC-	12.		
5. Lonicera japonica	V	FAC-	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **20**

Remarks: Sample area does not satisfy the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-3_T-4)

Map Unit Name
(Series & Phase): Sassafras – Urban Land Complex

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup):

Confirm Mapped Type: YES (NO) See remarks

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-7		10YR 4/3			Silt Loam; Dry
7-12+		2.5Y 5/4			Silt Loam; Dry

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface
_____ Sulfidic Odor	_____ Layer in Sandy Soils
_____ Aquic Moisture Regime	_____ Organic Streaking in sandy Soils
_____ Reducing Conditions	_____ Listed on Local Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Listed on National Hydric Soils List
	_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes (No) (Circle)

Wetland Hydrology Present? Yes (No)

Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 3 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Forested Upland
Transect ID T-7
Plot ID P-3

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Liquidambar styraciflua	T	FAC	9.		
2. Prunus serotina	T	FACU	10.		
3. Prunus serotina	SH	FACU	11.		
4. Liquidambar styraciflua	SH	FAC	12.		
5. Vaccinium corymbosum	SH	FACW-	13.		
6. Acer rubrum	H	FAC	14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **67**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- Oxidized Root Channels in Upper 12 inches
- Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-3,T-7)

Map Unit Name
(Series & Phase): Made Land

Drainage Class: N/A
Field Observations
Confirm Mapped Type: YES NO

Taxonomy (Subgroup): N/A

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-2	O				Organic duff;
2-12+		2.5Y 5/3.5			Loamy Fine Sand;

Hydric Soil Indicators:

_____ Histosol	_____ Concretions
_____ Histic Epipedon	_____ High Organic Content in Surface
_____ Sulfidic Odor	_____ Layer in Sandy Soils
_____ Aquic Moisture Regime	_____ Organic Streaking in sandy Soils
_____ Reducing Conditions	_____ Listed on Local Hydric Soils List
_____ Gleyed or Low-Chroma Colors	_____ Listed on National Hydric Soils List
	_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes No (Circle)
Wetland Hydrology Present? Yes No
Hydric Soils Present? Yes No

Is this Sampling Point Within a Wetland? Yes No (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 4 – Wetland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 4 DATE: 10/6/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Virginia

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Emergent Wetland Q
Transect ID T-1
Plot ID P-1

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Panicum virgatum	H	FAC	9.		
2. Typha latifolia	H	OBL	10.		
3. Scirpus cyperinus	H	FACW+	11.		
4. Juncus effusus	H	FACW+	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **100**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- X Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion

S O I L S (P-1,T-1)

Map Unit Name
(Series & Phase): Mattapex - Urban Land Complex

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-4		2.5Y 4/3		unmottled	Silt Loam; Slightly Moist
4-12+		2.5Y 6/2	10YR 5/6	Com Med Dist	Silt Loam; Slightly Moist

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; Satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PEM1C wetland.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 4 – Upland Data Sheets

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport - Tract 4 DATE: 10/6/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Virginia

Do Normal Circumstances exist on the site? Yes No
Is the site significantly disturbed (Atypical Situation)? Yes (No)
Is the area a potential Problem Area? Yes (No)
(If needed, explain on reverse.)

Community ID Emergent Upland
Transect ID T-1
Plot ID P-2

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Solidago canadensis	H	FACU	9.		
2. Setaria italica	H	FACU	10.		
3. Andropogon virginicus	H	FACU	11.		
4. Panicum virgatum	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **25**

Remarks: Sample area does not satisfy the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
___ Stream, Lake, or Tide Gauge
X Aerial Photographs
___ Other
___ No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
___ Inundated
___ Saturated in Upper 12 inches
___ Water Marks
___ Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
___ Oxidized Root Channels in Upper 12 inches
___ Water-Stained Leaves
___ Local Soil Survey Data
___ Fac-Neutral Test
___ Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology not present; does not satisfy criterion.

S O I L S (P-2,T-1)

Map Unit Name
(Series & Phase): Mattapex - Urban Land Complex

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: (YES) NO

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-8		2.5Y 5/4		unmottled	Sandy Loam; Dry
8-15		2.5Y 5/5		unmottled	Sandy Loam; Friable
15+		2.5Y 6/2	10YR 5/6	Com Med Dist	Sandy Loam; Friable

Hydric Soil Indicators:

_____ Histosol
_____ Histic Epipedon
_____ Sulfidic Odor
_____ Aquic Moisture Regime
_____ Reducing Conditions
_____ Gleyed or Low-Chroma Colors
_____ Concretions
_____ High Organic Content in Surface
_____ Layer in Sandy Soils
_____ Organic Streaking in sandy Soils
_____ Listed on Local Hydric Soils List
_____ Listed on National Hydric Soils List
_____ Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil not present; Does not satisfy criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? Yes (No) (Circle)
Wetland Hydrology Present? Yes (No)
Hydric Soils Present? Yes (No)

Is this Sampling Point Within a Wetland? Yes (No) (Circle)

Remarks: Sample area does not satisfy all three mandatory wetland technical criteria.

Approved by HQUSACE 3/92

Appendix A – DATA FORMS

TRACT 5 – Wetland Data Sheet

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE WETLAND DELINEATION MANUAL)

PROJECT : Martin State Airport – Tract 5 DATE: 10/4/05
APPLICANT: BWI COUNTY: Baltimore
INVESTIGATOR: A. Sutton, T. Davis STATE: Maryland

Do Normal Circumstances exist on the site? (Yes) No Community ID Forested Wetland
Is the site significantly disturbed (Atypical Situation)? Yes (No) Transect ID n/a
Is the area a potential Problem Area? Yes (No) Plot ID Wetland S
(If needed, explain on reverse.)

V E G E T A T I O N

Dominant Plant Sp.	Stratum	Indicator	Dominant Plant Sp.	Stratum	Indicator
1. Fraxinus pennsylvanica	T	FACW	9.		
2. Liquidambar styraciflua	T	FAC	10.		
3. Cornus amomum	SH	FACW	11.		
4. Cornus amomum	H	FACW	12.		
5. Lonicera japonica	V	FAC-	13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (EXCLUDING FAC-). **80**

Remarks: Sample area satisfies the wetland hydrophytic vegetation criterion.

H Y D R O L O G Y

X Recorded Data (Describe in Remarks):
- Stream, Lake, or Tide Gauge
- X Aerial Photographs
- Other

No Recorded Data Available

Field Observations:

Depth of Surface Water: none (in.)

Depth to Free Water in Pit: none (in.)

Depth to Saturated Soil: none (in.)

Wetland Hydrology Indicators:
Primary Indicators:
- Inundated
- Saturated in Upper 12 inches
- Water Marks
- Drift Lines
- Sediment Deposits
- Drainage Patterns in Wetlands

Secondary Indicators (2 or more required)
- X Oxidized Root Channels in Upper 12 inches
- X Water-Stained Leaves
- Local Soil Survey Data
- X Fac-Neutral Test
- Other (Explain in Remarks)

Remarks: Sufficient field indicators of wetland hydrology present; satisfies criterion.

S O I L S (Wetland S)

Map Unit Name
(Series & Phase): Woodstown Sandy Loam

Drainage Class: Moderately Well Drained

Field Observations

Taxonomy (Subgroup): Aquic Hapludults

Confirm Mapped Type: YES (NO)

Profile Description:

Depth (Inches)	Horizon	Matrix Colors (Munsell Moist)	Mottle Colors (Munsell) Moist)	Mottle Abundance/ Contrast	Texture, Concretions
0-4		2.5 Y 4/2			Silt Loam; Dry
4-12+		2.5 Y 4/2	10YR 3/4		Silt Loam; Dry

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface
	Sulfidic Odor		Layer in Sandy Soils
	Aquic Moisture Regime		Organic Streaking in sandy Soils
	Reducing Conditions		Listed on Local Hydric Soils List
X	Gleyed or Low-Chroma Colors		Listed on National Hydric Soils List
			Other (Explain in Remarks)

Remarks: Sufficient field indicators of hydric soil present; satisfies criterion.

W E T L A N D D E T E R M I N A T I O N

Hydrophytic Vegetation Present:? (Yes) No (Circle)

Wetland Hydrology Present? (Yes) No

Hydric Soils Present? (Yes) No

Is this Sampling Point Within a Wetland? (Yes) No (Circle)

Remarks: Sample area satisfies all three mandatory wetland technical criteria, and is classified as a PFO1E wetland.

Approved by HQUSACE 3/92

Appendix B – SITE PHOTOGRAPHS

Photo B1: Wetland A, Tract 1.

Photo B2: Wetland E, Tract 1

Photo B3: Wetland H, Tract 2

Photo B4: Wetland I, Tract 2

Photo B5: Wetland L, Tract 3

Photo B6: Wetland N, Tract 3

Photo B7: Wetland Q, Tract 4.

Photo B8: Wetland T, Tract 5

Photo B9: Wetland U, MANG Area

Photo B10: East end of Wetland A, MANG Area

Photo B11: Wetland V near north end, MANG area

Photo B12: Wetland X near west end, MANG Area

Photo B13: Wetland X, Tract 4.