APPENDIX J

Terrestrial Ecological Evaluation Supporting Documents

APPENDIX J.1

U.S. Army Corps of Engineers Wetland Delineation Forms

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Vashon Island Closed Landfill West Hillslope | City/County: King County | Sampling Date: 5/9/2019

Applicant/Owner: King County | State: WA | Sampling Point: DP 01

Investigator(s): Joe Pursley, Nikole Stout | Section, Township, Range: 36/T23N/R2E

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): concave | Slope (%): 5

Subregion (LRR): A | Lat: 47 26'3.47N | Long: 122 30'9.95"W | Datum: WGS84

Soil Map Unit Name: Alderwood and Kitsap soils, very steep | NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? ○ Yes ◉ No (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:
Monthly precipitation was above average in February and below average in March. This wetland is within a depression adjacent and hydrologically connected to seep wetlands.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1.				
2.				
3.				
4.				
	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Rubus spectabilis*	45	**Y**	90.0	FAC
2. *Vaccinium ovatum*	5	N	10.0	FACU
3.				
4.				
5.				
	50 = Total Cover			
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Lysichiton americanus*	15	**Y**	33.3	OBL
2. *Scirpus microcarpus*	15	**Y**	33.3	OBL
3. *Epilobium watsonii*	15	**Y**	33.3	FACW
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	45 = Total Cover			
Woody Vine Stratum (Plot size: 15ft x 15ft)				
1.				
2.				
	= Total Cover			

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	45	x 3 =	135
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	95 (A)		215 (B)

Prevalence Index = B/A = 2.263

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? ◉ Yes ○ No

Remarks:
Obligate and FACW plants dominate the herb stratum.

SOIL

Sampling Point: DP 01

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	2/1	100						Sandy Silt	
4-9	10YR	2/1	90	10YR	4/1	5	D	M	Sandy Silt	
				10YR	3/4	5	C	M	Sandy Silt	concentration is faint
9-18	10YR	2/1	40	10YR	3/4	5	C	M	Sandy Silt	concentration is distinct
	10YR	4/1	55						Sandy Silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? ◉ Yes ○ No

Remarks:
The matrix is mixed with dark chroma and depleted soils with redox features present.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☑ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? ◉ Yes ○ No Depth (inches): 8

Water Table Present? ◉ Yes ○ No Depth (inches): 0

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 0

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:
Standing water present in the wetland.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Vashon Island Closed Landfill West Hillslope | City/County: King County | Sampling Date: 5/9/2019

Applicant/Owner: King County | State: WA | Sampling Point: DP 02

Investigator(s): Joe Pursley, Nikole Stout | Section, Township, Range: 36/T23N/R2E

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): convex | Slope (%): 5

Subregion (LRR): A | Lat: 47 26'3.36N | Long: 122 30'9.67"W | Datum: WGS84

Soil Map Unit Name: Alderwood and Kitsap soils, very steep | NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? ○ Yes ◉ No (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:
Monthly precipitation was above average in February and below average in March.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. *Thuja plicata*	50	Y	71.4	FAC
2. *Alnus rubra*	15	Y	21.4	FAC
3. *Acer macrophyllum*	5	N	7.1	FACU
4.				
	70	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Ilex aquifolium*	20	Y	33.3	FACU
2. *Rubus ursinus*	15	Y	25.0	FACU
3. *Vaccinium ovatum*	15	Y	25.0	FACU
4. *Rubus spectabilis*	10	N	16.7	FAC
5.				
	60	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Polystichum munitum*	75	Y	88.2	FACU
2. *Athyrium filix-femina*	5	N	5.9	FACU
3. *Equisetum arvense*	5	N	5.9	FAC
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
	85	= Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)				
1.				
2.				
		= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	80	x 3 =	240
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals:	215 (A)		780 (B)

Prevalence Index = B/A = 3.628

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? ○ Yes ◉ No

Remarks:
FACU or FAC vegetation is dominant in the upland area.

SOIL

Sampling Point: DP 02

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR	3/3	100						Loam	Coarse organics in soil
4-9	10YR	3/4	100						Loam	Coarse roots in soil
9-14	10YR	4/3	40						Sandy Loam	
	10YR	5/4	60						Sandy Loam	
14-18	2.5Y	5/2	95	10YR	4/4	5	C	M	Silty Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:

High chroma soils until 14 inches below the surface.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:

No hydrology indicators present at the time of the site visit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Vashon Island Closed Landfill West Hillslope | City/County: King County | Sampling Date: 5/9/2019

Applicant/Owner: King County | State: WA | Sampling Point: DP 03

Investigator(s): Joe Pursley, Nikole Stout | Section, Township, Range: 36/T23N/R2E

Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none | Slope (%): 30

Subregion (LRR): A | Lat: 47 25'59.78"N | Long: 122 30'12.22"W | Datum: WGS84

Soil Map Unit Name: Alderwood and Kitsap soils, very steep | NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? ○ Yes ◉ No (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:
Monthly precipitation was above average in February and below average in March. This wetland primarily receives water from seeps in the hillslope.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. *Alnus rubra*	55	Y	100.0	FAC
2.				
3.				
4.				
	55	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Ilex aquifolium*	20	Y	80.0	FACU
2. *Rubus ursinus*	5	Y	20.0	FACU
3.				
4.				
5.				
	25	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Equisetum arvense*	60	Y	40.0	FAC
2. *Rubus spectabilis*	50	Y	33.3	FAC
3. *Athyrium filix-femina*	25	N	16.7	FAC
4. *Lysichiton americanus*	10	N	6.7	OBL
5. *Vaccinium parvifolium*	5	N	3.3	FACU
6.				
7.				
8.				
9.				
10.				
11.				
	150	= Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)				
1.				
2.				
		= Total Cover		

% Bare Ground in Herb Stratum 5

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	190	x 3 =	570
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	230 (A)		700 (B)

Prevalence Index = B/A = 3.043

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? ◉ Yes ○ No

Remarks:
Hydrophytic vegetation dominates the wetland area.

SOIL

Sampling Point: DP 03

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR	2/1	100						Silt Loam	
9-16	---		60	10YR	4/6	10	C	M	Silty Clay	concentration is prominent
	10YR	4/1	30						Silty Clay	2% oxidized rhizospheres

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☑ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? ◉ Yes ○ No

Remarks:
The matrix is depleted, with over 60% being gleyed.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☑ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): 8

Water Table Present? ◉ Yes ○ No Depth (inches): 10

Saturation Present? (includes capillary fringe) ◉ Yes ○ No Depth (inches): 9

Wetland Hydrology Present? ◉ Yes ○ No

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

Remarks:
A high water table with saturation present within 12 inches of the surface.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project/Site: Vashon Island Closed Landfill West Hillslope | City/County: King County | Sampling Date: 5/9/2019

Applicant/Owner: King County | State: WA | Sampling Point: DP 04

Investigator(s): Joe Pursley, Nikole Stout | Section, Township, Range: 36/T23N/R2E

Landform (hillslope, terrace, etc.): hillslope | Local relief (concave, convex, none): none | Slope (%): 30

Subregion (LRR): A | Lat: 47 25'59.59"N | Long: 122 30'12.34"W | Datum: WGS84

Soil Map Unit Name: Alderwood and Kitsap soils, very steep | NWI Classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? ○ Yes ◉ No (If no, explain in Remarks.)

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? ◉ Yes ○ No

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

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

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

Remarks:
Monthly precipitation was above average in February and below average in March.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30ft x 30ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status
1. *Alnus rubra*	45	Y	47.4	FAC
2. *Acer macrophyllum*	30	Y	31.6	FACU
3. *Thuja plicata*	20	Y	21.1	FAC
4.				
	95	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15ft x 15ft)				
1. *Rubus ursinus*	20	Y	80.0	FACU
2. *Gaultheria shallon*	5	Y	20.0	FACU
3.				
4.				
5.				
	25	= Total Cover		
Herb Stratum (Plot size: 5ft x 5ft)				
1. *Polystichum munitum*	25	Y	25.0	FACU
2. *Rubus spectabilis*	20	Y	20.0	FACU
3. *Corylus cornuta*	20	Y	20.0	FACU
4. *Urtica dioica*	15	N	15.0	FAC
5. *Tolmiea menziesii*	5	N	5.0	FAC
6. *Galium aparine*	5	N	5.0	FACU
7. *Festuca rubra*	5	N	5.0	FAC
8. *Carex deweyana*	5	N	5.0	FAC
9.				
10.				
11.				
	100	= Total Cover		
Woody Vine Stratum (Plot size: 15ft x 15ft)				
1.				
2.				
		= Total Cover		

% Bare Ground in Herb Stratum

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	220 (A)		785 (B)

Prevalence Index = B/A = 3.568

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? ○ Yes ◉ No

Remarks:
FACU or FAC vegetation is dominant in the upland area.

SOIL

Sampling Point: DP 04

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					Sandy Loam	
6-12	10YR 3/3	100					Sandy Loam	
12-18	10YR 4/3	60					Silty Sand	
	10YR 5/3	40					Silty Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1) (except MLRA 1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ 2 cm Muck (A10)
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? ○ Yes ◉ No

Remarks:
High chroma matrix.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
- ☐ Salt Crust (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Stunted or Stressed Plants (D1) (LRR A)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Raised Ant Mounds (D6) (LRR A)
- ☐ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? ○ Yes ◉ No Depth (inches): _____

Water Table Present? ○ Yes ◉ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ○ Yes ◉ No Depth (inches): _____

Wetland Hydrology Present? ○ Yes ◉ No

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

Remarks:
No hydrology indicators present at the time of the site visit.