Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 3**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	ORANGEBURG-FACEVILLE SANDY LOAMS

Summary of Findings: **UPLAND BETWEEN TOWERS 211/21 AND 211/22.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Andropogon virginicus	Herbaceous	FAC	25
Eupatorium capillifolium	Herbaceous	FACU	15

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	10
Dichanthelium scabriusculum	Herbaceous	OBL	10
Solidago altissima	Herbaceous	FACU	5

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-12	10YR 5/3	98	7.5YR 5/6	2	C	M	FINE SANDY LOAM
12-20	7.5YR 4/6	90	7.5YR 5/3	10	INCLUSION	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 4**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **UPLAND IN DEPRESSION NEAR LINE BYA.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1E
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Andropogon virginicus	Herbaceous	FAC	45

Non-Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	15
Solidago altissima	Herbaceous	FACU	10
Lespedeza cuneata	Herbaceous	FACU	5
Phyllostachys aurea	Herbaceous	UPL	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.1
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-20	10YR 6/3	85	10YR 6/1	15	D	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 5**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BYA-3'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PFO1E
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	3
Juncus effusus	Herbaceous	OBL	35
Symphyotrichum pilosum	Herbaceous	FAC	20

Non-Dominant Species	Stratum	IND	%
Andropogon virginicus	Herbaceous	FAC	5
Dichanthelium scabriusculum	Herbaceous	OBL	5
Rubus argutus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 4/1	100					LOAM
1-12	2.5Y 6/1	98	7.5YR 5/8	2	C	PL	CLAY LOAM
12-20	2.5Y 6/1	85	7.5YR 5/8	15	C	M	CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 6**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	KEMPSVILLE BOURNE COMPLEX

Summary of Findings: **WETLAND SWALE BELOW FLAG 'BYB-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	2-5

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	10
Dichanthelium scabriusculum	Herbaceous	OBL	10
Dichanthelium scoparium	Herbaceous	FACW	10
Smilax rotundifolia	Vine	FAC	5
Lonicera japonica	Vine	FACU	3

Non-Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	5

% Dominant species FAC or wetter: 80%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.1
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 3/1	100					LOAM
3-6	2.5Y 4/1	75	10YR 6/3	20	C	M	SANDY LOAM
			10YR 5/8	5	C	M	
6-20	10YR 6/1	70	10YR 5/6	20	C	M	CLAY LOAM
			10YR 5/2	10	INCLUSION	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 7**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **WETLAND BELOW FLAG 'BYC-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	4-6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: 2

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Juncus effusus	Herbaceous	OBL	45
Scirpus cyperinus	Herbaceous	OBL	15
Dichanthelium scoparium	Herbaceous	FACW	15

Non-Dominant Species	Stratum	IND	%
Carex lurida	Herbaceous	OBL	10
Eupatorium capillifolium	Herbaceous	FACU	5
Rubus argutus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 5/2	98	10YR 3/8	2	C	M	SANDY CLAY LOAM
1-13	10YR 5/1	95	10YR 5/8	5	C	M	LOAMY SAND
13-20	2.5Y 6/1	95	10YR 5/8	5	C	M	LOAMY SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	X Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 8**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **UPLAND ABOVE FLAG 'BYC-7'.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	CONVEX
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	SLOPE
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	4-6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		X Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Andropogon virginicus	Herbaceous	FAC	25
Eupatorium capillifolium	Herbaceous	FACU	15

Non-Dominant Species	Stratum	IND	%
Lycopodium clavatum	Herbaceous	FAC	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	10YR 4/3	100					SANDY LOAM
8-20	2.5Y 6/6	100					SANDY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 9**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **UPLAND ABOVE FLAG 'BYD-11'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	4-6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Juncus effusus	Herbaceous	OBL	20
Schedonorus arundinaceus	Herbaceous	FAC	15

Non-Dominant Species	Stratum	IND	%
Solidago altissima	Herbaceous	FACU	5
Solidago rugosa	Herbaceous	FAC	3
Rubus argutus	Herbaceous	FAC	3
Eupatorium capillifolium	Herbaceous	FACU	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/3	100					SANDY LOAM
1-20	7.5YR 6/8	100					SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 10**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **WETLAND BELOW FLAG 'BYD-11'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PSS1C
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	4-6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Juncus effusus	Herbaceous	OBL	30
Carex lurida	Herbaceous	OBL	15

Non-Dominant Species	Stratum	IND	%
Dichanthelium scabriusculum	Herbaceous	OBL	5
Solidago rugosa	Herbaceous	FAC	5
Scirpus cyperinus	Herbaceous	OBL	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	2.5Y 6/2	80	10YR 6/8	15	C	M	CLAY LOAM
			10YR 6/6	5	C	PL	
3-8	10YR 7/8	90	10YR 6/1	10	D	M	SANDY CLAY LOAM
8-20	10YR 6/1	85	10YR 6/8	15	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 11**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	BOURNE FINE SANDY LOAM

Summary of Findings: **UPLAND WEST OF 'BYF' LINE.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Digitaria sanguinalis	Herbaceous	FACU	50

Non-Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	3

% Dominant species FAC or wetter: O
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 4.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: _____
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	2.5Y 4/2	100					SANDY LOAM
2-5	2.5Y 4/1	98	7.5YR 4/6	2	C	M	FINE SANDY LOAM
5-20	2.5Y 6/3	100					FINE SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 12

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	FLUVAQUENTS

Summary of Findings: **WETLAND BELOW FLAG 'BYH-13'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Liquidambar styraciflua	Shrub	FAC	3
Dichanthelium scoparium	Herbaceous	FACW	35
Andropogon virginicus	Herbaceous	FAC	10
Andropogon glomeratus	Herbaceous	FACW	10
Juncus effusus	Herbaceous	OBL	10
Rhexia virginica	Herbaceous	FACW	10

Non-Dominant Species	Stratum	IND	%
Solidago rugosa	Herbaceous	FAC	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.2
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	2.5Y 4/1	100					CLAY LOAM
5-16	2.5Y 6/2	85	10YR 6/8	10	C	M	CLAY LOAM
			2.5Y 6/1	5	D	M	
16-20	2.5Y 6/1	78	10YR 5/6	20	C	M	CLAY LOAM
			2.5YR 4/8	2	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 13**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	FLUVAQUENTS

Summary of Findings: **UPLAND ABOVE FLAG 'BYH-13'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	25
Andropogon virginicus	Herbaceous	FAC	10

Non-Dominant Species	Stratum	IND	%
Lycopodium clavatum	Herbaceous	FAC	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-3	10YR 4/2	100					LOAM
3-7	2.5Y 6/2	90	10YR 5/8	10	C	M	CLAY LOAM
7-20	2.5Y 7/4	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 14

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'BCB-8'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pteridium aquilinum	Herbaceous	FACU	25
Schedonorus arundinaceus	Herbaceous	FAC	20
Smilax rotundifolia	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	5
Parthenocissus quinquefolia	Vine	FACU	3
Lonicera japonica	Vine	FACU	3

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-4	10YR 3/2	100					LOAM
4-20	2.5Y 6/4	95	2.5Y 6/6	5	C	M	LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 15**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BCB-14'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	TOE OF SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium dichotomum	Herbaceous	FAC	35
Panicum virgatum	Herbaceous	FAC	25

Non-Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	15
Carex lurida	Herbaceous	OBL	10
Solidago altissima	Herbaceous	FACU	5
Lycopodium digitatum	Herbaceous	UPL	5
Pinus taeda	Herbaceous	FAC	5
Andropogon glomeratus	Herbaceous	FACW	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	10YR 4/2	85	10YR 5/8	15	C	M	CLAY LOAM
8-20	10YR 5/1	90	10YR 5/8	10	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 16**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'BCD-2-2'.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	NONE
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	FLAT
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Ilex opaca	Shrub	FAC	3
Pteridium aquilinum	Herbaceous	FACU	60

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	15
Andropogon glomeratus	Herbaceous	FACW	10

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 3/1	100					LOAM
3-20	2.5Y 5/4	85	10YR 5/6	15	C	M	LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 17**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BCD-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium dichotomum	Herbaceous	FAC	45
Andropogon glomeratus	Herbaceous	FACW	25

Non-Dominant Species	Stratum	IND	%
Carex lurida	Herbaceous	OBL	20
Panicum virgatum	Herbaceous	FAC	10
Solidago altissima	Herbaceous	FACU	10

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 4/1	100					CLAY LOAM
1-20	10YR 6/1	75	7.5YR 5/8	25	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 18**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	ORANGEBURG-FACEVILLE SANDY LOAMS

Summary of Findings: **UPLAND ABOVE FLAG 'BCF-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Solidago altissima	Herbaceous	FACU	40
Dichanthelium dichotomum	Herbaceous	FAC	25

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	15
Allium vineale	Herbaceous	FACU	5
Andropogon virginicus	Herbaceous	FAC	5
Solanum carolinense	Herbaceous	FACU	5
Achillea millefolium	Herbaceous	FACU	5

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	2.5Y 5/4	100					LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 19**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BCF-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	30
Dichanthelium dichotomum	Herbaceous	FAC	40
Juncus effusus	Herbaceous	OBL	20
Solidago altissima	Herbaceous	FACU	20
Smilax bona-nox	Vine	FAC	5
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-7	10YR 4/1	90	10YR 4/6	10	C	M	CLAY LOAM
7-18	10YR 6/1	75	7.5YR 5/8	25	C	M	CLAY LOAM
18-20	10YR 6/1	65	7.5YR 5/8	35	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 20**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/19/2017	Soil Map Unit Name:	DUNBAR FINE SANDY LOAM

Summary of Findings: **UPLAND NEAR FLAG 'BCH-4'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	35
Solidago altissima	Herbaceous	FACU	25

Non-Dominant Species	Stratum	IND	%
Dichanthelium dichotomum	Herbaceous	FAC	20
Solanum carolinense	Herbaceous	FACU	15
Setaria pumila	Herbaceous	FAC	10
Andropogon virginicus	Herbaceous	FAC	5
Schedonorus arundinaceus	Herbaceous	FAC	5

% Dominant species FAC or wetter: O
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.7
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: ____
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	10YR 3/2	100					LOAM
8-20	10YR 3/1	100					LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 21**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	TETOTUM LOAM, CLAYEY SUBSTRATUM

Summary of Findings: **UPLAND ABOVE FLAG 'BCJ-16'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Dichanthelium dichotomum	Herbaceous	FAC	35
Eupatorium capillifolium	Herbaceous	FACU	25
Schedonorus arundinaceus	Herbaceous	FAC	20

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	15
Solanum carolinense	Herbaceous	FACU	3

% Dominant species FAC or wetter: 75%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-10	2.5Y 5/4	95	7.5YR 5/8	5	C	M	FINE SANDY LOAM
10-20	2.5Y 6/4	90	7.5YR 5/8	10	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 22

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	GRITNEY FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BCJ-15'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	35
Dichanthelium dichotomum	Herbaceous	FAC	20
Lonicera japonica	Vine	FACU	3

Non-Dominant Species	Stratum	IND	%
Scirpus cyperinus	Herbaceous	OBL	10
Solidago rugosa	Herbaceous	FAC	10
Schedonorus arundinaceus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.1
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	2.5Y 4/1	80	10YR 5/6	20	C	M	LOAM
8-20	2.5Y 4/1	75	10YR 5/6	20	C	M	CLAY LOAM
			10YR 5/6	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 23**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **UPLAND SWALE EAST OF TOWER 211/37.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 4

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	15
Ilex opaca	Tree	FAC	15
Acer rubrum	Sapling	FAC	15
Ilex opaca	Sapling	FAC	15
Juniperus virginiana	Shrub	FACU	5
Liquidambar styraciflua	Shrub	FAC	5
Ilex opaca	Shrub	FAC	5
Dichanthelium clandestinum	Herbaceous	FACW	25
Schedonorus arundinaceus	Herbaceous	FAC	15
Smilax bona-nox	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Quercus alba	Tree	FACU	3
Quercus rubra	Tree	FACU	3
Pinus taeda	Herbaceous	FAC	10
Pteridium aquilinum	Herbaceous	FACU	5

% Dominant species FAC or wetter: 90%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	2.5Y 5/3	100					LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	___ 1cm Muck (A9)
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 2cm Muck (A10)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ Reduced Vertic (F18)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Piedmont Floodplain Soils (F19)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Anomalous Bright Loamy Soils (F20)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Red Parent Material (TF2)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Very Shallow Dark Surface (TF12)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Other
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 24

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **WETLAND BELOW FLAG 'BCM-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Typha latifolia	Herbaceous	OBL	50
Arthraxon hispidus	Herbaceous	FAC	25

Non-Dominant Species	Stratum	IND	%
Scirpus cyperinus	Herbaceous	OBL	20
Juncus effusus	Herbaceous	OBL	15

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 4/1	75	5YR 4/6	20	C	M	SILTY CLAY LOAM
			5YR 4/6	5	C	PL	
5-20	10YR 5/1	75	5YR 4/6	20	C	M	SILTY CLAY LOAM
			5YR 4/6	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 25**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	OCHREPTS AND UDULTS, STEEP

Summary of Findings: **UPLAND BELOW FLAG 'BCL-1'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Dichanthelium dichotomum	Herbaceous	FAC	25
Schedonorus arundinaceus	Herbaceous	FAC	15
Eupatorium capillifolium	Herbaceous	FACU	15

Non-Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	5
Solanum carolinense	Herbaceous	FACU	5

% Dominant species FAC or wetter: 75%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.1
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	10YR 5/8	70	5YR 5/8	10	C	M	CLAY
			10YR 4/1	20	D	M	
8-20	2.5Y 6/6	80	7.5YR 5/8	5	C	M	CLAY LOAM
			10YR 4/3	15	D	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 26**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	BOURNE FINE SANDY LOAM

Summary of Findings: **UPLAND IN FIELD NEAR TOWER 211/39.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium clandestinum	Herbaceous	FACW	65
Schedonorus arundinaceus	Herbaceous	FAC	20
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Solanum carolinense	Herbaceous	FACU	5
Dichanthelium dichotomum	Herbaceous	FAC	5

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 3/2	100					LOAM
3-20	2.5Y 5/4	85	10YR 5/8	15	C	M	FINE SANDY LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 27**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	EMPORIA SOILS

Summary of Findings: **WETLAND BELOW FLAG 'CNC-9'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	R4SBC
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	X Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Magnolia virginiana	Tree	FACW	10
Liquidambar styraciflua	Tree	FAC	10
Alnus serrulata	Sapling	FACW	20
Liquidambar styraciflua	Sapling	FAC	15
Ilex opaca	Sapling	FAC	10
Alnus serrulata	Shrub	FACW	40
Microstegium vimineum	Herbaceous	FAC	75
Lonicera japonica	Vine	FACU	5
Gelsemium sempervirens	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Magnolia virginiana	Shrub	FACW	10
Ilex verticillata	Shrub	FACW	10
Rosa palustris	Shrub	OBL	10
Saururus cernuus	Herbaceous	OBL	15
Dichanthelium dichotomum	Herbaceous	FAC	15
Carex lurida	Herbaceous	OBL	2

% Dominant species FAC or wetter: 89%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-20	10YR 5/1	80	2.5Y 6/1	20	INCLUSION	M	SANDY MUCKY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
X Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 28**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	SLAGLE SANDY LOAM

Summary of Findings: **WETLAND BELOW 'CND' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 3

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	50
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Dichanthelium scabriusculum	Herbaceous	OBL	15
Dichanthelium dichotomum	Herbaceous	FAC	10
Lespedeza cuneata	Herbaceous	FACU	10
Schedonorus arundinaceus	Herbaceous	FAC	5
Solidago altissima	Herbaceous	FACU	5
Rubus argutus	Herbaceous	FAC	2

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: ____
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/3	100					SANDY LOAM
1-12	10YR 6/1	90	10YR 5/8	5	C	M	SANDY CLAY LOAM
			10YR 7/8	5	C	M	
12-20	10YR 5/1	80	7.5YR 5/8	20	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 29**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	SLAGLE SANDY LOAM

Summary of Findings: **UPLAND ABOVE LINE "CND".**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	4-6

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Solidago altissima	Herbaceous	FACU	15
Schedonorus arundinaceus	Herbaceous	FAC	15
Dichanthelium scoparium	Herbaceous	FACW	10
Dichanthelium scabriusculum	Herbaceous	OBL	10
Juncus effusus	Herbaceous	OBL	10

Non-Dominant Species	Stratum	IND	%
Phytolacca americana	Herbaceous	FACU	5
Rubus argutus	Herbaceous	FAC	3
Andropogon virginicus	Herbaceous	FAC	3
Asplenium platyneuron	Herbaceous	FACU	3

% Dominant species FAC or wetter: 80%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	10YR 4/2	100					SANDY LOAM
4-12	2.5Y 5/4	100					SANDY CLAY LOAM
12-20	10YR 5/4	85	7.5YR 6/8	10	C	M	SANDY CLAY LOAM
			7.5YR 5/1	5	D	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 30**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	EMPORIA SOILS

Summary of Findings: **WETLAND BELOW FLAG 'CNE-8'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	X Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 13
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Microstegium vimineum	Herbaceous	FAC	10
Dulichium arundinaceum	Herbaceous	OBL	10
Lonicera japonica	Vine	FACU	3

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	5
Carex lurida	Herbaceous	OBL	5
Eupatorium capillifolium	Herbaceous	FACU	5
Scirpus cyperinus	Herbaceous	OBL	3
Juncus effusus	Herbaceous	OBL	3
Andropogon virginicus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED DOMINANT SPECIES OF CAREX (15%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 3/2	100					SANDY LOAM
1-6	10YR 5/2	98	10YR 7/8	2	C	M	LOAMY SAND
6-20	10YR 6/1	100					LOAMY SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 31**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	EMPORIA FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'CNH-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	20
Juncus effusus	Herbaceous	OBL	15

Non-Dominant Species	Stratum	IND	%
Carex lurida	Herbaceous	OBL	10
Andropogon virginicus	Herbaceous	FAC	5
Glechoma hederacea	Herbaceous	FACU	5
Setaria faberi	Herbaceous	UPL	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: X
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 4/2	100					LOAM
2-12	5Y 6/1	75	5Y 7/1	10	INCLUSION	M	SANDY LOAM
			10YR 5/8	15	C	M	
12-15	5Y 5/2	95	7.5YR 5/8	5	C	M	SANDY LOAM
15-20	10YR 7/6	83	7.5YR 6/8	15	C	M	LOAMY SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER MET.**
2% 7.5YR 5/8 CPL PRESENT FROM 15"-20".

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 32**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/20/2017	Soil Map Unit Name:	EMPORIA FINE SANDY LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'CNH-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Dichanthelium scoparium	Herbaceous	FACW	25
Andropogon virginicus	Herbaceous	FAC	15

Non-Dominant Species	Stratum	IND	%
Glechoma hederacea	Herbaceous	FACU	10
Solidago altissima	Herbaceous	FACU	10
Schedonorus arundinaceus	Herbaceous	FAC	5
Eupatorium capillifolium	Herbaceous	FACU	5
Phytolacca americana	Herbaceous	FACU	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-3	2.5Y 4/2	100					SANDY LOAM
3-20	10YR 5/6	100					SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 33**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	EMPORIA FINE SANDY LOAM

Summary of Findings: **UPLAND ABOVE FLAG 'BYI-16'.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	CONVEX
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	SLOPE
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Glechoma hederacea	Herbaceous	FACU	20
Dichanthelium scoparium	Herbaceous	FACW	15
Lespedeza cuneata	Herbaceous	FACU	10
Andropogon virginicus	Herbaceous	FAC	10

Non-Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	5
Solidago altissima	Herbaceous	FACU	5
Setaria pumila	Herbaceous	FAC	3
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	10YR 4/3	100					SANDY CLAY LOAM
8-20	10YR 6/6	90	10YR 5/2	10	D	M	SANDY CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 34**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	EMPORIA FINE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BYI-16'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	3-5

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: 7

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	35
Andropogon virginicus	Herbaceous	FAC	15
Lonicera japonica	Vine	FACU	3

Non-Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	10
Solidago rugosa	Herbaceous	FAC	10
Rhexia virginica	Herbaceous	FACW	5
Setaria pumila	Herbaceous	FAC	3
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 67%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 2/2	100					LOAM
1-9	10YR 5/2	90	10YR 6/8	10	C	M	SANDY CLAY LOAM
9-20	2.5Y 7/6	100					SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 35**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	SLAGLE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG 'BYL-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 3

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	45
Juncus effusus	Herbaceous	OBL	20

Non-Dominant Species	Stratum	IND	%
Rhexia virginica	Herbaceous	FACW	15
Solidago rugosa	Herbaceous	FAC	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: X
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-2	10YR 5/1	93	10YR 3/6	5	C	PL	CLAY LOAM
			7.5YR 4/6	2	C	M	
2-10	10YR 6/1	90	10YR 6/8	10	C	M	CLAY LOAM
10-20	2.5Y 7/2	80	10YR 6/8	20	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 36**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	EMPORIA SOILS

Summary of Findings: **WETLAND BELOW FLAG 'BYM-4'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PSS1E
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Panicum virgatum	Herbaceous	FAC	25
Carex lurida	Herbaceous	OBL	15

Non-Dominant Species	Stratum	IND	%
Microstegium vimineum	Herbaceous	FAC	10
Juncus effusus	Herbaceous	OBL	5
Rumex crispus	Herbaceous	FAC	3
Dulichium arundinaceum	Herbaceous	OBL	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.2
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-5	10YR 4/1	98	10YR 3/6	2	C	M	SILT LOAM
5-20	10Y 5/1	100					SILT LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 37**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG, C. NICE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	EMPORIA SOILS

Summary of Findings: **UPLAND ABOVE FLAG 'BYM-4'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	PSS1E
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	6-8

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Paulownia tomentosa	Sapling	UPL	5
Microstegium vimineum	Herbaceous	FAC	45

Non-Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	10
Pteridium aquilinum	Herbaceous	FACU	10
Rubus argutus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: _____
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-16	2.5Y 3/3	100					SANDY LOAM
16-20	2.5Y 5/4	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 38**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	LYNCHBURG - SLAGLE COMPLEX

Summary of Findings: **WETLAND BELOW FLAG 'BCS-5'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PEM1R
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 19
Saturated soil: 2

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Panicum dichotomiflorum	Herbaceous	FACW	60
Eupatorium perfoliatum	Herbaceous	FACW	15

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: X
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	10YR 4/2	100					SANDY CLAY LOAM
4-16	10YR 5/1	75	5YR 4/6	20	C	M	SANDY CLAY LOAM
			5YR 4/6	5	C	PL	
16-20	5Y 5/1	80	5YR 4/6	15	C	M	SANDY CLAY
			5YR 4/6	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 39**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	LYNCHBURG - SLAGLE COMPLEX

Summary of Findings: **UPLAND ABOVE FLAG 'BCS-6'.**

Hydrophytic Vegetation is Present:		Normal Circumstances:	X	NWI Classification:	PEM1R
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >8

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juniperus virginiana	Shrub	FACU	20
Andropogon virginicus	Herbaceous	FAC	30
Solidago altissima	Herbaceous	FACU	15
Eupatorium capillifolium	Herbaceous	FACU	15

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	10
Juniperus virginiana	Herbaceous	FACU	10
Panicum dichotomiflorum	Herbaceous	FACW	10
Allium vineale	Herbaceous	FACU	5
Setaria pumila	Herbaceous	FAC	5

% Dominant species FAC or wetter: 25%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: _____
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 4/3	100					GRAVELLY SANDY LOAM
3-8	2.5Y 6/4	100					GRAVELLY SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: GRAVEL
Depth (inches): BELOW 8".

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region

Sampling Point Number: 40

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	LYNCHBURG - SLAGLE COMPLEX

Summary of Findings: **UPLAND ABOVE FLAG 'BCS-24'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	5
Microstegium vimineum	Herbaceous	FAC	25
Schedonorus arundinaceus	Herbaceous	FAC	20
Allium vineale	Herbaceous	FACU	20
Lonicera japonica	Vine	FACU	10

Non-Dominant Species	Stratum	IND	%
Eupatorium perfoliatum	Herbaceous	FACW	15
Allium vineale	Herbaceous	FACU	15

% Dominant species FAC or wetter: 60%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-10	10YR 4/4	100					LOAM
10-20	10YR 5/4	100					SAND

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 41**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	LYNCHBURG - SLAGLE COMPLEX

Summary of Findings: **WETLAND BELOW FLAG 'BCS-24'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: 10

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Microstegium vimineum	Herbaceous	FAC	30
Carex lurida	Herbaceous	OBL	20
Juncus effusus	Herbaceous	OBL	20

Non-Dominant Species	Stratum	IND	%
Eupatorium capillifolium	Herbaceous	FACU	10
Allium vineale	Herbaceous	FACU	5
Rubus argutus	Herbaceous	FAC	5
Setaria pumila	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED NON-DOMINANT SPECIES OF THISTLE (5%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 4/2	100					CLAY LOAM
3-20	2.5Y 5/1	75	5YR 5/8	20	C	M	CLAY LOAM
			5YR 5/8	5	C	PL	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 42**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	SLAGLE SANDY LOAM

Summary of Findings: **UPLAND ABOVE FLAG BYO-9.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	CONVEX
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	SLOPE
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Juniperus virginiana	Shrub	FACU	3
Dichanthelium scoparium	Herbaceous	FACW	50
Lonicera japonica	Vine	FACU	10

Non-Dominant Species	Stratum	IND	%
Rubus argutus	Herbaceous	FAC	10
Juncus effusus	Herbaceous	OBL	15
Solidago altissima	Herbaceous	FACU	15

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: ___
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	2.5Y 5/4	90	10YR 5/6	10	C	M	CLAY LOAM
8-20	2.5Y 5/4	90	10YR 6/8	10	C	M	CLAY

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 43**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG	Terminus:	37.290017° -77.283916°
Date:	12/21/2017	Soil Map Unit Name:	SLAGLE SANDY LOAM

Summary of Findings: **WETLAND BELOW FLAG BYO-9.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	35
Dichanthelium scoparium	Herbaceous	FACW	30

Non-Dominant Species	Stratum	IND	%
Saccharum giganteum	Herbaceous	FACW	10
Andropogon virginicus	Herbaceous	FAC	5
Solidago altissima	Herbaceous	FACU	5
Dichanthelium scabriusculum	Herbaceous	OBL	5
Symphyotrichum pilosum	Herbaceous	FAC	3
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.8
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: X
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	2.5Y 5/1	85	10YR 4/6	15	C	M	CLAY LOAM
6-20	2.5Y 6/2	60	10YR 5/6	40	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 44**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	KINSTON COMPLEX

Summary of Findings: **UPLAND ABOVE FLAG 'BYU-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PEM1A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Setaria pumila	Herbaceous	FAC	45

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	15
Allium vineale	Herbaceous	FACU	15
Rumex crispus	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.2
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-6	10YR 3/1	100					LOAM
6-20	10YR 3/1	65	10YR 4/4	35	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 45**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG AND C. NICE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	KINSTON COMPLEX

Summary of Findings: **WETLAND BELOW FLAG 'BYU-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PEMA1
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLOODPLAIN
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 5
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	45
Typha latifolia	Herbaceous	OBL	30

Non-Dominant Species	Stratum	IND	%
Carex lurida	Herbaceous	OBL	20
Solidago rugosa	Herbaceous	FAC	10
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.2
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: X
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-2	10YR 3/1	100					SILT LOAM
2-20	5Y 4/1	87	7.5YR 4/4	10	C	M	SILTY CLAY LOAM
			5Y 5/6	3	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 46**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG AND C. NICE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	EMPORIA AND SLAGLE SOILS

Summary of Findings: **WETLAND BELOW FLAG 'BYY-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	TOE OF SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Juncus effusus	Herbaceous	OBL	35
Saccharum giganteum	Herbaceous	FACW	10
Solidago rugosa	Herbaceous	FAC	10
Dichanthelium scoparium	Herbaceous	FACW	10
Lonicera japonica	Vine	FACU	3

Non-Dominant Species	Stratum	IND	%
Dichanthelium scabriusculum	Herbaceous	OBL	5
Rubus argutus	Herbaceous	FAC	3

% Dominant species FAC or wetter: 80%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 1.7
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-1	10YR 4/2	100					LOAM
1-20	2.5Y 5/2	75	2.5Y 5/8	5	C	PL	CLAY LOAM
			10YR 5/6	20	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 47**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	EMPORIA AND SLAGLE SOILS

Summary of Findings: **UPLAND ABOVE FLAG 'BYY-7'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Pinus taeda	Shrub	FAC	5
Dichanthelium scoparium	Herbaceous	FACW	70
Lonicera japonica	Vine	FACU	20

Non-Dominant Species	Stratum	IND	%
Setaria pumila	Herbaceous	FAC	15
Rubus argutus	Herbaceous	FAC	10
Allium vineale	Herbaceous	FACU	5

% Dominant species FAC or wetter: 75%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.7
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-3	10YR 5/6	100					LOAM
3-20	2.5Y 6/3	85	10YR 6/6	15	C	M	CLAY

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 48**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG AND C. NICE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	UDORTHENTS, CLAYEY

Summary of Findings: **WETLAND BELOW 'BYZ' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Pinus taeda	Shrub	FAC	10
Dichanthelium scoparium	Herbaceous	FACW	45
Dichanthelium dichotomum	Herbaceous	FAC	10
Rhexia virginica	Herbaceous	FACW	10
Rubus argutus	Herbaceous	FAC	10
Saccharum giganteum	Herbaceous	FACW	10

Non-Dominant Species	Stratum	IND	%
Andropogon virginicus	Herbaceous	FAC	5
Juncus effusus	Herbaceous	OBL	5
Solidago rugosa	Herbaceous	FAC	5
Setaria pumila	Herbaceous	FAC	5

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

UNIDENTIFIED NON-DOMINANT SPECIES OF CAREX(5%) PRESENT.

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-13	2.5Y 5/1	80	10YR 5/8	15	C	M	CLAY LOAM
			10YR 3/6	5	C	PL	
13-20	2.5Y 6/6	100					CLAY

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches): ____

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 49**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. YOUNG AND C. NICE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	UDORTHENTS, CLAYEY

Summary of Findings: **UPLAND ABOVE 'BYZ' LINE.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Shrub	FAC	10
Pinus taeda	Shrub	FAC	5
Dichanthelium scoparium	Herbaceous	FACW	45
Dichanthelium dichotomum	Herbaceous	FAC	10
Rhexia virginica	Herbaceous	FACW	10
Rubus argutus	Herbaceous	FAC	10
Saccharum giganteum	Herbaceous	FACW	10

Non-Dominant Species	Stratum	IND	%
Andropogon virginicus	Herbaceous	FAC	5
Juncus effusus	Herbaceous	OBL	5
Solidago rugosa	Herbaceous	FAC	5
Setaria pumila	Herbaceous	FAC	3

% Dominant species FAC or wetter: 100%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	2.5Y 5/2	100					FINE SANDY LOAM
4-20	2.5Y 6/4	80	2.5Y 4/1	15	D	M	FINE SANDY LOAM
			10YR 5/6	5	C	M	

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 50**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.344021° -77.392836°
Investigator(s):	B. CONNERS, A. MCINTYRE	Terminus:	37.290017° -77.283916°
Date:	1/3/2018	Soil Map Unit Name:	UDORTHENTS, CLAYEY

Summary of Findings: **UPLAND ABOVE FLAG 'BCAE-2'.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil: >20

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Liquidambar styraciflua	Shrub	FAC	5
Quercus rubra	Shrub	FACU	3
Andropogon virginicus	Herbaceous	FAC	50
Schedonorus arundinaceus	Herbaceous	FAC	35

Non-Dominant Species	Stratum	IND	%
Dichanthelium dichotomum	Herbaceous	FAC	20
Rubus argutus	Herbaceous	FAC	10
Setaria pumila	Herbaceous	FAC	10

% Dominant species FAC or wetter: 80%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.0
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	2.5Y 5/4	100					LOAM
8-20	2.5Y 6/3	100					LOAM

Hydric Soil Indicators:

			Indicators for Problematic Hydric Soils
___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 51**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/25/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **WETLAND BELOW FLAG AMC-9.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
X Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	X Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: 1
Water Table:
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Tree	FAC	15
Liquidambar styraciflua	Sapling	FAC	15
Quercus phellos	Sapling	FACW	10
Liquidambar styraciflua	Shrub	FAC	5
Quercus phellos	Shrub	FACW	5
Magnolia virginiana	Herbaceous	FACW	40
Typha latifolia	Herbaceous	OBL	25
Campsis radicans	Vine	FAC	10
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Peltandra virginica	Herbaceous	OBL	20
Dichanthelium clandestinum	Herbaceous	FACW	15
Eleocharis acicularis	Herbaceous	OBL	5
Dulichium arundinaceum	Herbaceous	OBL	5
Boehmeria cylindrica	Herbaceous	FACW	5

% Dominant species FAC or wetter: 89%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	7.5YR 5/1	85	7.5YR 6/6	15	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 52**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/25/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND ABOVE AMC-8.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	20
Acer rubrum	Sapling	FAC	5
Quercus phellos	Shrub	FACW	5
Pinus taeda	Shrub	FAC	5
Liquidambar styraciflua	Shrub	FAC	5
Rubus argutus	Herbaceous	FAC	25
Dichanthelium clandestinum	Herbaceous	FACW	20
Pteridium aquilinum	Herbaceous	FACU	20
Vitis rotundifolia	Vine	FAC	15
Smilax rotundifolia	Vine	FAC	5
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Verbesina alternifolia	Herbaceous	FAC	10
Solidago altissima	Herbaceous	FACU	10
Phytolacca americana	Herbaceous	FACU	5
Eupatorium capillifolium	Herbaceous	FACU	5

% Dominant species FAC or wetter: 82%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
1-8	10YR 4/3	100					CLAY LOAM
8-20	10YR 5/3	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 53**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/25/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND ABOVE AMB-9**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	3-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	30
Liquidambar styraciflua	Shrub	FAC	10
Liriodendron tulipifera	Shrub	FACU	5
Pinus taeda	Shrub	FAC	5
Microstegium vimineum	Herbaceous	FAC	25
Rubus argutus	Herbaceous	FAC	20
Lespedeza cuneata	Herbaceous	FACU	15
Lonicera japonica	Vine	FACU	15

Non-Dominant Species	Stratum	IND	%
Liriodendron tulipifera	Sapling	FACU	5
Quercus phellos	Sapling	FACW	5
Liriodendron tulipifera	Shrub	FACU	5
Pinus taeda	Shrub	FAC	5
Vaccinium corymbosum	Shrub	FACW	3
Fraxinus pennsylvanica	Shrub	FACW	3
Lespedeza cuneata	Herbaceous	FACU	15
Dichanthelium clandestinum	Herbaceous	FACW	10
Liquidambar styraciflua	Herbaceous	FAC	5
Eupatorium capillifolium	Herbaceous	FACU	5
Sorghum halepense	Herbaceous	FACU	5
Mitchella repens	Herbaceous	FACU	5

% Dominant species FAC or wetter: 63%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	2.5Y 6/4	100					SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 54**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/25/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **WETLAND BELOW FLAG AMB-5.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	PEM1A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	TOE OF SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 4
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Acer rubrum	Tree	FAC	25
Fraxinus pennsylvanica	Tree	FACW	10
Pinus taeda	Shrub	FAC	15
Liquidambar styraciflua	Shrub	FAC	5
Peltandra virginica	Herbaceous	OBL	30
Juncus effusus	Herbaceous	OBL	20

Non-Dominant Species	Stratum	IND	%
Liriodendron tulipifera	Tree	FACU	3
Dichanthelium scoparium	Herbaceous	FACW	10
Rubus argutus	Herbaceous	FAC	5
Solidago altissima	Herbaceous	FACU	5
Sorghum halepense	Herbaceous	FACU	3

% Dominant species FAC or wetter: 100%
Prevalence Index: 1.8
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-4	2.5Y 6/2	90	7.5YR 5/6	10	C	M	SANDY CLAY LOAM
9-12	2.5Y 6/1	90	5YR 4/6	10	C	M	SANDY CLAY LOAM
12-20	2.5Y 5/1	95	5YR 4/6	5	C	M	SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 55**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **WETLAND BELOW AME-10.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	TOE OF SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	X Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 12
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	25
Alnus serrulata	Sapling	FACW	15
Platanus occidentalis	Shrub	FACW	10
Liquidambar styraciflua	Shrub	FAC	10
Rubus argutus	Herbaceous	FAC	20
Juncus effusus	Herbaceous	OBL	15
Saururus cernuus	Herbaceous	OBL	15
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Platanus occidentalis	Sapling	FACW	10
Ailanthus altissima	Sapling	FACU	5
Solidago altissima	Herbaceous	FACU	5
Dichanthelium clandestinum	Herbaceous	FACW	5
Lespedeza cuneata	Herbaceous	FACU	3
Sorghum halepense	Herbaceous	FACU	3

% Dominant species FAC or wetter: 88%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-8	2.5Y 5/2	85	7.5YR 5/6	15	C	M	SANDY CLAY LOAM
8-20	2.5Y 6/1	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 56**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND ABOVE AME-12.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	4-5

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		X FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	10
Platanus occidentalis	Sapling	FACW	10
Ailanthus altissima	Sapling	FACU	10
Liquidambar styraciflua	Shrub	FAC	10
Rubus argutus	Herbaceous	FAC	30
Microstegium vimineum	Herbaceous	FAC	20
Dichanthelium clandestinum	Herbaceous	FACW	15
Smilax rotundifolia	Vine	FAC	10
Vitis rotundifolia	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Mitchella repens	Herbaceous	FACU	5
Quercus alba	Herbaceous	FACU	3

% Dominant species FAC or wetter: 89%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-6	2.5Y 5/4	100					SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: GRAVEL
Depth (inches): 6

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 57**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **WETLAND AT FLAG AMH-50.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	TOE OF SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	X Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	X Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: ___
Saturated soil: 10

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liquidambar styraciflua	Sapling	FAC	35
Liriodendron tulipifera	Sapling	FACU	20
Acer rubrum	Sapling	FAC	15
Liquidambar styraciflua	Shrub	FAC	15
Acer rubrum	Shrub	FAC	5
Ilex opaca	Shrub	FAC	5
Saururus cernuus	Herbaceous	OBL	20
Microstegium vimineum	Herbaceous	FAC	10
Onoclea sensibilis	Herbaceous	FACW	10
Toxicodendron radicans	Vine	FAC	5
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Carex sp.	Herbaceous		5

% Dominant species FAC or wetter: 82%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.8
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-10	7.5YR 4/1	90	7.5YR 4/6	10	C	M	CLAY LOAM
10-20	7.5YR 5/2	85	5YR 4/6	15	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 58**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND ABOVE FLAG AMH-53.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	NONE
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	FLAT
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Liriodendron tulipifera	Tree	FACU	10
Liriodendron tulipifera	Sapling	FACU	25
Liquidambar styraciflua	Sapling	FAC	15
Liriodendron tulipifera	Shrub	FACU	5
Phytolacca americana	Herbaceous	FACU	20
Impatiens capensis	Herbaceous	FACW	20
Rubus argutus	Herbaceous	FAC	15
Lonicera japonica	Vine	FACU	15
Toxicodendron radicans	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%

% Dominant species FAC or wetter: 44%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	7.5YR 5/3	100					SANDY CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 59**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **WETLAND BELOW FLAG AMI-5.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	SLOPE
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	2-3

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ___
Water Table: 13
Saturated soil: O

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Robinia pseudoacacia	Tree	UPL	5
Quercus alba	Tree	FACU	5
Pinus taeda	Shrub	FAC	3
Liquidambar styraciflua	Shrub	FAC	3
Juncus effusus	Herbaceous	OBL	50
Parthenocissus quinquefolia	Vine	FACU	10
Lonicera japonica	Vine	FACU	10
Smilax rotundifolia	Vine	FAC	5

Non-Dominant Species	Stratum	IND	%
Dichanthelium scoparium	Herbaceous	FACW	10
Solidago altissima	Herbaceous	FACU	10
Lespedeza cuneata	Herbaceous	FACU	10
Rubus argutus	Herbaceous	FAC	10
Apocynum cannabinum	Herbaceous	FACU	5

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ___
Dominance Test >50%: ___
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation: ___

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	**Color (Moist)**	**%**	**Color (Moist)**	**%**	**Type**	**Loc**	**Texture**
0-6	2.5Y 5/2	90	10YR 6/6	10	C	M	CLAY LOAM
6-20	7.5YR 5/1	80	10YR 6/6	20	C	M	CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	X Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ___
Depth (inches): ___

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 60**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND ABOVE AMI-5.**

Hydrophytic Vegetation is Present:	Normal Circumstances: X	NWI Classification:	N/A
Hydric Soils are Present:	Disturbed Parameters (see Remarks):	Local Relief:	CONVEX
Wetland Hydrology is Present:	Problematic Parameters (see Remarks):	Landform:	SLOPE
Sampled Area is within a Wetland:	Atypical Climate/Hydrology (see Remarks):	Slope %:	2-4

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water:
Water Table:
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	5
Rubus argutus	Herbaceous	FAC	20
Lespedeza cuneata	Herbaceous	FACU	15
Lonicera japonica	Vine	FACU	5

Non-Dominant Species	Stratum	IND	%
Pinus taeda	Herbaceous	FAC	10
Solidago altissima	Herbaceous	FACU	10
Mitchella repens	Herbaceous	FACU	5
Digitaria sanguinalis	Herbaceous	FACU	5

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.5
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0:
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER NOT MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-8	2.5Y 5/4	100					SANDY CLAY LOAM
8-20	2.5Y 6/4	100					SANDY CLAY LOAM

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 61**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	OCHREPTS AND UDULTS

Summary of Findings: **UPLAND IN SWALE BETWEEN TOWERS 211/13 AND 211/14.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	X Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Sapling	FAC	3
Liriodendron tulipifera	Sapling	FACU	3
Pinus taeda	Shrub	FAC	3
Lespedeza cuneata	Herbaceous	FACU	65
Rubus argutus	Herbaceous	FAC	25

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	15
Achillea millefolium	Herbaceous	FACU	10
Phytolacca americana	Herbaceous	FACU	5

% Dominant species FAC or wetter: 60%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	7.5YR 5/6	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 62**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	LUCY-ORANGEBURG LOAMY SANDS

Summary of Findings: **WETLAND BELOW FLAG AMK-5.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:	X	Disturbed Parameters (see Remarks):		Local Relief:	CONCAVE
Wetland Hydrology is Present:	X	Problematic Parameters (see Remarks):		Landform:	DRAINAGEWAY
Sampled Area is within a Wetland:	X	Atypical Climate/Hydrology (see Remarks):		Slope %:	1-2

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
X Surface Water (A1)	Water Stained Leaves (B9)	Surface Soil Cracks (B6)
High Water Table (A2)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
X Saturation (A3)	Marl Deposits (B15)	Drainage Patterns (B10)
Water Marks (B1)	Hydrogen Sulfide Odor (C1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Algal Mat or Crust (B4)	Recent Iron Reduction in Tilled Soils (C6)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Thin Muck Surface (C7)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Other	X Geomorphic Position (D2)
		Shallow Aquitard (D3)
		FAC-Neutral Test (D5)
		Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: 1
Water Table:
Saturated soil: 0

Remarks: **HYDROLOGY PARAMETER MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Albizia julibrissin	Sapling	UPL	10
Apocynum cannabinum	Herbaceous	FACU	30
Persicaria sagittata	Herbaceous	OBL	20
Rubus argutus	Herbaceous	FAC	20
Smilax rotundifolia	Vine	FAC	10
Lonicera japonica	Vine	FACU	10

Non-Dominant Species	Stratum	IND	%
Scirpus cyperinus	Herbaceous	OBL	15

% Dominant species FAC or wetter: 50%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 2.9
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation:
Dominance Test >50%:
Prevalence Index is ≤ 3.0: X
Problematic Hydrophytic Vegetation:

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-6	10YR 4/1	90	7.5YR 5/6	10	C	M	CLAY LOAM
6-20	10YR 6/8	90	7.5YR 4/6	10	C	M	CLAY

Hydric Soil Indicators:

Histosol (A1)	Coast Prairie Redox (A16)	Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
Histic Epipedon (A2)	Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	
Black Histic (A3)	Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	1cm Muck (A9)
Hydrogen Sulfide (A4)	Sandy Redox (S5)	Marl (F10)	2cm Muck (A10)
Stratified Layers (A5)	Stripped Matrix (S6)	Depleted Ochric (F11)	Reduced Vertic (F18)
Organic Bodies (A6)	Dark Surface (S7)	Iron-Manganese Masses (F12)	Piedmont Floodplain Soils (F19)
5cm Mucky Mineral (A7)	Polyvalue Below Surface (S8)	Umbric Surface (F13)	Anomalous Bright Loamy Soils (F20)
Muck Presence (A8)	Thin Dark Surface (S9)	Delta Ochric (F17)	Red Parent Material (TF2)
1 cm Muck (A9)	Loamy Mucky Mineral (F1)	Reduced Vertic (F18)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A1	Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)	Other
Thick Dark Surface (A12)	X Depleted Matrix (F3)	Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type:
Depth (inches):

Remarks: **SOIL PARAMETER MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: 63**

Stantec

Project:	CHESTERFIELD - HOPEWELL 230KV REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD AND PRINCE GEORGE COUNTIES; CITY OF HOPEWELL	Subregion (LRR or MLRA):	LRR P
State:	VIRGINIA	Start:	37.379681° -77.387324°
Investigator(s):	A. MCINTYRE, E. SHAW	Terminus:	37.290017° -77.283916°
Date:	7/26/2018	Soil Map Unit Name:	LUCY-ORANGEBURG LOAMY SANDS

Summary of Findings: **UPLAND BETWEEN TOWERS 211/17 AND 211/18.**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	CONVEX
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil: _____

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Quercus rubra	Shrub	FACU	10
Pinus taeda	Shrub	FAC	5
Lespedeza cuneata	Herbaceous	FACU	30
Rubus argutus	Herbaceous	FAC	20
Schedonorus arundinaceus	Herbaceous	FAC	15
Lonicera japonica	Vine	FACU	15
Toxicodendron radicans	Vine	FAC	3

Non-Dominant Species	Stratum	IND	%
Mitchella repens	Herbaceous	FACU	5
Achillea millefolium	Herbaceous	FACU	5

% Dominant species FAC or wetter: 57%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.6
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-20	10YR 5/6	100					CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches): _____

Remarks: **SOIL PARAMETER NOT MET.**

Stantec Consulting Services Inc.
1011 Boulder Springs Drive Suite 225, Richmond VA 23225-4951

December 13, 2019
File: 203401247

Attention: Regulator of the Day
U.S. Army Corps of Engineers
803 Front Street
Norfolk Virginia 23510
Via Email: CENAO.REG_ROD@usace.army.mil

Reference: **Request for Approved Jurisdictional Determination**
Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild
Chesterfield County, VA
Start: Latitude: 37.344777° Longitude: -77.395761°
Terminus: Latitude: 37.342071° Longitude: -77.395847°

Applicant: Ms. Lane Carr
Virginia Electric and Power Company
10900 Nuckols Road
Glen Allen, Virginia 23060

Dear Regulator of the Day:

Stantec Consulting Services, Inc. (Stantec) has been retained by Virginia Electric and Power Company, doing business as Dominion Energy Virginia to conduct a detailed investigation of waters of the U.S. (WOUS), including wetlands, on the above-referenced project. The approximate 3.43-acre site is located within the James River drainage basin in Chesterfield County, Virginia (Figure 1). The site is situated within an existing right-of-way (ROW) on the north side of Old Bermuda Hundred Road (Rt. 618) and extends approximately 0.19 miles to the north. The site is just east of the intersection of Old Bermuda Hundred Road and Old Stage Road (Rt. 732) and can be accessed directly from Old Bermuda Hundred Road (Figure 2). A copy of the Pre-Application and/or Jurisdictional Waters Determination Request Form is provided in Appendix A.

Off-site Evaluation

Prior to conducting fieldwork, Stantec consulted the U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Maps for Chester, Virginia (1994 revision) and Hopewell, Virginia (1996 revision), the National Wetlands Inventory Interactive Mapper (NWI), administered by the U.S. Fish and Wildlife Service (USFWS), the SSURGO Soils Survey, administered by the Natural Resources Conservation Service (NRCS), and flood plain maps available at the Flood Map Service Center, administered by the Federal Emergency Management Agency (FEMA). The USGS quad map shows the study area lies within an existing transmission ROW with gentle to moderately-sloping terrain and depicts no perennial or intermittent stream channels. The NWI map (Figure 3) depicts no wetland features within the property boundaries. The soil survey (Figure 4) indicates that the site is underlain primarily by Lucy-Orangeburg loamy sands, Faceville-Gritney gravelly fine sandy loams, and Rumford loamy fine sand, none of which are listed by the NRCS as hydric in Chesterfield County, Virginia. Additionally, the flood plain map (Figure 5) shows the subject property lies outside of the 100-year floodplain (Zone X).

Stantec

December 13, 2019
Regulator of the Day
Page 2 of 2

Reference: Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild

On-site Evaluation

Fieldwork was conducted during March 2019 using the Routine Determination Method as outlined in the 1987 *Corps of Engineers Wetland Delineation Manual* and methods described in the 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*. No WOUS or wetlands were identified within the project boundaries. The data sheets (Appendix B) used in this investigation are attached along with the Delineation Map (Figure 6), which depicts the data point and representative photo locations. Representative site photos are included in Appendix C.

Site Description

No jurisdictional features were identified by Stantec within the project limits. An approved jurisdictional determination form has been included in Appendix D. On behalf of our client, Stantec respectfully requests that the Corps confirm our delineation. We would appreciate the opportunity to meet with you on site to present our fieldwork. Please call to set up a meeting date or to discuss any questions regarding our investigation.

Thank you for your cooperation in this matter.

Regards,

Stantec Consulting Services Inc.

Sean Wender, PWD
Senior Ecologist
Phone: (804) 317-8027
Fax: (804) 267-3470
sean.wender@stantec.com

Enclosures: Figures 1, 2, 3, 4, 5, 6
Appendices A, B, C, D

cc. Ms. Lane Carr, Virginia Electric and Power Company

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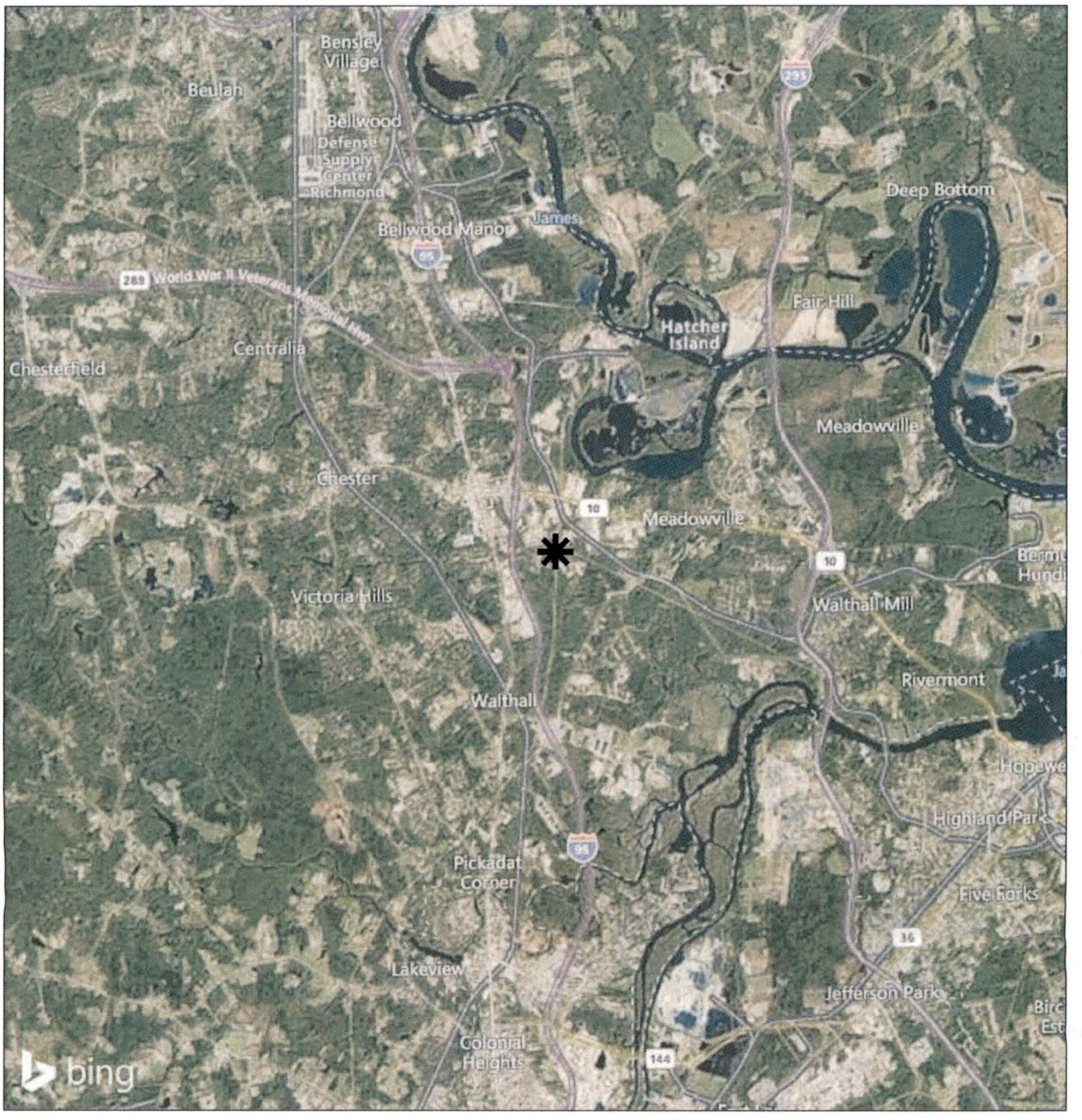

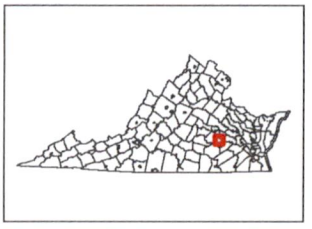

Project Location

0 5,000 10,000 Feet

(At original document size of 8.5x11)
1:120,000

N

Stantec

Project Location
Chesterfield County, Virginia

Prepared by LJB on 2019-03-21
TR by ECL on 2019-03-25
IR by AM on 2019-04-17

Client/Project
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

203401247

Figure No.
1

Title
Project Vicinity Map

Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec
3. Background: Orthoimagery © Bing Maps
4. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Page 01 of 01

Figure No.
2

Title
Project Location Map

Client/Project
203401247
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

Project Location
Chesterfield County, Virginia

Prepared by LJB on 2019-03-21
TR by ECL on 2019-03-25
IR by AM on 2019-04-17

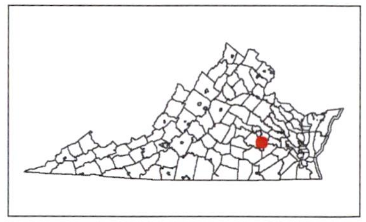
N

0 1,900 3,800 Feet
(At original document size of 11x17)
1:24,000

Project Limits

Start
Latitude: 37.344777°
Longitude: -77.395761°

Terminus
Latitude: 37.342071°
Longitude: -77.395847°



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec
3. Topographic map © USGS 7.5 Minute Series Topographic Map, Chester, VA Quadrangle, 1994, and Hopewell, VA Quadrangle, 1996

Stantec

Page 01 of 01

Figure No.
3

Title
National Wetlands Inventory Map

Client/Project
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

203401247

Project Location
Chesterfield County, Virginia

Prepared by LJR on 2019-03-27
TR by EC on 2019-03-25
IR by AM on 2019-04-17

N

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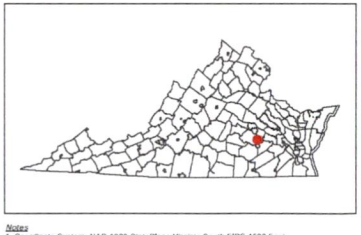
(At original document size of 11x17)
1:6,000

- Project Limits
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, NWI, ESRI
3. Background: Orthoimagery © Bing Maps
4. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Page 01 of 01

Map Unit Symbol	Description
92B	Rumford loamy fine sand, 2 to 6 percent slopes
110C	Faceville-Gritney gravelly fine sandy loams, 6 to 12 percent slopes
212B	Lucy-Orangeburg loamy sands, 2 to 6 percent percent slopes

Figure No.
4

Title
Soils Map

Client/Project 203401247
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

Project Location
Chesterfield County, Virginia

Prepared by LJB on 2019-03-22
TR by KCL on 2019-03-25
IR by AM on 2019-04-17

N

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(At original document size of 11x17)
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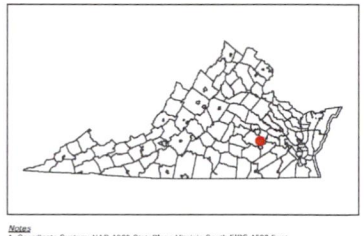
Project Limits
Soils



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia, Stantec, USDA NRCS SSURGO Soil Survey, ESRI
3. Background: Orthoimagery © Bing Maps
4. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Page 01 of 01

Figure No.
5

Title
Flood Hazard Map

Client/Project 203401247
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

Project Location
Chesterfield County, Virginia

Prepared by LJB on 2019-03-22
TR by ECL on 2019-03-25
IR by AM on 2019-04-17

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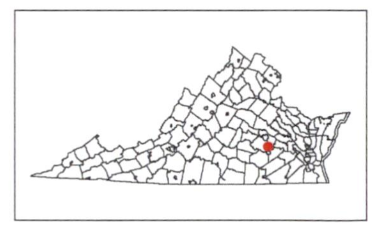
(At original document size of 11x17)
1:6,000

Project Limits
No Flood Possibility



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Data Sources: Dominion Energy Virginia; Stantec; FEMA; ESRI
3. Background: Orthoimagery © Bing Maps
4. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Page 01 of 01

Figure No.
6

Title
Delineation Map

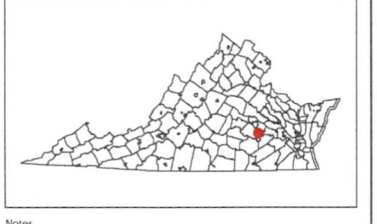
Client/Project
Dominion Energy Virginia
Chesterfield-Tyler 230 kV Lines #205 and #2003
Transmission Line Rebuild

Project Location
Chesterfield County, Virginia

203401247
Prepared by LJB on 2019-03-20
Technical Review by ECL on 2019-03-25
Independent Review by AM on 2019-04-17

0 100 200 Feet
1:1,200 (At original document size of 11x17)

- Existing Structure Location
- Data Point Location
- Photo Location
- Project Limits
- Previous Project Limits
- 5-Foot Contour



Notes
1. Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
2. Existing structures provided by Dominion Energy Virginia
3. Project Limits digitized from orthoimagery
4. Topography generated from digital elevation model derived from VGIN LIDAR
5. Orthoimagery © VGIN and © Bing Maps
6. Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

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Page 01 of 01

APPENDIX A
PRE-APPLICATION AND JURISDICTIONAL DETERMINATION REQUEST FORM

NORFOLK DISTRICT REGULATORY OFFICE PRE-APPLICATION AND/OR JURISDICTIONAL WATERS DETERMINATION REQUEST FORM

This form is used when you want to determine if areas on your property fall under regulatory requirements of the U.S. Army Corps of Engineers (USACE). Please supply the following information and supporting documents described below. This form can be filled out online and/or printed and then mailed, faxed, or e-mailed to the Norfolk District. Submitting this request authorizes the US Army Corps of Engineers to field inspect the property site, if necessary, to help in the determination process. **THIS FORM MUST BE SIGNED BY THE PROPERTY OWNER TO BE CONSIDERED A FORMAL REQUEST.**

The printed form and supporting documents should be mailed to:

U.S. Army Corps of Engineers, Norfolk District
Regulatory Office
803 Front Street
Norfolk, Virginia 23510-1096

Or faxed to (757) 201-7678

Or sent via e-mail to: CENAO.REG_ROD@usace.army.mil

Additional information on the Regulatory Program is available on our website at:
http://www.nao.usace.army.mil/
Please contact us at 757-201-7652 if you need any assistance with filling out this form.

Location and Information about Property to be subject to a Jurisdictional Determination:

1. Date of Request: **December 2019**

2. Project Name: **Chesterfield-Tyler 230 kV Lines #205 and #2003 Transmission Line Rebuild**

3. City or County where property located: **Chesterfield County, Virginia**

4. Address of property and directions (attach a map of the property location and a copy of the property plat): **The project area originates on the north side of Old Bermuda Hundred Road (Rt. 618) and extends approximately 0.19 miles to the north. The site is just east of the intersection of Old Bermuda Hundred Road and Old Stage Road (Rt. 732) and can be accessed directly from Old Bermuda Hundred Road. Location and Vicinity maps are included in the submittal package.**

5. Coordinates of property (if known): **Start:** **37.344777° -77.395761°**
Terminus: **37.342071° -77.395847°**

6. Size of property in acres: **3.43 acres**

7. Tax Parcel Number / GPIN (if available):

8. Name of Nearest Waterway: **Redwater Creek and the James River.**

9. Brief Description of Proposed Activity, Reason for Preapplication Request, and/or Reason for Jurisdictional Waters Determination Request: **Transmission Line Rebuild Project.**

10. Has a wetland delineation/determination been completed by a consultant or the Corps on the property previously? ☐ YES ☐ NO ☒ UNKNOWN,

If yes, please provide the name of the consultant and/or Corps staff and Corps permit number, if available:

Property Owner Contact Information:

Property Owner Name:
Mailing Address:
City: State: Zip:
Daytime Telephone:
E-mail Address:

If the person requesting the Jurisdictional Determination is **NOT** the Property Owner, please also supply the Requestor's contact information here:

Requestor Name:	**Ms. Lane Carr – Virginia Electric and Power Company**
Mailing Address:	**10900 Nuckols Road**
City: State: Zip:	**Glen Allen, Virginia 23060**
Daytime Telephone:	**804-771-4061**
E-mail Address:	**Lane.E.Carr@dominionenergy.com**

Additionally, if you have any of the following information, please include it with your request: wetland delineation map, other relevant maps, drain tile survey, topographic survey, and/or site photographs.

CERTIFICATION: I am hereby requesting a preapplication consultation or jurisdictional waters and/or wetlands determination from the U.S. Army Corps of Engineers, for the property(ies) I have described herein. I agree to allow the duly authorized representatives of the Norfolk District Corps of Engineers and other regulatory or advisory agencies to enter upon the premises of the project site at reasonable times to evaluate inspect and photograph site conditions. This consent to enter the property is superior to, takes precedence over, and waives any communication to the contrary. For example, if the property is posted as "no trespassing" this consent specifically supercedes and waives that prohibition and grants permission to enter the property despite such posting. I hereby certify that the information contained in the Request for a Jurisdictional Determination is accurate and complete:

Lane Carr
Requestor's Signature

12-16-19
Date

APPENDIX B
WETLAND DETERMINATION DATA FORMS

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: AM-1**

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Project:	CHESTERFIELD TO TYLER 230 KV LINES #205 AND #2003 REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD COUNTY	Subregion (LRR or MLRA):	MLRA 133A OF LRRP
State:	VIRGINIA	Site Latitude:	37.344777°
Investigator(s):	A. MCINTYRE	Site Longitude:	77.395761°
Date:	3/21/2019	Soil Map Unit Name:	LUCY-ORANGEBURG LOAMY SANDS

Summary of Findings: **UPLAND SOUTH OF STRUCTURE 205/19**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: _____
Water Table: _____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	10
Acer rubrum	Shrub	FAC	10
Eupatorium capillifolium	Herbaceous	FACU	25
Rubus argutus	Herbaceous	FAC	20
Andropogon virginicus	Herbaceous	FAC	15
Dichanthelium scoparium	Herbaceous	FACW	15
Lonicera japonica	Vine	FACU	35
Smilax bona-nox	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Schedonorus arundinaceus	Herbaceous	FAC	10
Pinus taeda	Herbaceous	FAC	5
Stellaria media	Herbaceous	FACU	5
Allium vineale	Herbaceous	FACU	5

% Dominant species FAC or wetter: 75%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.4
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: _____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: _____
Problematic Hydrophytic Vegetation: _____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-10	2.5Y 4/3	100					SANDY CLAY LOAM
10-20	2.5Y 5/4	100					SANDY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: _____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

Wetland Determination Data Form - Atlantic and Gulf Coastal Plain Region **Sampling Point Number: AM-2**

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Project:	CHESTERFIELD TO TYLER 230 KV LINES #205 AND #2003 REBUILD		
Applicant:	DOMINION ENERGY VIRGINIA	Section/Township/Range:	N/A
City/County:	CHESTERFIELD COUNTY	Subregion (LRR or MLRA):	MLRA 133A OF LRRP
State:	VIRGINIA	Site Latitude:	37.344777°
Investigator(s):	A. MCINTYRE	Site Longitude:	77.395761°
Date:	3/21/2019	Soil Map Unit Name:	LUCY-ORANGEBURG LOAMY SANDS

Summary of Findings: **UPLAND WEST OF STRUCTURE 205/19A**

Hydrophytic Vegetation is Present:	X	Normal Circumstances:	X	NWI Classification:	N/A
Hydric Soils are Present:		Disturbed Parameters (see Remarks):		Local Relief:	NONE
Wetland Hydrology is Present:		Problematic Parameters (see Remarks):		Landform:	FLAT
Sampled Area is within a Wetland:		Atypical Climate/Hydrology (see Remarks):		Slope %:	0-1

Hydrology Parameter:

Primary Indicators:		*Secondary Indicators:*
___ Surface Water (A1)	___ Water Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3)	___ Marl Deposits (B15)	___ Drainage Patterns (B10)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Moss Trim Lines (B16)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Dry-Season Water Table (C2)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Crayfish Burrows (C8)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Stunted or Stressed Plants (D1)
___ Inundation Visible on Aerial Imagery (B7)	___ Other	___ Geomorphic Position (D2)
		___ Shallow Aquitard (D3)
		___ FAC-Neutral Test (D5)
		___ Sphagnum Moss (D8)

Water Depths (inches):
Surface Water: ____
Water Table: ____
Saturated soil:

Remarks: **HYDROLOGY PARAMETER NOT MET.**

Vegetation Parameter:

Dominant Species	Stratum	IND	%
Pinus taeda	Shrub	FAC	25
Acer rubrum	Shrub	FAC	15
Schedonorus arundinaceus	Herbaceous	FAC	25
Rubus argutus	Herbaceous	FAC	20
Eupatorium capillifolium	Herbaceous	FACU	20
Lonicera japonica	Vine	FACU	25
Smilax bona-nox	Vine	FAC	10

Non-Dominant Species	Stratum	IND	%
Quercus rubra	Shrub	FACU	5
Solidago altissima	Herbaceous	FACU	10
Andropogon virginicus	Herbaceous	FAC	10
Pinus taeda	Herbaceous	FAC	5
Allium vineale	Herbaceous	FACU	5

% Dominant species FAC or wetter: 71%
NOTE: SPECIES INDICATOR STATUS ACCORDING TO 2016 NATIONAL WETLAND PLANT LIST

Prevalence Index: 3.3
Calculated using all species present.

Rapid Test for Hydrophytic Vegetation: ____
Dominance Test >50%: X
Prevalence Index is ≤ 3.0: ____
Problematic Hydrophytic Vegetation: ____

Remarks: **VEGETATION PARAMETER MET.**

Soil Parameter:

	Matrix		Redox Features				
Depth (inches)	Color (Moist)	%	Color (Moist)	%	Type	Loc	Texture
0-4	10YR 5/3	100					SANDY LOAM
4-13	10YR 6/6	100					SANDY LOAM
13-20	7.5YR 6/8	100					SANDY CLAY LOAM

Hydric Soil Indicators:

___ Histosol (A1)	___ Coast Prairie Redox (A16)	___ Redox Dark Surface (F6)	*Indicators for Problematic Hydric Soils*
___ Histic Epipedon (A2)	___ Sandy Mucky Mineral (S1)	___ Depleted Dark Surface (F7)	
___ Black Histic (A3)	___ Sandy Gleyed Matrix (S4)	___ Redox Depressions (F8)	___ 1cm Muck (A9)
___ Hydrogen Sulfide (A4)	___ Sandy Redox (S5)	___ Marl (F10)	___ 2cm Muck (A10)
___ Stratified Layers (A5)	___ Stripped Matrix (S6)	___ Depleted Ochric (F11)	___ Reduced Vertic (F18)
___ Organic Bodies (A6)	___ Dark Surface (S7)	___ Iron-Manganese Masses (F12)	___ Piedmont Floodplain Soils (F19)
___ 5cm Mucky Mineral (A7)	___ Polyvalue Below Surface (S8)	___ Umbric Surface (F13)	___ Anomalous Bright Loamy Soils (F20)
___ Muck Presence (A8)	___ Thin Dark Surface (S9)	___ Delta Ochric (F17)	___ Red Parent Material (TF2)
___ 1 cm Muck (A9)	___ Loamy Mucky Mineral (F1)	___ Reduced Vertic (F18)	___ Very Shallow Dark Surface (TF12)
___ Depleted Below Dark Surface (A1	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19)	___ Other
___ Thick Dark Surface (A12)	___ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)	

Restrictive Layer (If Observed)
Type: ____
Depth (inches):

Remarks: **SOIL PARAMETER NOT MET.**

APPENDIX C
REPRESENTATIVE PHOTOS

Photo: #1

Description:

Middle of the right of way.

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:
03/21/2019

Photo: #2

Description:

Middle of the right of way.

Orientation:

South

Photographer:

Andrew McIntyre

Stantec

Photo date:
03/21/2019

Photo: #3

Description:

Laydown yard in south portion of project area.

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:
03/21/2019

Photo: #4

Description:

Site entrance to Right of Way looking out to Old Bermuda Hundred Road (618).

Orientation:

South

Photographer:

Andrew McIntyre

Stantec

Photo date:
03/21/2019

Photo: #5

Description:

Site entrance to Right of Way from Old Bermuda Hundred Road (618).

Orientation:

North

Photographer:

Andrew McIntyre

Stantec

Photo date:
03/21/2019

APPENDIX D
APPROVED JURISDICTIONAL DETERMINATION FORM

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): April 17, 2019

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: U.S. Army Corps of Engineers, Norfolk District

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State:Virginia County/parish/borough: Chesterfield County City:
Center coordinates of site (lat/long in degree decimal format): Lat. 37.344777° N, Long. -77.395761° W.
Universal Transverse Mercator:
Name of nearest waterbody: James River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: N/A
Name of watershed or Hydrologic Unit Code (HUC): 02080206
☐ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):
☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): March 21st, 2019

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]
☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: .

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**
   Identify TNW: .

   Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**
   Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

   (i) General Area Conditions:
   Watershed size: **Pick List**
   Drainage area: **Pick List**
   Average annual rainfall: inches
   Average annual snowfall: inches

   (ii) Physical Characteristics:
   (a) Relationship with TNW:
   ☐ Tributary flows directly into TNW.
   ☐ Tributary flows through **Pick List** tributaries before entering TNW.

   Project waters are **Pick List** river miles from TNW.
   Project waters are **Pick List** river miles from RPW.
   Project waters are **Pick List** aerial (straight) miles from TNW.
   Project waters are **Pick List** aerial (straight) miles from RPW.
   Project waters cross or serve as state boundaries. Explain: .

   Identify flow route to TNW[5]: .
   Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is:
- ☐ Natural
- ☐ Artificial (man-made). Explain: .
- ☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):
- ☐ Silts
- ☐ Sands
- ☐ Concrete
- ☐ Cobbles
- ☐ Gravel
- ☐ Muck
- ☐ Bedrock
- ☐ Vegetation. Type/% cover:
- ☐ Other. Explain: .

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
- ☐ Dye (or other) test performed: .

Tributary has (check all that apply):
- ☐ Bed and banks
- ☐ OHWM[6] (check all indicators that apply):
  - ☐ clear, natural line impressed on the bank
  - ☐ changes in the character of soil
  - ☐ shelving
  - ☐ vegetation matted down, bent, or absent
  - ☐ leaf litter disturbed or washed away
  - ☐ sediment deposition
  - ☐ water staining
  - ☐ other (list):
  - ☐ the presence of litter and debris
  - ☐ destruction of terrestrial vegetation
  - ☐ the presence of wrack line
  - ☐ sediment sorting
  - ☐ scour
  - ☐ multiple observed or predicted flow events
  - ☐ abrupt change in plant community
- ☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):
- ☐ High Tide Line indicated by:
  - ☐ oil or scum line along shore objects
  - ☐ fine shell or debris deposits (foreshore)
  - ☐ physical markings/characteristics
  - ☐ tidal gauges
  - ☐ other (list):
- ☐ Mean High Water Mark indicated by:
  - ☐ survey to available datum;
  - ☐ physical markings;
  - ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

---

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size: acres
Wetland type. Explain: .
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:
Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**
Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☐ Not directly abutting
- ☐ Discrete wetland hydrologic connection. Explain: .
- ☐ Ecological connection. Explain: .
- ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .
Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   - ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
   - ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
   - ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
   - ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

Provide estimates for jurisdictional waters in the review area (check all that apply):
- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☐ Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name:U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Maps for Chester, Virginia (1994 revision) and Hopewell, Virginia (1996 revision). Figure 1.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Figure 4.
- ☒ National wetlands inventory map(s). Cite name: Figure 3.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps: Figure 5.
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☐ Photographs: ☐ Aerial (Name & Date): .
  - or ☐ Other (Name & Date): .
- ☐ Previous determination(s). File no. and date of response letter: .
- ☐ Applicable/supporting case law: .
- ☐ Applicable/supporting scientific literature: .
- ☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Stantec

Memo

To:	Amanda Mayhew Dominion Energy 10900 Nuckols Road, 4th Floor Glen Allen, Virginia 23060	From:	Corey Gray Stantec Consulting Services, Inc. 5209 Center Street Williamsburg, VA 23188
File:	203401247	Date:	February 27, 2019

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Stantec conducted database searches for solid and hazardous wastes and petroleum release sites within a 0.5-mile radius of the proposed Chesterfield - Tyler 230 kV Partial Rebuild project. The project is in Chesterfield County, Virginia and will take place within the existing transmission line right-of-way (ROW) with no additional ROW required. The project consists of a partial rebuild of approximately 2.5 miles of double circuit 230 kV transmission line (Lines 205 and 2003).

Stantec obtained publicly available data from the Environmental Protection Agency (EPA) Facility Registry System (FRS), which provide information about facilities, sites, or places subject to environmental regulation or of environmental interest. Although this data set includes all sites subject to environmental regulation by the EPA or other state authority, such as sites that fall under air emissions or wastewater programs, the results reported here only include those sites which fall under the EPA's hazardous waste, solid waste, remediation, and underground storage tank programs. These sites include *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA)/Superfund; *Resource Conservation and Recovery Act* (RCRA); and brownfield sites. Per this database, there are eighteen registered RCRA sites present within a 0.5-mile radius of the project (see Table 1). A review of the FRS forms has determined that some sites are unspecified. Most sites are listed as conditionally exempt small quantity generators and are located well outside the ROW. None of these sites are expected to be a concern for the project due to the distance and nature of the sites. The Chesterfield Power Station is listed as a RCRA site; however, the site is managed by Dominion Energy and is not anticipated to be a concern for the project.

The Virginia Department of Environmental Quality (DEQ) records were also searched for the presence of solid waste management facilities, Voluntary Remediation Program sites and petroleum releases within 0.5 mile of the proposed project. A total of seventeen (17) petroleum release sites were identified within the search radius. All but one petroleum release site have been closed. The remaining open site, 19941599, is associated with the Chesterfield Power Station and is located north of the partial rebuild project. As this release occurred in 1993, it is expected that the DEQ records need to be updated and this case should be closed. None of the other identified petroleum release sites identified within 0.5 mile of the proposed project intersect with the project ROW and all other cases have been closed (Table 3). Dominion Energy has a procedure in place to handle petroleum contaminated soil, if encountered; however, as all the release sites are located outside of the project area, none of the petroleum release sites are expected to have an impact on the proposed project.

One solid waste permit, Chesterfield Power Station, is located within 0.5 mile of the proposed project (Table 4). The project ROW is located within the power station; however, the power station ash ponds associated with the solid waste permit are not located within the ROW.

In summary, a total of eighteen RCRA sites, seventeen petroleum release sites, and one solid waste permit site are located within a 0.5-mile radius of the project site; however, none of the sites are located within the project ROW. No EPA registered Brownfield sites or CERCLA/Superfund sites are located within 0.5 mile of the project area.

Table 1. Hazardous waste sites identified by the EPA as occurring within 0.5-mile of the Chesterfield - Tyler 230 kV Partial Rebuild Project.

Facility ID Number	Site Name	Interest Type	Location	Latitude	Longitude	Proximity to Centerline (feet)
VAR000531525	Altec Industries, INC.	RCRA - Conditionally Exempt Small Quantity Generator	Chesterfield	37.34646	-77.3884	2,466
ICIS:22272, ICIS:22273, ICIS:32778, ICIS:3400057595, ICIS:3400057596, ICIS:3600415780, NPDES:VA0004146, NPDES:VAN040086, RBLC:2503, RCRAINFO:VAD000621177 TRIS:23836CHSTR500CO, TSCA:100605232	Chesterfield Power Station	ICIS-Major, NPDES-MAJOR, TSCA, RCRA, TRI	Chesterfield	37.3821	-77.3779	0
VAR000502427	Columbia Gas of Virginia	RCRA - Conditionally Exempt Small Quantity Generator	Chesterfield	37.36393	-77.3957	375
VAD988208336	Raceway #288	RCRA - Unspecified Universe	Chesterfield	37.3539	-77.3973	700
VAR000519512	Saia Motor Freight	RCRA - Small Quantity Generator	Chesterfield	37.35033	-77.3977	692
VAR000009233	Enivronmental Lab And Technical Training Center	RCRA - Conditionally Exempt Small Quantity Generator	Chesterfield	37.3764	-77.391	1,090
CEDS:200000073083	TCS Materials - Old Stage Road	State Master	Chesterfield	37.36409	-77.3973	1,562
RCRAINFO:VAD151207446 TRIS:23831WDMRT12100	Wood Mart of VA Company	TRI, RCRA - Unspecified Universe	Chesterfield	37.3647	-77.3981	1,103

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Facility ID Number	Site Name	Interest Type	Location	Latitude	Longitude	Proximity to Centerline (feet)
NPDES:VA0060194, NPDES:VA0088609, NPDES:VAL060194, RCRAINFO:VAD000765628	Chesterfield County MS4	Biosolids, ICIS-NPDES Major, ICIS-NPDES Non-Major, NPDES Pretreatment Program, POTW, Unspecified Universe	Chesterfield	37.38145	-77.378	2,548
AIR:VA0000005104100133, AIRS/AFS:5104100133, BR:VAD055046502, CEDS:200000093062, EIS:6868611, RCRAINFO:VAD055046502 TRIS:23831THHNC11200	The Hon Company	Air Minor, Hazardous Air Pollutant Major, Hazardous Waste Biennial Reporter, State Master, TRI Reporter, Unspecified Universe	Chesterfield	37.37756	-77.3903	1,122
VAR000515502	Penske Truck Leasing CO., LP	RCRA - Conditionally Exempt Small Quantity Generator	Chesterfield	37.34905	-77.4005	1,636
VAR000517219	FedEx Freight Richmond	Hazardous Waste Biennial Reporter, Unspecified Universe	Chesterfield	37.34749	-77.3994	1,615
RCRAINFO:VAD004168357	Adamson Global Technology Corporation	Compliance Activity, Unspecified Universe	Chesterfield	37.34679	-77.3911	1,828
VAD988174785	Heartland Express	RCRA - Conditionally Exempt Small Quantity Generator	Chesterfield	37.35086	-77.3871	2,365
VAD988193298	Allwaste Services of Virginia INC.	RCRA - Unspecified Universe	Chesterfield	37.35791	-77.3925	645
AIR:VA0000005104100483, AIRS/AFS:5104100483, CEDS:200000205860, TRIS:2383WRGSCN114LD	Ready Mixed Concrete Company - Old Stage Road	Air Synthetic Minor, State Master, TRI Reporter	Chesterfield	37.37369	-77.3939	1,243
AIR:VA0000005104100102, AIRS/AFS:5104100102, CEDS:200000073099, ICIS:3400055033, NPDES:VA0088153, RCRAINFO:VAD980714810	Peirce Mechanical INC.	Air Minor, Enforcement/Compliance Activity, ICIS-NPDES Non-Major, SQG, State Master	Chesterfield	37.37711	-77.3813	1,503

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Facility ID Number	Site Name	Interest Type	Location	Latitude	Longitude	Proximity to Centerline (feet)
VAD070429485	REC INC.	RCRA - Small Quantity Generator	Chesterfield	37.35022	-77.3884	1,990

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Table 2: State registered storage tanks identified to occur within a 0.5-mile radius of the Chesterfield - Tyler 230 kV Partial Rebuild Project.

Facility ID Number	UST OR AST	Site Name	Location	Latitude	Longitude	Proximity to Centerline (feet)	Status
4012652	UST & AST	Chesterfield Power Station	Chesterfield	37.38352	-77.383603	1,378	Active
4037458	UST	FedEx Freight East Incorporated	Chesterfield	37.34672122	-77.40069323	2,042	Active
4037550	UST	Heartland Express Incorporated	Chesterfield	37.34643103	-77.38985476	2,115	Active
4039179	AST	The Contractor Yard Inc	Chesterfield	37.354818	-77.391755	930	Active
4039756	UST	Quarles Q Card Fuel Site	Chesterfield	37.36000758	-77.39770129	907	Active
4037734	UST	Conway Transportation Services	Chesterfield	37.36803809	-77.39690297	846	Active
4039583	UST	Cardinal Freight Leased to Epes Transport	Chesterfield	37.34708464	-77.39987147	1,769	Active
4039597	UST	E Fueling Network	Chesterfield	37.350395	-77.3996	1,252	Active
4018954	UST	Suburban Propane	Chesterfield	37.35456201	-77.396636	482	Inactive
4018758	UST	ABC Building Supply	Chesterfield	37.346407	-77.390425	2,000	Inactive
4002111	UST	Ruan	Chesterfield	37.368202	-77.399014	1,458	Active
4002086	UST	Sonoco Products Company	Chesterfield	37.352147	-77.39095001	1,221	Inactive
4020542	UST	VEPCO - Central Division Satellite Garage	Chesterfield	37.37429	-77.39325099	1,206	Inactive
4002021	UST	Oil Transport Incorporated	Chesterfield	37.35127	-77.387236	2,317	Inactive
4013088	UST	Pine Tree Nursery	Chesterfield	37.35086	-77.38711399	2,362	Inactive

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Facility ID Number	UST OR AST	Site Name	Location	Latitude	Longitude	Proximity to Centerline (feet)	Status
4018303	UST	Raceway 6787	Chesterfield	37.35387589	-77.39725044	645	Active
4001640	UST	Proctors Creek Wastewater Plant	Chesterfield	37.378255	-77.379254	2,073	Inactive
4001604	UST	Epes Trucking	Chesterfield	37.350367	-77.394706	170	Inactive
4008923	UST	VEPCO Comm Operations Training Center	Chesterfield	37.375584	-77.39187101	1,148	Inactive
4010667	UST	Ruan	Chesterfield	37.354086	-77.398689	1,067	Inactive
4025338	UST	Richmond Cold Storage Chester	Chesterfield	37.353517	-77.395586	154	Inactive
4014675	UST	Adamson Global Technology	Chesterfield	37.346375	-77.39048701	1,996	Inactive
4026914	UST	First Impressions	Chesterfield	37.35054	-77.389925	1,553	Inactive
4040736	UST & AST	Penske Truck Leasing Corp	Chesterfield	37.34874762	-77.39996955	1,470	Active
4009866	UST	7 Eleven Inc 40023	Chesterfield	37.35608552	-77.40325668	2,435	Active
4043346	AST	Chester Asphalt Plant	Chesterfield	37.360767	-77.397072	741	Active

Reference: **Chesterfield - Tyler 230 kV Partial Rebuild Project, Chesterfield County, Virginia: Solid & Hazardous Waste Search**

Table 3. Petroleum releases identified by the DEQ as occurring within 0.5 mile of the Chesterfield - Tyler 230 kV Partial Rebuild Project.

Site Name	PC Number	Latitude	Longitude	Status	Type of Release	Federally Registered Tank?	Proximity to Centerline (feet)
Proctors Creek WWTP	19984152	37.38272804	-77.39159314	Closed	Confirmed	N	1,348
VEPCO Central Division Satellite Garage	19932233	37.37230512	-77.39495504	Closed	Suspected	Y	1,467
Central Division Satellite Garage	19940010	37.37447506	-77.3928956	Closed	Suspected	Y	323
Farmington Farms	19930273	37.36511803	-77.39811507	Closed	Confirmed	Y	1,388
Rennies Chester Yard	20004229	37.36807304	-77.39842597	Closed	Confirmed	Y	1,592
Oil Transport Inc	19900032	37.35151825	-77.38924776	Closed	Confirmed	Y	2,194
Continental Land Resources.	19900645	37.34875765	-77.38696854	Closed	Confirmed	N	3,196
Virginia Power Chesterfield Power Station	19941599	37.38342361	-77.38407955	Open	Confirmed	Y	1,610
Central Division Satellite Garage	19940220	37.38162381	-77.38670498	Closed	Confirmed	Y	1,436
RaceTrac SS	19984201	37.35359805	-77.39669953	Closed	Confirmed	Y	610
First Impressions	19890537	37.35055754	-77.38870755	Closed	Confirmed	Y	2,413
Ruan	19891418	37.35359076	-77.39640055	Closed	Confirmed	Y	462
Virginia Power Chesterfield District Office	19910919	37.3815138	-77.37866374	Closed	Suspected	Y	2,976
Former Oil Transport Incorporated	20064281	37.35151825	-77.38924776	Closed	Confirmed	Y	2,194
Cross Fluid Power	20064315	37.3509882	-77.38780861	Closed	Confirmed	Y	2,719
TFC Recycling - Chester Facility	20114310	37.36204088	-77.39910203	Closed	Confirmed	N	1,688
RaceTrac 288	20144001	37.35359805	-77.39669953	Closed	Confirmed	Y	610