

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/7/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia408f\_w  
 Investigator(s): GB, SA, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR or MLRA): S Lat: 38.30554949 Long: -79.77761315 Datum: WGS 1984  
 Soil Map Unit Name: Macove channery silt loam, 3 to 15 percent slopes, very stony NWI classification: None

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

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

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

Saturated PFO wetland located in a swale along toe of slope above perennial stream shia409; hydrology from spring phia407; outflow has surface connection to stream within the corridor; NCWAM key = seep.

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): 2  
 Saturation Present? Yes  No  Depth (inches): 0  
 (includes capillary fringe)

**Wetland Hydrology Present?** Yes  No

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

**Remarks:**

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

Sampling Point: whia408f\_w

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				
1. <i>Acer rubrum</i>	10	Yes	FAC	
2. <i>Tsuga canadensis</i>	10	Yes	FACU	
3. <i>Betula lenta</i>	10	Yes	FACU	
4. _____				
5. _____				
6. _____				
7. _____				
30 = Total Cover				
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. <i>Hamamelis virginiana</i>	5	Yes	FACU	
2. <i>Fraxinus pennsylvanica</i>	5	Yes	FACW	
3. <i>Acer saccharum</i>	3	No	FACU	
4. <i>Carpinus caroliniana</i>	3	No	FAC	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
16 = Total Cover				
50% of total cover: <u>8</u>		20% of total cover: <u>3.2</u>		
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <i>Carex scabrata</i>	20	Yes	OBL	
2. <i>Carex gynandra</i>	15	Yes	OBL	
3. <i>Viola cucullata</i>	10	No	FACW	
4. <i>Viola rotundifolia</i>	4	No	FAC	
5. <i>Athyrium asplenioides</i>	4	No	FAC	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
53 = Total Cover				
50% of total cover: <u>26.5</u>		20% of total cover: <u>10.6</u>		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u>				(A)
Total Number of Dominant Species Across All Strata: <u>7</u>				(B)
Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.14285714</u>				(A/B)
<b>Prevalence Index worksheet:</b>				
Total % Cover of:		Multiply by:		
OBL species	<u>35</u>	x 1 =	<u>35</u>	
FACW species	<u>15</u>	x 2 =	<u>30</u>	
FAC species	<u>21</u>	x 3 =	<u>63</u>	
FACU species	<u>28</u>	x 4 =	<u>112</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>99</u>	(A)	<u>240</u>	(B)
Prevalence Index = B/A =				<u>2.42</u>
<b>Hydrophytic Vegetation Indicators:</b>				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Four Vegetation Strata:</b>				
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: whia408f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 3/1	100					SIL	
4-16	10YR 4/1	90	7.5YR 5/8	10	C	PL/M	SIL	rock at 16"

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

<b>Restrictive Layer (if observed):</b> Type: none _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Remarks:



**Photo 1**  
Wetland data point WHIA408f\_w facing north



**Photo 2**  
Wetland data point WHIA408f\_w facing east

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/7/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia408\_u  
 Investigator(s): GB, SA, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 15  
 Subregion (LRR or MLRA): S Lat: 38.3054709 Long: -79.77756927 Datum: WGS 1984  
 Soil Map Unit Name: Macove channery silt loam, 3 to 15 percent slopes, very stony NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken above toe of slope for a saturated PFO wetland located in a swale along toe of slope above perennial stream shia409.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

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

Sampling Point: whia408\_u

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )																																				
1. <u><i>Liriodendron tulipifera</i></u>	<u>15</u>	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>12</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25</u> (A/B)																																
2. <u><i>Tsuga canadensis</i></u>	<u>15</u>	Yes	FACU																																	
3. <u><i>Magnolia acuminata</i></u>	<u>10</u>	Yes	FACU																																	
4. <u><i>Acer rubrum</i></u>	<u>10</u>	Yes	FAC																																	
5. <u><i>Tilia americana</i></u>	<u>10</u>	Yes	FACU																																	
6. <u><i>Betula lenta</i></u>	<u>10</u>	Yes	FACU																																	
7. <u><i>Acer saccharum</i></u>	<u>5</u>	No	FACU																																	
$\frac{75}{100} = \text{Total Cover}$ 50% of total cover: <u>37.5</u> 20% of total cover: <u>15</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 1 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>20</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>60</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>115</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>460</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>135</u> (A)</td> <td></td> <td style="text-align:center;"><u>520</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A = <u>3.85</u></td> </tr> </table>	Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>	OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>20</u>	x 3 =	<u>60</u>	FACU species	<u>115</u>	x 4 =	<u>460</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>135</u> (A)		<u>520</u> (B)	Prevalence Index = B/A = <u>3.85</u>			
Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>																																	
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>0</u>	x 2 =	<u>0</u>																																	
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UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>135</u> (A)		<u>520</u> (B)																																	
Prevalence Index = B/A = <u>3.85</u>																																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																				
1. <u><i>Acer pensylvanicum</i></u>	<u>20</u>	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																
2. <u><i>Betula lenta</i></u>	<u>6</u>	No	FACU																																	
3. <u><i>Hamamelis virginiana</i></u>	<u>5</u>	No	FACU																																	
4. <u><i>Magnolia acuminata</i></u>	<u>4</u>	No	FACU																																	
5. _____																																				
6. _____																																				
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$\frac{35}{100} = \text{Total Cover}$ 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>																																				
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																				
1. <u><i>Dennstaedtia punctilobula</i></u>	<u>10</u>	Yes	FACU	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																																
2. <u><i>Viola rotundifolia</i></u>	<u>5</u>	Yes	FAC																																	
3. <u><i>Dryopteris carthusiana</i></u>	<u>5</u>	Yes	FAC																																	
4. <u><i>Polystichum acrostichoides</i></u>	<u>5</u>	Yes	FACU																																	
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
11. _____																																				
$\frac{25}{100} = \text{Total Cover}$ 50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>																																				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																																				
1. <u><i>Aristolochia elegans</i></u>	<u>7</u>	Yes		<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>3.5</u> 20% of total cover: <u>1.4</u>																																				
Remarks: (Include photo numbers here or on a separate sheet.)																																				

**SOIL**

Sampling Point: whia408\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 2/2	100					L	
2-6	10YR 5/4	100					SL	
6-14	10YR 5/6	100					SCL	rock at 14"

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____ No <input checked="" type="checkbox"/>
---	--

Remarks:



**Photo 1**  
Upland data point WHIA408\_u facing southwest



**Photo 2**  
Upland data point WHIA408\_u facing southeast



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/7/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia407f\_w  
 Investigator(s): GB, SA, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR or MLRA): S Lat: 38.30507109 Long: -79.77686931 Datum: WGS 1984  
 Soil Map Unit Name: Macove channery silt loam, 3 to 15 percent slopes, very stony NWI classification: None

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

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

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

Saturated PFO wetland located in a swale along toe of slope on floodplain of perennial stream shia409; hydrology from seep phia405 & spring phia406; outflow from wetland has subterranean connection to stream outside the survey corridor; NCWAM key = seep.

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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**Field Observations:**

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

**Wetland Hydrology Present?** Yes  No

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

**Remarks:**

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

Sampling Point: whia407f\_w

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				
1. <u>Fraxinus pennsylvanica</u>	10	Yes	FACW	
2. <u>Acer rubrum</u>	10	Yes	FAC	
3. <u>Tsuga canadensis</u>	6	Yes	FACU	
4. <u>Magnolia acuminata</u>	4	No	FACU	
5. _____				
6. _____				
7. _____				
30 = Total Cover				
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. <u>Hamamelis virginiana</u>	10	Yes	FACU	
2. <u>Fraxinus pennsylvanica</u>	7	Yes	FACW	
3. <u>Carpinus caroliniana</u>	5	No	FAC	
4. <u>Fagus grandifolia</u>	4	No	FACU	
5. <u>Acer rubrum</u>	2	No	FAC	
6. _____				
7. _____				
8. _____				
9. _____				
28 = Total Cover				
50% of total cover: <u>14</u>		20% of total cover: <u>5.6</u>		
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <u>Carex gynandra</u>	15	Yes	OBL	
2. <u>Osmundastrum cinnamomeum</u>	12	Yes	FACW	
3. <u>Carex scabrata</u>	5	No	OBL	
4. <u>Dryopteris carthusiana</u>	5	No	FAC	
5. <u>Dennstaedtia punctilobula</u>	4	No	FACU	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
41 = Total Cover				
50% of total cover: <u>20.5</u>		20% of total cover: <u>8.2</u>		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u>		(A)		
Total Number of Dominant Species Across All Strata: <u>7</u>		(B)		
Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.42857142</u>		(A/B)		
<b>Prevalence Index worksheet:</b>				
Total % Cover of:		Multiply by:		
OBL species	<u>20</u>	x 1 =	<u>20</u>	
FACW species	<u>29</u>	x 2 =	<u>58</u>	
FAC species	<u>22</u>	x 3 =	<u>66</u>	
FACU species	<u>28</u>	x 4 =	<u>112</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>99</u>	(A)	<u>256</u>	(B)
Prevalence Index = B/A = <u>2.58</u>				
<b>Hydrophytic Vegetation Indicators:</b>				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Four Vegetation Strata:</b>				
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: whia407f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 4/1	90	7.5YR 4/6	10	C	PL/M	SIL	
6-18	10YR 5/1	85	5YR 4/6	15	C	PL/M	SICL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	<b>Hydric Soil Present?</b> Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:



**Photo 1**  
Wetland data point WHIA407f\_w facing east



**Photo 2**  
Wetland data point WHIA407f\_w facing west

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/7/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia407\_u  
 Investigator(s): GB, SA, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 18  
 Subregion (LRR or MLRA): S Lat: 38.30502518 Long: -79.77697035 Datum: WGS 1984  
 Soil Map Unit Name: Shelocta-Berks complex, 35 to 55 percent slopes NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken above toe of slope for a saturated PFO wetland located in a swale along toe of slope above perennial stream shia409.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 no hydrology indicators present

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

Sampling Point: whia407\_u

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )																																				
1. <u>Quercus rubra</u>	<u>20</u>	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																																
2. <u>Liriodendron tulipifera</u>	<u>10</u>	Yes	FACU																																	
3. <u>Quercus alba</u>	<u>10</u>	Yes	FACU																																	
4. <u>Tsuga canadensis</u>	<u>10</u>	Yes	FACU																																	
5. <u>Magnolia acuminata</u>	<u>5</u>	No	FACU																																	
6. <u>Betula lenta</u>	<u>5</u>	No	FACU																																	
7. _____																																				
<u>60</u> = Total Cover 50% of total cover: <u>30</u> 20% of total cover: <u>12</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:right;">Multiply by:</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 1 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td>x 2 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>2</u></td> <td>x 3 =</td> <td style="text-align:center;"><u>6</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>126</u></td> <td>x 4 =</td> <td style="text-align:center;"><u>504</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>0</u></td> <td>x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>128</u> (A)</td> <td></td> <td style="text-align:center;"><u>510</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:right;">Prevalence Index = B/A = <u>3.98</u></td> </tr> </table>	Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>	OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>2</u>	x 3 =	<u>6</u>	FACU species	<u>126</u>	x 4 =	<u>504</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>128</u> (A)		<u>510</u> (B)	Prevalence Index = B/A = <u>3.98</u>			
Total % Cover of:	<u>0</u>	Multiply by:	<u>0</u>																																	
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>0</u>	x 2 =	<u>0</u>																																	
FAC species	<u>2</u>	x 3 =	<u>6</u>																																	
FACU species	<u>126</u>	x 4 =	<u>504</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>128</u> (A)		<u>510</u> (B)																																	
Prevalence Index = B/A = <u>3.98</u>																																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																				
1. <u>Liriodendron tulipifera</u>	<u>12</u>	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																
2. <u>Acer pensylvanicum</u>	<u>12</u>	Yes	FACU																																	
3. <u>Hamamelis virginiana</u>	<u>12</u>	Yes	FACU																																	
4. <u>Betula lenta</u>	<u>5</u>	No	FACU																																	
5. <u>Pinus strobus</u>	<u>3</u>	No	FACU																																	
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
<u>44</u> = Total Cover 50% of total cover: <u>22</u> 20% of total cover: <u>8.8</u>																																				
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																				
1. <u>Dennstaedtia punctilobula</u>	<u>15</u>	Yes	FACU	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																																
2. <u>Polygonatum biflorum</u>	<u>5</u>	Yes	FACU																																	
3. <u>Viola canadensis</u>	<u>2</u>	No	FAC																																	
4. <u>Uvularia perfoliata</u>	<u>2</u>	No	FACU																																	
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
11. _____																																				
<u>24</u> = Total Cover 50% of total cover: <u>12</u> 20% of total cover: <u>4.8</u>																																				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																																				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																																				
Remarks: (Include photo numbers here or on a separate sheet.)																																				

**SOIL**

Sampling Point: whia407\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 2/1	100					L	
3-8	10YR 4/3	100					L	
8-18	10YR 5/6	100					SCL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:



**Photo 1**  
Upland data point WHIA407\_u facing west



**Photo 2**  
Upland data point WHIA407\_u facing south



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/4/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia406f\_w  
 Investigator(s): GB, SA Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 5  
 Subregion (LRR or MLRA): S Lat: 38.30580804 Long: -79.77594126 Datum: WGS 1984  
 Soil Map Unit Name: Macove channery silt loam, 3 to 15 percent slopes, very stony NWI classification: None

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

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

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

Saturated PFO wetland located in a swale on the floodplain of perennial stream Lick Draft - shia408; hydrology from spring phia404 located at toe of slope; surface connection to stream; strip of fill for old road bed crosses wetland, no culvert in place. NCWAM category = seep.

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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**Field Observations:**

Surface Water Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes  No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes  No  Depth (inches): 0  
 (includes capillary fringe)

**Wetland Hydrology Present?** Yes  No

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

**Remarks:**

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

Sampling Point: whia406f\_w

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30</u> )					
1. <i>Fraxinus pennsylvanica</i>	12	Yes	FACW	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.55555555</u> (A/B)	
2. <i>Tsuga canadensis</i>	10	Yes	FACU		
3. <i>Acer rubrum</i>	8	Yes	FAC		
4. <i>Carya ovata</i>	6	No	FACU		
5. <i>Acer saccharum</i>	4	No	FACU		
6. _____					
7. _____					
40 = Total Cover				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species <u>20</u> x 1 = <u>20</u> FACW species <u>22</u> x 2 = <u>44</u> FAC species <u>31</u> x 3 = <u>93</u> FACU species <u>42</u> x 4 = <u>168</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>115</u> (A) <u>325</u> (B)  Prevalence Index = B/A = <u>2.82</u>	
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>			
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					
1. <i>Acer rubrum</i>	5	Yes	FAC		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <i>Fraxinus pennsylvanica</i>	5	Yes	FACW		
3. <i>Fagus grandifolia</i>	4	Yes	FACU		
4. <i>Hamamelis virginiana</i>	4	Yes	FACU		
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
18 = Total Cover					
50% of total cover: <u>9</u>		20% of total cover: <u>3.6</u>			
<b>Herb Stratum</b> (Plot size: <u>5</u> )					
1. <i>Glyceria striata</i>	20	Yes	OBL	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
2. <i>Podophyllum peltatum</i>	10	Yes	FACU		
3. <i>Laportea canadensis</i>	6	No	FAC		
4. <i>Impatiens capensis</i>	5	No	FACW		
5. <i>Carex blanda</i>	5	No	FAC		
6. <i>Geum aleppicum</i>	4	No	FAC		
7. <i>Geranium maculatum</i>	4	No	FACU		
8. <i>Dryopteris carthusiana</i>	3	No	FAC		
9. _____					
10. _____					
11. _____					
57 = Total Cover					
50% of total cover: <u>28.5</u>		20% of total cover: <u>11.4</u>			
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )					
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
0 = Total Cover					
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>			
Remarks: (Include photo numbers here or on a separate sheet.)					

**SOIL**

Sampling Point: whia406f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/1	100					SIL	
3-8	10YR 4/2	100					SICL	
8-18	10YR 5/2	90	10YR 5/8	10	C	PL/M	SIC	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>silty clay</u> Depth (inches): <u>8</u>	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Remarks:



**Photo 1**  
Wetland datapoint whia406f\_w facing west



**Photo 2**  
Wetland datapoint whia406f\_w facing east

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Highland County Sampling Date: 5/4/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: whia406\_u  
 Investigator(s): GB, SA Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 12  
 Subregion (LRR or MLRA): S Lat: 38.30592931 Long: -79.77618098 Datum: WGS 1984  
 Soil Map Unit Name: Macove channery silt loam, 3 to 15 percent slopes, very stony NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point taken above toe of slope for a saturated PFO wetland located within a swale on the floodplain of Lick Draft.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 no hydrology indicators present

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

Sampling Point: whia406\_u

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30</u> )					
1. <i>Tsuga canadensis</i>	20	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>7</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)	
2. <i>Quercus alba</i>	20	Yes	FACU		
3. <i>Liriodendron tulipifera</i>	15	Yes	FACU		
4. <i>Acer saccharum</i>	10	No	FACU		
5. <i>Fraxinus pennsylvanica</i>	5	No	FACW		
6. _____					
7. _____					
_____ = Total Cover 50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____    Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>8</u> x 2 = <u>16</u> FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>120</u> x 4 = <u>480</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>138</u> (A) <u>526</u> (B)  Prevalence Index = B/A = <u>3.81</u>	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )					
1. <i>Betula lenta</i>	10	Yes	FACU		
2. <i>Tsuga canadensis</i>	10	Yes	FACU		
3. <i>Fagus grandifolia</i>	5	No	FACU		
4. <i>Hamamelis virginiana</i>	5	No	FACU		
5. <i>Fraxinus pennsylvanica</i>	3	No	FACW		
6. _____					
7. _____					
8. _____					
9. _____					
_____ = Total Cover 50% of total cover: <u>16.5</u> 20% of total cover: <u>6.6</u>					
<b>Herb Stratum</b> (Plot size: <u>5</u> )					
1. <i>Dennstaedtia punctilobula</i>	15	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
2. <i>Podophyllum peltatum</i>	10	Yes	FACU		
3. <i>Carex blanda</i>	5	No	FAC		
4. <i>Viola canadensis</i>	5	No	FAC		
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
_____ = Total Cover 50% of total cover: <u>17.5</u> 20% of total cover: <u>7</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )					
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>	
Remarks: (Include photo numbers here or on a separate sheet.)					

**SOIL**

Sampling Point: whia406\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 3/2	100					SL	
2-5	10YR 4/3	100					SL	
5-13	10YR 5/6	100					SCL	rock at 13"

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:



**Photo 1**  
Upland data point whia406\_u facing north



**Photo 2**  
Upland data point whia406\_u facing west



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Bath County Sampling Date: 10/29/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: wbaa005f\_w  
 Investigator(s): GB, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): microtopography Slope (%): 2  
 Subregion (LRR or MLRA): S Lat: 38.11213301 Long: -79.59107438 Datum: WGS 1984  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: PFO

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: Saturated PFO wetland located on the floodplain of and connected to perennial stream sbaa019; stream sbaa003 ends within the wetland as the channel is lost upon entry; NCWAM key = Headwater Forest.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: wbaa005f\_w

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )																				
1. <i>Quercus alba</i>	10	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A)  Total Number of Dominant Species Across All Strata: <u>9</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77.77777777</u> (A/B)																
2. <i>Nyssa sylvatica</i>	10	Yes	FAC																	
3. <i>Acer rubrum</i>	10	Yes	FAC																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="text-align: right;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>13</u></td> <td>x 2 = <u>26</u></td> </tr> <tr> <td>FAC species <u>49</u></td> <td>x 3 = <u>147</u></td> </tr> <tr> <td>FACU species <u>16</u></td> <td>x 4 = <u>64</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>88</u> (A)</td> <td><u>247</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>13</u>	x 2 = <u>26</u>	FAC species <u>49</u>	x 3 = <u>147</u>	FACU species <u>16</u>	x 4 = <u>64</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>88</u> (A)	<u>247</u> (B)	Prevalence Index = B/A = <u>2.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>13</u>	x 2 = <u>26</u>																			
FAC species <u>49</u>	x 3 = <u>147</u>																			
FACU species <u>16</u>	x 4 = <u>64</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>88</u> (A)	<u>247</u> (B)																			
Prevalence Index = B/A = <u>2.8</u>																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																				
1. <i>Pinus strobus</i>	6	Yes	FACU																	
2. <i>Acer rubrum</i>	4	Yes	FAC																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
<b>Herb Stratum</b> (Plot size: <u>5</u> )																				
1. <i>Microstegium vimineum</i>	15	Yes	FAC																	
2. <i>Carex gynandra</i>	10	Yes	OBL																	
3. <i>Dichanthelium clandestinum</i>	10	Yes	FAC																	
4. <i>Packera aurea</i>	10	Yes	FACW																	
5. <i>Viola cucullata</i>	3	No	FACW																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ = Total Cover 50% of total cover: <u>24</u> 20% of total cover: <u>9.6</u>																				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																				
1. <i>none</i>	0	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																				
<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																				
Remarks: (Include photo numbers here or on a separate sheet.)    																				

**SOIL**

Sampling Point: wbaa005f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/2	100					SCL	
3-8	10YR 4/2	100					SCL	
8-18	10YR 4/1	94	10YR 5/8	6	C	PL/M	CL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No _____
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Remarks:



Wetland data point WBAA005f\_w facing north



Wetland data point WBAA005f\_w facing west

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Bath County Sampling Date: 10/29/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: wbaa005\_u  
 Investigator(s): GB, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): none Slope (%): 4  
 Subregion (LRR or MLRA): S Lat: 38.11210583 Long: -79.59114804 Datum: WGS 1984  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: UPLAND

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Upland data point taken on the toe of slope above a saturated PFO wetland located on the floodplain of perennial stream sbaa019.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1)      ___ True Aquatic Plants (B14) ___ High Water Table (A2)      ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3)      ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1)      ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2)      ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3)      ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4)      ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

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

Sampling Point: wbaa005\_u

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				
1. <i>Quercus alba</i>	45	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33333333</u> (A/B)
2. <i>Acer rubrum</i>	12	No	FAC	
3. <i>Pinus strobus</i>	10	No	FACU	
4. <i>Quercus rubra</i>	5	No	FACU	
5. _____				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>32</u> x 3 = <u>96</u> FACU species <u>94</u> x 4 = <u>376</u> UPL species <u>6</u> x 5 = <u>30</u> Column Totals: <u>132</u> (A) <u>502</u> (B)  Prevalence Index = B/A = <u>3.8</u>
6. _____				
7. _____				
8. _____				
$\frac{72}{100} = \text{Total Cover}$ 50% of total cover: <u>36</u> 20% of total cover: <u>14.4</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. <i>Cornus florida</i>	12	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <i>Acer rubrum</i>	10	Yes	FAC	
3. <i>Pinus strobus</i>	6	No	FACU	
4. <i>Ostrya virginiana</i>	6	No	FACU	
5. _____				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____				
7. _____				
8. _____				
$\frac{34}{100} = \text{Total Cover}$ 50% of total cover: <u>17</u> 20% of total cover: <u>6.8</u>				
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. <i>Microstegium vimineum</i>	10	Yes	FAC	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. <i>Elymus hystrix</i>	6	Yes	UPL	
3. <i>Bromus pubescens</i>	6	Yes	FACU	
4. <i>Luzula multiflora</i>	4	No	FACU	
5. <i>Potentilla canadensis</i>	4	No		<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
6. _____				
7. _____				
8. _____				
$\frac{30}{100} = \text{Total Cover}$ 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				
1. <i>none</i>	0			<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
2. _____				
3. _____				
4. _____				
5. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
6. _____				
7. _____				
8. _____				
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				





Upland data point WBAA005\_u facing southwest



Upland data point WBAA005\_u facing northwest



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 9/27/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: waua411e\_w  
 Investigator(s): GB, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): drainage way Local relief (concave, convex, none): concave Slope (%): 3  
 Subregion (LRR or MLRA): S Lat: 38.28070879 Long: -79.31026212 Datum: WGS 1984  
 Soil Map Unit Name: Ernest silt loam, 0 to 7 percent slopes NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
abutting sau436	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>1</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: waua411e\_w

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>20</u> (A)</td> <td><u>40</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>20</u> (A)	<u>40</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>20</u>	x 2 = <u>40</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>20</u> (A)	<u>40</u> (B)																	
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)														
1. <u>Packera aurea</u>	15	Yes	FACW															
2. <u>Juncus effusus</u>	5	Yes	FACW															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
_____ = Total Cover																		
50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) also noted a Carex sp. Unable to identify due to time of year																		

**SOIL**

Sampling Point: waua411e\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 3/1	95	10YR 4/6	5	C	PL	SCL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> ( <b>MLRA 147, 148</b> )	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> ( <b>MLRA 136, 147</b> )	
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input checked="" type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> )	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )		

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

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

Remarks:

NCWAM: non-tidal freshwater marsh



**Photo 1**  
Wetland data point waua411e\_w facing east



**Photo 2**  
Wetland data point waua411e\_w facing north

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 9/27/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: waua411\_u  
 Investigator(s): GB, AS Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): hill slope Local relief (concave, convex, none): none Slope (%): 25  
 Subregion (LRR or MLRA): S Lat: 38.28072059 Long: -79.31034795 Datum: WGS 1984  
 Soil Map Unit Name: Ernest silt loam, 0 to 7 percent slopes NWI classification: None

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

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

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

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: waua411\_u

	Absolute % Cover	Dominant Species?	Indicator Status																													
<b>Tree Stratum</b> (Plot size: <u>30</u> )																																
1. <i>Pinus strobus</i>	60	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)																												
2. _____																																
3. _____																																
4. _____																																
5. _____																																
6. _____																																
7. _____																																
50% of total cover: <u>40</u>	<u>60</u>	= Total Cover		<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right;">Total % Cover of:</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 3 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">FAC species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 4 =</td> <td style="text-align:center;"><u>340</u></td> </tr> <tr> <td style="text-align:right;">FACU species</td> <td style="text-align:center;"><u>85</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">UPL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 5 =</td> <td style="text-align:center;"><u>0</u></td> </tr> <tr> <td style="text-align:right;">Column Totals:</td> <td style="text-align:center;"><u>85</u></td> <td style="text-align:center;">(A)</td> <td style="text-align:center;"><u>340</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4</u>	Total % Cover of:	<u>0</u>	x 1 =	<u>0</u>	OBL species	<u>0</u>	x 2 =	<u>0</u>	FACW species	<u>0</u>	x 3 =	<u>0</u>	FAC species	<u>0</u>	x 4 =	<u>340</u>	FACU species	<u>85</u>	x 5 =	<u>0</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>85</u>	(A)	<u>340</u> (B)
Total % Cover of:	<u>0</u>	x 1 =	<u>0</u>																													
OBL species	<u>0</u>	x 2 =	<u>0</u>																													
FACW species	<u>0</u>	x 3 =	<u>0</u>																													
FAC species	<u>0</u>	x 4 =	<u>340</u>																													
FACU species	<u>85</u>	x 5 =	<u>0</u>																													
UPL species	<u>0</u>	x 5 =	<u>0</u>																													
Column Totals:	<u>85</u>	(A)	<u>340</u> (B)																													
<u>60</u> = Total Cover																																
20% of total cover: <u>16</u>																																
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																
1. <i>Pinus strobus</i>	20	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																												
2. <i>Carya ovata</i>	5	Yes	FACU																													
3. _____																																
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
50% of total cover: <u>12.5</u>	<u>25</u>	= Total Cover																														
20% of total cover: <u>5</u>																																
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																												
2. _____																																
3. _____																																
4. _____																																
5. _____																																
6. _____																																
7. _____																																
8. _____																																
9. _____																																
10. _____																																
11. _____																																
50% of total cover: <u>5</u>	<u>0</u>	= Total Cover																														
20% of total cover: <u>2</u>																																
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																																
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																												
2. _____																																
3. _____																																
4. _____																																
5. _____																																
50% of total cover: <u>0</u>	<u>0</u>	= Total Cover																														
20% of total cover: <u>0</u>																																

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

**SOIL**

Sampling Point: waua411\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	7.5YR 4/4	100					SCL	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

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

Remarks:



**Photo 1**  
Upland data point waua411\_u facing north



**Photo 2**  
Upland data point waua411\_u facing west



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 9/20/2016  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua408f\_w  
 Investigator(s): Team A Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR or MLRA): S Lat: 38.28384841 Long: -79.28858026 Datum: WGS 1984  
 Soil Map Unit Name: Craigsville fine sandy loam NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Small depressional wetland located within the floodplain of a perennial stream (Dowells Draft).	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
---	---

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:  
 Wetland hydrology indicators present

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

Sampling Point: waua408f\_w

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				
1. <u>Acer rubrum</u>	<u>15</u>	Yes	FAC	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
50% of total cover: <u>7.5</u>	<u>15</u>	= Total Cover		
20% of total cover: <u>3</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
50% of total cover: <u>0</u>	<u>0</u>	= Total Cover		
20% of total cover: <u>0</u>				
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
50% of total cover: <u>0</u>	<u>0</u>	= Total Cover		
20% of total cover: <u>0</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
50% of total cover: <u>0</u>	<u>0</u>	= Total Cover		
20% of total cover: <u>0</u>				
<b>Dominance Test worksheet:</b>				
Number of Dominant Species That Are OBL, FACW, or FAC:		<u>1</u>	(A)	
Total Number of Dominant Species Across All Strata:		<u>1</u>	(B)	
Percent of Dominant Species That Are OBL, FACW, or FAC:		<u>100</u>	(A/B)	
<b>Prevalence Index worksheet:</b>				
Total % Cover of:		Multiply by:		
OBL species	<u>0</u>	x 1 =	<u>0</u>	
FACW species	<u>0</u>	x 2 =	<u>0</u>	
FAC species	<u>15</u>	x 3 =	<u>45</u>	
FACU species	<u>0</u>	x 4 =	<u>0</u>	
UPL species	<u>0</u>	x 5 =	<u>0</u>	
Column Totals:	<u>15</u>	(A)	<u>45</u>	(B)
Prevalence Index = B/A =		<u>3</u>		
<b>Hydrophytic Vegetation Indicators:</b>				
<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation				
<input checked="" type="checkbox"/> 2 - Dominance Test is >50%				
<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>				
<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)				
<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)				
<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Definitions of Four Vegetation Strata:</b>				
<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.				
<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.				
<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: waua408f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	2.5 Y 4/2	97	10 YR 6/8	3	C	PL/M	SICL	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

<b>Restrictive Layer (if observed):</b> Type: <u>Rock</u> Depth (inches): <u>8</u>	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:  
Hydric soil present



**Photo 1**  
Wetland data point waua408f\_w facing west

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 4/22/2015  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua408\_u  
 Investigator(s): Team C Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR or MLRA): S Lat: 38.28385244 Long: -79.2884997 Datum: WGS 1984  
 Soil Map Unit Name: Craigsville fine sandy loam NWI classification: None

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

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

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

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No wetland hydrology indicators present

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

Sampling Point: waua408\_u

	Absolute % Cover	Dominant Species?	Indicator Status																																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )																																				
1. <i>Pinus strobus</i>	50	Yes	FACU	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33333333</u> (A/B)																																
2. <i>Quercus alba</i>	10	No	FACU																																	
3. <i>Tsuga canadensis</i>	5	No	FACU																																	
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
_____ = Total Cover 50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right">Total % Cover of:</td> <td style="text-align:center">_____</td> <td style="text-align:right">Multiply by:</td> <td style="text-align:center">_____</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center"><u>0</u></td> <td>x 1 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center"><u>0</u></td> <td>x 2 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center"><u>10</u></td> <td>x 3 =</td> <td style="text-align:center"><u>30</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center"><u>80</u></td> <td>x 4 =</td> <td style="text-align:center"><u>320</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center"><u>0</u></td> <td>x 5 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center"><u>90</u> (A)</td> <td></td> <td style="text-align:center"><u>350</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:center">Prevalence Index = B/A = <u>3.88</u></td> </tr> </table>	Total % Cover of:	_____	Multiply by:	_____	OBL species	<u>0</u>	x 1 =	<u>0</u>	FACW species	<u>0</u>	x 2 =	<u>0</u>	FAC species	<u>10</u>	x 3 =	<u>30</u>	FACU species	<u>80</u>	x 4 =	<u>320</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>90</u> (A)		<u>350</u> (B)	Prevalence Index = B/A = <u>3.88</u>			
Total % Cover of:	_____	Multiply by:	_____																																	
OBL species	<u>0</u>	x 1 =	<u>0</u>																																	
FACW species	<u>0</u>	x 2 =	<u>0</u>																																	
FAC species	<u>10</u>	x 3 =	<u>30</u>																																	
FACU species	<u>80</u>	x 4 =	<u>320</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>90</u> (A)		<u>350</u> (B)																																	
Prevalence Index = B/A = <u>3.88</u>																																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																				
1. <i>Acer rubrum</i>	10	Yes	FAC	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
_____ = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																																				
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																				
1. <i>Kalmia latifolia</i>	15	Yes	FACU	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																																
2. _____																																				
3. _____																																				
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6. _____																																				
7. _____																																				
8. _____																																				
9. _____																																				
10. _____																																				
11. _____																																				
_____ = Total Cover 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>																																				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																																				
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>																																
2. _____																																				
3. _____																																				
4. _____																																				
5. _____																																				
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																																				

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

**SOIL**

Sampling Point: waua408\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10 YR 3/2	100					SICL	
3-16	10 YR 6/4	100					SICL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)		
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)		
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

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



**Photo 1**  
Upland data point wua408\_u facing north



## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 9/20/2016  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua409s\_w  
 Investigator(s): Team A Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Drainage System Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR or MLRA): S Lat: 38.29175048 Long: -79.23425105 Datum: WGS 1984  
 Soil Map Unit Name: Monongahela cobbly fine sandy loam, 0 to 7 percent slopes NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Wetland located within drainage pattern. Northwest of the centerline the drainage pattern continues, but the area lacks hydric soil. The wetland ends where the drainage pattern is down cut and hydric soils are present.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
--	--

<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:  
 Wetland hydrology indicators present

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

Sampling Point: waua409s\_w

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>																		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>225</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.64</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>70</u>	x 3 = <u>210</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>225</u> (B)	Prevalence Index = B/A = <u>2.64</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>15</u>	x 1 = <u>15</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>70</u>	x 3 = <u>210</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>85</u> (A)	<u>225</u> (B)																			
Prevalence Index = B/A = <u>2.64</u>																				
1. <u>Acer rubrum</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>22.5</u>		20% of total cover: <u>9</u>																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)																
1. <u>Viola sororia</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Rosa palustris</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>20</u>		20% of total cover: <u>8</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
_____ = Total Cover																				
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>																		
Remarks: (Include photo numbers here or on a separate sheet.)																				

**SOIL**

Sampling Point: waua409s\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	2.5 Y 4/2	98	10 YR 4/6	2	C	PL	CL	
2-16	2.5 Y 6/1	95	2.5 Y 6/6	5	C	PL/M	CL	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> (MLRA 147, 148)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> (MLRA 136, 147)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

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



**Photo 1**  
Wetland data point waua409s\_w facing west

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta Sampling Date: 9/23/2016  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua409\_u  
 Investigator(s): Team A Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Hill Slope Local relief (concave, convex, none): none Slope (%): 3  
 Subregion (LRR or MLRA): S Lat: 38.29181236 Long: -79.23439231 Datum: WGS 1984  
 Soil Map Unit Name: Monongahela cobbly fine sandy loam, 0 to 7 percent slopes NWI classification: None

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

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

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

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:  
 No hydrology indicators present

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

Sampling Point: waua409\_u

Tree Stratum (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33333333</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>63</u></td> <td>x 4 = <u>252</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>78</u> (A)</td> <td><u>297</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.8</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>63</u>	x 4 = <u>252</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>78</u> (A)	<u>297</u> (B)	Prevalence Index = B/A = <u>3.8</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>63</u>	x 4 = <u>252</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>78</u> (A)	<u>297</u> (B)																			
Prevalence Index = B/A = <u>3.8</u>																				
Sapling/Shrub Stratum (Plot size: <u>15</u> )																				
1. <i>Acer rubrum</i>	15	Yes	FAC																	
2. <i>Kalmia latifolia</i>	10	Yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
$\frac{25}{25} = \text{Total Cover}$ 50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>																				
Herb Stratum (Plot size: <u>5</u> )																				
1. <i>Potentilla simplex</i>	45	Yes	FACU	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Gaultheria procumbens</i>	5	No	FACU																	
3. <i>Andropogon virginicus</i>	3	No	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
$\frac{53}{53} = \text{Total Cover}$ 50% of total cover: <u>26.5</u> 20% of total cover: <u>10.6</u>																				
Woody Vine Stratum (Plot size: <u>30</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>																

**SOIL**

Sampling Point: waua409\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	10 YR 5/6	100					L	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) <b>(MLRA 147)</b>
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) <b>(MLRA 147, 148)</b>	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) <b>(MLRA 147, 148)</b>	<b>(MLRA 147, 148)</b>
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<b>(MLRA 136, 147)</b>
<input type="checkbox"/> 2 cm Muck (A10) <b>(LRR N)</b>	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) <b>(LRR N, MLRA 147, 148)</b>	<input type="checkbox"/> Iron-Manganese Masses (F12) <b>(LRR N, MLRA 136)</b>	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) <b>(MLRA 136, 122)</b>	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) <b>(MLRA 148)</b>	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) <b>(MLRA 127, 147)</b>	

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
 No hydric soil indicators present

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta County Sampling Date: 1/14/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: waua062f\_w  
 Investigator(s): GB, SA Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0  
 Subregion (LRR or MLRA): N Lat: 37.95267574 Long: -78.95497548 Datum: WGS 1984  
 Soil Map Unit Name: Craigsville fine sandy loam NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Saturated to temporarily flooded PFO wetland in a localized depression on a flat below toe of slope; flat is historic floodplain of Back Creek; basin wetland is closest NCWAM category.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>          </u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>14</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



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

Sampling Point: waua062f\_w

	Absolute % Cover	Dominant Species?	Indicator Status																																								
<b>Tree Stratum</b> (Plot size: <u>30</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)																																							
1. <i>Nyssa sylvatica</i>	30	Yes	FAC																																								
2. <i>Carya ovata</i>	15	Yes	FACU																																								
3. _____																																											
4. _____																																											
5. _____																																											
6. _____																																											
7. _____																																											
$\frac{45}{100} = \text{Total Cover}$ 50% of total cover: <u>22.5</u> 20% of total cover: <u>9</u>																																											
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																																											
1. <i>Nyssa sylvatica</i>	15	Yes	FAC	<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:10%; text-align:center">Total % Cover of:</td> <td style="width:10%;"></td> <td style="width:10%; text-align:center">Multiply by:</td> <td style="width:15%;"></td> </tr> <tr> <td>OBL species</td> <td style="text-align:center"><u>0</u></td> <td></td> <td style="text-align:center">x 1 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center"><u>0</u></td> <td></td> <td style="text-align:center">x 2 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center"><u>50</u></td> <td></td> <td style="text-align:center">x 3 =</td> <td style="text-align:center"><u>150</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center"><u>15</u></td> <td></td> <td style="text-align:center">x 4 =</td> <td style="text-align:center"><u>60</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center"><u>0</u></td> <td></td> <td style="text-align:center">x 5 =</td> <td style="text-align:center"><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center"><u>65</u></td> <td style="text-align:center">(A)</td> <td></td> <td style="text-align:center"><u>210</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align:right">Prevalence Index = B/A = <u>3.23</u></td> </tr> </table>		Total % Cover of:		Multiply by:		OBL species	<u>0</u>		x 1 =	<u>0</u>	FACW species	<u>0</u>		x 2 =	<u>0</u>	FAC species	<u>50</u>		x 3 =	<u>150</u>	FACU species	<u>15</u>		x 4 =	<u>60</u>	UPL species	<u>0</u>		x 5 =	<u>0</u>	Column Totals:	<u>65</u>	(A)		<u>210</u> (B)	Prevalence Index = B/A = <u>3.23</u>			
	Total % Cover of:		Multiply by:																																								
OBL species	<u>0</u>		x 1 =		<u>0</u>																																						
FACW species	<u>0</u>		x 2 =		<u>0</u>																																						
FAC species	<u>50</u>		x 3 =		<u>150</u>																																						
FACU species	<u>15</u>		x 4 =		<u>60</u>																																						
UPL species	<u>0</u>		x 5 =		<u>0</u>																																						
Column Totals:	<u>65</u>	(A)			<u>210</u> (B)																																						
Prevalence Index = B/A = <u>3.23</u>																																											
2. <i>Carpinus caroliniana</i>	5	Yes	FAC																																								
3. _____																																											
4. _____																																											
5. _____																																											
6. _____																																											
7. _____																																											
8. _____																																											
9. _____																																											
$\frac{20}{100} = \text{Total Cover}$ 50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																																											
<b>Herb Stratum</b> (Plot size: <u>5</u> )																																											
1. _____																																											
2. _____																																											
3. _____																																											
4. _____																																											
5. _____																																											
6. _____																																											
7. _____																																											
8. _____																																											
9. _____																																											
10. _____																																											
11. _____																																											
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																																											
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																																											
1. _____																																											
2. _____																																											
3. _____																																											
4. _____																																											
5. _____																																											
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																																											
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																																											
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.) no vines rooted within boundary, herbaceous layer is dormant and there are no identifiable remnants present																																											

**SOIL**

Sampling Point: waua062f\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/1	100					SIL	
6-18	10YR 5/2	65	10YR 5/8	35	C	PL/M	SICL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	Hydric Soil Present?    Yes <input checked="" type="checkbox"/> No _____
---	--

Remarks:



**Photo 1**  
Wetland data point WAUA062f\_w facing northeast



**Photo 2**  
Wetland data point WAUA062f\_w facing southwest

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta County Sampling Date: 1/14/2016  
 Applicant/Owner: Dominion State: VA Sampling Point: waua062\_u  
 Investigator(s): GB, SA Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 2  
 Subregion (LRR or MLRA): N Lat: 37.95268957 Long: -78.95506854 Datum: WGS 1984  
 Soil Map Unit Name: Craigsville fine sandy loam NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Upland data point for a saturated to temporarily flooded PFO wetland located in a localized depression on a flat.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: no hydrology indicators present	

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

Sampling Point: waua062\_u

	Absolute % Cover	Dominant Species?	Indicator Status																	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37.5</u> (A/B)																
1. <u>Nyssa sylvatica</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Carya ovata</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Carya cordiformis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Liriodendron tulipifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
$\frac{65}{100} = \text{Total Cover}$ 50% of total cover: <u>32.5</u> 20% of total cover: <u>13</u>																				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																				
1. <u>Nyssa sylvatica</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	<b>Prevalence Index worksheet:</b> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: right;">Total % Cover of:</td> <td style="width:50%; text-align: left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>64</u></td> <td>x 4 = <u>256</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>104</u> (A)</td> <td><u>376</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.61</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>64</u>	x 4 = <u>256</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>104</u> (A)	<u>376</u> (B)	Prevalence Index = B/A = <u>3.61</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>40</u>	x 3 = <u>120</u>																			
FACU species <u>64</u>	x 4 = <u>256</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>104</u> (A)	<u>376</u> (B)																			
Prevalence Index = B/A = <u>3.61</u>																				
2. <u>Acer rubrum</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Kalmia latifolia</u>	<u>4</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Carya cordiformis</u>	<u>4</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Carya ovata</u>	<u>4</u>	<u>Yes</u>	<u>FACU</u>																	
6. <u>Magnolia acuminata</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Betula lenta</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
$\frac{33}{100} = \text{Total Cover}$ 50% of total cover: <u>16.5</u> 20% of total cover: <u>6.6</u>																				
<b>Herb Stratum</b> (Plot size: <u>5</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																				
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																				
1. <u>Smilax smallii</u>	<u>6</u>	<u>Yes</u>	<u>FACU</u>	<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
$\frac{6}{100} = \text{Total Cover}$ 50% of total cover: <u>3</u> 20% of total cover: <u>1.2</u>																				
Remarks: (Include photo numbers here or on a separate sheet.) herbaceous layer is dormant and there are no identifiable remnants																				

**SOIL**

Sampling Point: waua062\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR 3/2	100					SL	
3-10	10YR 4/3	100					SL	
10-18	10YR 4/4	100					SL	

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> (MLRA 147, 148)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> (MLRA 136, 147)	
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)		

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

<b>Restrictive Layer (if observed):</b> Type: <u>none</u> Depth (inches): _____	Hydric Soil Present?    Yes _____    No <input checked="" type="checkbox"/>
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Remarks:



**Photo 1**  
Upland data point WAUA062\_u facing northeast



**Photo 2**  
Upland data point WAUA062\_u facing southwest

## WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Atlantic Coast Pipeline City/County: Augusta County Sampling Date: 9/24/2016  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua410e\_w  
 Investigator(s): Team A Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Seep Local relief (concave, convex, none): none Slope (%): 50  
 Subregion (LRR or MLRA): N Lat: 37.9518264 Long: -78.95511911 Datum: WGS 1984  
 Soil Map Unit Name: Low bouldery silt loam, 10 to 45 percent slopes NWI classification: None

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

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

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

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>20</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>4</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

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

Remarks:  
 Wetland hydrology indicators present



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

Sampling Point: waua410e\_w

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30</u> )				<b>Dominance Test worksheet:</b>
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>0</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u> = Total Cover			<b>Prevalence Index worksheet:</b>
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		Total % Cover of: _____ Multiply by:
				OBL species _____ x 1 = _____
				FACW species _____ x 2 = _____
				FAC species _____ x 3 = _____
				FACU species _____ x 4 = _____
				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )				<b>Hydrophytic Vegetation Indicators:</b>
1. _____	_____	_____	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%
3. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
	<u>0</u> = Total Cover			<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		<b>Definitions of Four Vegetation Strata:</b>
				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
				<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Herb Stratum</b> (Plot size: <u>5</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
50% of total cover: <u>0</u>		20% of total cover: <u>0</u>		
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b>
No vegetation within wetland				Yes _____ No <input checked="" type="checkbox"/>

**SOIL**

Sampling Point: waua410e\_w

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	2.5 Y 4/3	100					SL	
6-16	5 Y 6/1	80	10 YR 4/6	20	C	PL/M	SCL	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

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

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



**Photo 1**  
Wetland data point waua410e\_w facing northeast



**Photo 2**  
Wetland data point waua410e\_w facing southeast

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: Atlantic Coast Pipeline City/County: Augusta County Sampling Date: 9/24/2016  
 Applicant/Owner: DOMINION State: VA Sampling Point: waua410\_u  
 Investigator(s): Team A Section, Township, Range: No PLSS in this area  
 Landform (hillslope, terrace, etc.): Hill Slope Local relief (concave, convex, none): none Slope (%): 50  
 Subregion (LRR or MLRA): N Lat: 37.95187593 Long: -78.95510389 Datum: WGS 1984  
 Soil Map Unit Name: Low bouldery silt loam, 10 to 45 percent slopes NWI classification: None

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: No wetland hydrology indicators present	

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

Sampling Point: waua410\_u

	Absolute % Cover	Dominant Species?	Indicator Status															
<b>Tree Stratum</b> (Plot size: <u>30</u> )																		
1. <i>Quercus montana</i>	40	Yes	UPL	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33333333</u> (A/B)														
2. <i>Quercus rubra</i>	15	Yes	FACU															
3. <i>Acer rubrum</i>	15	Yes	FAC															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
$\frac{70}{100} = \text{Total Cover}$ 50% of total cover: <u>35</u> 20% of total cover: <u>14</u>				<b>Prevalence Index worksheet:</b> <table style="width:100%; border:none;"> <tr> <td style="text-align:right">Total % Cover of:</td> <td style="text-align:center">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>47</u></td> <td>x 5 = <u>235</u></td> </tr> <tr> <td>Column Totals: <u>92</u> (A)</td> <td><u>390</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>4.23</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>47</u>	x 5 = <u>235</u>	Column Totals: <u>92</u> (A)	<u>390</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>25</u>	x 3 = <u>75</u>																	
FACU species <u>20</u>	x 4 = <u>80</u>																	
UPL species <u>47</u>	x 5 = <u>235</u>																	
Column Totals: <u>92</u> (A)	<u>390</u> (B)																	
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15</u> )																		
1. <i>Lindera benzoin</i>	10	Yes	FAC		<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)													
2. <i>Pinus strobus</i>	5	Yes	FACU															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
$\frac{15}{100} = \text{Total Cover}$ 50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>																		
<b>Herb Stratum</b> (Plot size: <u>5</u> )																		
1. <i>Quercus montana</i>	7	Yes	UPL	<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
$\frac{7}{100} = \text{Total Cover}$ 50% of total cover: <u>3.5</u> 20% of total cover: <u>1.4</u>																		
<b>Woody Vine Stratum</b> (Plot size: <u>30</u> )																		
1. _____				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
$\frac{0}{100} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>																		

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

**SOIL**

Sampling Point: waua410\_u

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-16	2.5 Y 6/8	100					SL	

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

<b>Hydric Soil Indicators:</b>		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> Coast Prairie Redox (A16)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )	<input type="checkbox"/> ( <b>MLRA 147, 148</b> )	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Piedmont Floodplain Soils (F19)	
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> ( <b>MLRA 136, 147</b> )	
<input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147, 148</b> )	<input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> )		
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )		
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )		
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) ( <b>MLRA 127, 147</b> )		

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

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:  
 No hydric soil indicators present



**Photo 1**  
Upland data point waua410\_u facing northeast



**Photo 2**  
Upland data point waua410\_u facing southeast