

January 22, 2019



**Re: Silverdale Property – Wetland and Shoreline Delineation Study**

The Watershed Company Reference Number: 180827

Dear [REDACTED]:

On August 28, 2018, Ecologist [REDACTED] from The Watershed Company completed a wetland and shoreline delineation study on the property located at [REDACTED]  
[REDACTED]

This letter summarizes the findings of the fieldwork and details applicable federal, state, and local regulations. The following attachments are included:

- Wetland and OHWM Delineation Sketch
- Wetland Determination Data Forms

## Methods

Public-domain information on the subject property was reviewed for this delineation study. These sources include the following:

- USDA Natural Resources Conservation Service (NRCS) Soil maps;
- U.S. Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) maps;
- Washington Department of Fish and Wildlife (WDFW) interactive mapping programs (PHS on the Web and SalmonScape);
- Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS), and
- Kitsap County's GIS mapping website (iMAP)
- Department of Ecology – Water Quality Atlas.

Characterization of climatic conditions for precipitation was determined using the WETS table methodology from the *USDA NRCS document Part 650 Engineering Field Handbook, National Engineering Handbook, Hydrology Tools for Wetland Identification and Analysis, Chapter 19* (September 2015). The Seattle-Tacoma International AP station as



recorded by NOAA from 1981-2010 (<http://agacis.rcc-acis.org/>) was used as a source for precipitation data. The WETS table methodology uses climate data from the three months prior to the site visit month to determine if normal conditions are present.

### **Wetlands**

The subject property was evaluated for any jurisdictional wetlands within the property boundary as well as any offsite wetland boundaries and buffers that may impact your site. Wetland determinations were based on the methodology from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region Version 2.0* (Regional Supplement; US Army Corps of Engineers [Corps] May 2010), and the definition of jurisdictional wetland in the Kitsap County Code (KCC). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at several locations within the parcel boundary to make the determination. Two data points, taken on the eastern edge of the property, were marked with yellow- and black-striped flagging. No wetlands were found within the parcel boundary. Two adjacent off-site (western) wetlands were found but not delineated due to being located on private property. Off-site wetlands were documented using best professional judgement to estimate the approximate wetland boundary based on observed field characteristics; including visual analysis of available hydrology indicators and vegetation identification. Additional desktop analysis, including review of recent and historical aerial imagery of the off-site areas, were conducted to gather any further information on hydrology and changes in vegetation composition. All of the estimated/observed field data and office data are compiled in order to estimate the wetland rating/category for any observed off-site wetlands.

Wetlands in Kitsap County are classified based the *2014 Western Washington Wetland Rating System* (Ecology Publication 14-06-029) (KCC 19.200.210.A.2).

### **Shorelines**

The study area is along the shoreline of Dyes Inlet in Puget Sound. The shoreline was evaluated for the presence or absence of an ordinary high water mark (OHWM) as defined by the Revised Code of Washington (RCW) 90.58.030 and the Washington Administrative Code (WAC) 220-660-030. The OHWM edge was located by examining the bed and bank physical characteristics and vegetation, using recent guidance from the Department of Ecology, *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State* (Publication no. 16-06-029).

The delineated shoreline was marked in the field with 15 blue- and white-striped flags.

## Findings

The study area is located within the Kitsap Drainage Basin (WRIA 15); in Township 25 North, Range 1 East, Section 21. The subject parcel is zoned Urban Restricted (1-5 DUAc) and includes a gravel driveway, single-family residence, maintained lawn areas, various landscaping vegetation, ornamental trees, and an accessory structure. The subject parcel is 2.11 acres, located at the south end of Mickelberry Road with Dyes Inlet abutting the property to the south. NRCS-mapped soils in the study area are Kapowsin gravelly ashy loam, 0 to 6 percent on the western half of the property and Norma fine sandy loam on the eastern half of the property.

Public-domain information on the subject property was reviewed for this study and includes the following, as summarized in Table 1.

No wetlands were located on the subject parcel. Two wetlands (Wetlands A and B) were located offsite to the west of the subject parcel. The shoreline of Dyes Inlet lies along the southern edge of the property.

Table 1. Summary of online mapping and inventory resources.

Resource	Summary
USDA Natural Resources Conservation Service, Web Soil Survey (WSS) application	Kapowsin gravelly ashy loam, 0 to 6 percent and Norma fine sandy loam
U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps	No wetlands are mapped via NWI website.
Washington Department of Fish and Wildlife, Priority Habitats and Species (PHS on the Web)	Estuarine and marine wetlands, waterfowl concentrations, and western pond turtle are mapped within Dyes Inlet abutting the property to the south. Clear Creek, approximately 1,000 feet to the north, is mapped as occurrence/migration for steelhead, coho, coastal cutthroat, chum, and fall Chinook.
Washington Department of Fish and Wildlife, SalmonScape	Clear Creek, approximately 1,000 feet to the north, is mapped as containing coho, fall chum, fall Chinook and winter steelhead.

Washington Department of Natural Resources, Forest Practices Application Mapping Tool (FPARS)	No mapped stream within the property boundary on FPARS website.
Kitsap County's GIS mapping website	The southern half of the property is mapped as within the 100 year floodplain. Wetlands are mapped within Dyes Inlet to the south.
WETS weather conditions based on precipitation from the prior three months	Drier than normal

### ***Wetland A***

The boundary of Wetland A was not delineated due to being on private property. Wetland A is located adjacent to the southwestern corner of the subject property. It is a large estuarine wetland that contains an emergent vegetation class. Common plants observed in the wetland include pickleweed, gumweed, seaside plantain, seaside arrowgrass, and seashore saltgrass. Preliminary investigations near the parcel boundary showed a saturated soil 2 inches below the soil surface with a lack of redoximorphic (redox) features, likely due to high organic content masking redox.

### ***Wetland B***

The boundary of Wetland B was not delineated due to being on private property. Wetland B is located approximately 50 feet to the west of the subject property boundary. It is a depressional wetland that contains a scrub-shrub and emergent vegetation class. Common plants observed in the wetland include two *Salix* species (willow), soft rush, red-osier dogwood, *Rosa* species (rose), and hardhack.

### ***Other Areas***

There is a small vegetated area within Puget Sound's Dyes Inlet south of the property. The vegetation is growing in mineral sediment and may not be a true soil. It is separated from the subject property by an area of un-vegetated tidal mudflat containing a distributary channel draining and filling a lagoon to the south. Vegetation in this area is transitory since it is part of the constantly changing lagoon sandspit. This area is continually in a state of flux, building in some years and eroding in others. It does not have a direct upland connection to the subject parcel and is a small part of the Dyes Inlet tidal system. This area is best characterized as part of the dynamic Dyes Inlet deep water habitat.

**Non-wetland Areas**

Non-wetland areas in the subject parcel are dominated by landscape vegetation, large ornamental trees bisecting the property, and a large manicured lawn.

A stormwater drain is located in the northeastern corner of the property boundary. This drain enters a culvert which passes under the driveway then enters into a stormwater ditch. This ditch travels to the south for approximately 160 feet before infiltrating. A strip of vegetation growth along this ditch runs north to south along the eastern edge of the property boundary. Vegetation in this area is dominated by Himalayan blackberry, nightshade, reed canarygrass, willowherb, and cedar.

Data points were taken in an area on the eastern side of the property that displayed wetland characteristics. This is a small sloped area within the lawn (15 feet x 20 feet oval), which directly abuts the stormwater ditch (Figure 1). The ditch is approximately 1.5 feet below the elevation of the lawn and therefore likely overtops during storm events effectively providing hydrology to this small area. It is therefore assumed that this small lawn area that exhibits wetland characteristics is an artifact of the stormwater ditch and not considered a regulated wetland.



Figure 1. Small lawn area, associated with stormwater ditch to the left.

A small structure, located in the northwestern corner of the property, contains a well-head that is leaking (Figures 2 and 3). Water leaking from the well-head flows downhill to the south before entering a small covered drainage pipe in the lawn.



Figures 2 and 3. View inside well housing structure, showing leaking well-head (left). View looking south showing water flowing downhill from leaking well-head (right).

There are also two small seep areas to the south, directly downhill from the leaking well-head that are wet (Figure 4). These small seep areas, each approximately 20 square feet in size, are likely an artifact of the leaking well-head.



Figure 4. Small seep area downhill to the south of the leaking well-head.

### **Shoreline**

Dyes Inlet abuts the property at a rock-lined bulkhead to the south. The property is situated at the mouth of a small bay to Dyes Inlet. Wrack, seen near the top of the

bulkhead, and algae markings were used to determine the OHWM. It was low tide during the time of the site visit and water draining from the bay was continually flowing along the bulkhead out into Dyes Inlet.

### **Local Regulations**

In Silverdale, wetlands within shoreline jurisdiction are regulated under the KCC, Chapters 22.400 – Shoreline Master Program, which references the Critical Areas Ordinance (CAO) dated February 26, 2007. All future references to critical areas regulations under Title 19 are to the 2007 CAO, except as provided under KCC 22.400.115.F. Wetlands which are outside of shoreline jurisdiction would be regulated under the current critical areas regulations per KCC 19.200.

Wetland buffers, within shoreline jurisdiction, are designated based on the wetland classification and land use impact “intensity” based on development types (KCC 19.200.220(B)). According to KCC 19.200.220(A), the proposed land use action for this property (single family residential lots) would fall under the “moderate” rating of impact from proposed changes in land use.

Preliminary rating shows Wetland A as a Category II estuarine wetland. Per KCC Table 19.200.220 (E), Category II estuary wetlands receive a standard buffer width of 110 feet for a “moderate” impact of proposed land use.

Preliminary rating shows Wetland B as a Category IV with a preliminary score of 15 total points. Per KCC Table 19.200.220(C), Category IV wetlands receive a standard buffer width of 40 feet for a “moderate” impact of proposed land use. KCC 19.200.220.F (per 2007 CAO) also states that a building or impervious surface setback line of 15 feet is required from the edge of any wetland buffer.

Wetland buffer widths may be modified provided that reductions or alterations to the required buffer width cannot be avoided, minimized or mitigated (in that order) per KCC 19.200.220.C. Options to modify wetland buffers can be found in KCC 19.200.220(C) and include buffer averaging and administrative buffer reductions.

Buffer averaging may be permitted where the applicant can demonstrate that such averaging can clearly provide as great or greater functions and values as would be provided under the standard buffer. Several standards also apply to buffer averaging including; the decrease in buffer width is minimized by limiting the degree or magnitude of the regulated activity, a habitat assessment report is submitted that shows no adverse impacts to threatened, endangered, or sensitive fish or wildlife species, width averaging will not adversely impact the wetland, and the total buffer area after averaging is no less than the total buffer area prior to averaging. According to the Kitsap County Shoreline Master Program, Chapter 22.400.115.F.2, a wetland buffer may

not be reduced through averaging more than 25 percent of the standard buffer width applied per Section 19.200.220(A) and (B). The 50 percent averaging reduction allowed in Section 19.200.220(C) shall not apply.

Dyes Inlet, a marine water abutting the property to the south, is considered a shoreline of the state and per KCC 22.200.100 and KCC 19.300.310 is classified as a Type S water. A Type S water with an “urban conservancy” designation requires a standard buffer width of 100 feet. Utilizing mitigation options to achieve no net loss of shoreline ecological functions, the standard buffer may be reduced down to 85 feet for “urban conservancy” designations per KCC 22.400.120.B.2.c. The standard buffer may be further reduced to 50 feet where a net gain in shoreline ecological functions can be documented and achieved KCC 22.400.120.B.2.c.

## **State and Federal Regulations**

### **U.S. Army Corps of Engineers (Corps)**

Wetlands and other Waters of the U.S. are regulated by the Corps under section 404 of the Clean Water Act. Any proposed filling or other direct impacts to Waters of the U.S., including wetlands (except isolated wetlands), would require notification and permits from the Corps. Unavoidable impacts are typically required to be compensated through implementation of an approved mitigation plan.

Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Compliance with the Endangered Species Act must be demonstrated for activities within jurisdictional wetlands and the 100-year floodplain. Application for Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology and a cultural resource study in accordance with Section 106 of the National Historic Preservation Act.

### **Washington Department of Ecology**

Similar to the Corps, Ecology, under Section 401 of the Clean Water Act, is charged with reviewing, conditioning, and approving or denying certain federally permitted actions that result in discharges to state waters. However, such Ecology review would only become necessary if a Section 404 permit from the Corps was issued. Therefore, if wetland and aquatic area filling activities are avoided, water quality authorization from Ecology would not be needed.



**Washington Department of Fish and Wildlife (WDFW)**

Chapter 77.55 RCW (the Hydraulic Code) gives WDFW the authority to review, condition, and approve or deny “any construction activity that will use, divert, obstruct, or change the bed or flow of state waters.” This provision includes any in-water work, the crossing or bridging of any state waters and can sometimes include stormwater discharge to state waters. If a project meets regulatory requirements, WDFW will issue a Hydraulic Project Approval (HPA).

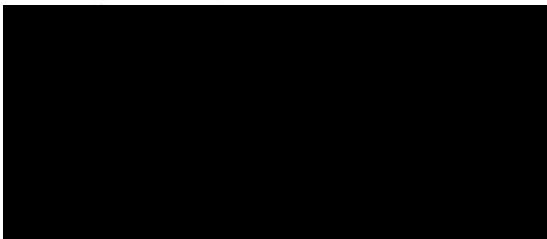
In general, neither the Corps nor Ecology or WDFW regulates wetland and stream buffers, unless direct impacts are proposed to the critical area. However, any development proposed within shoreline jurisdiction (approximately 200 feet from the OHWM of Dyes Inlet) would be under the joint authority of Kitsap County and Ecology. When direct impacts are proposed, mitigated wetlands and streams may be required to employ buffers based on Corps and Ecology joint regulatory guidance.

**Disclaimer**

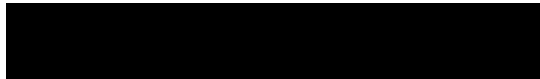
The information contained in this letter or report is based on the application of technical guidelines currently accepted as the best available science and in conjunction with the manuals and criteria outlined in the methods section. All discussions, conclusions and recommendations reflect the best professional judgment of the author(s) and are based upon information available to us at the time the study was conducted. All work was completed within the constraints of budget, scope, and timing. The findings of this report are subject to verification and agreement by the appropriate local, State and Federal regulatory authorities. No other warranty, expressed or implied, is made.

Please call if you have any questions or if we can provide you with any additional information.

Sincerely,



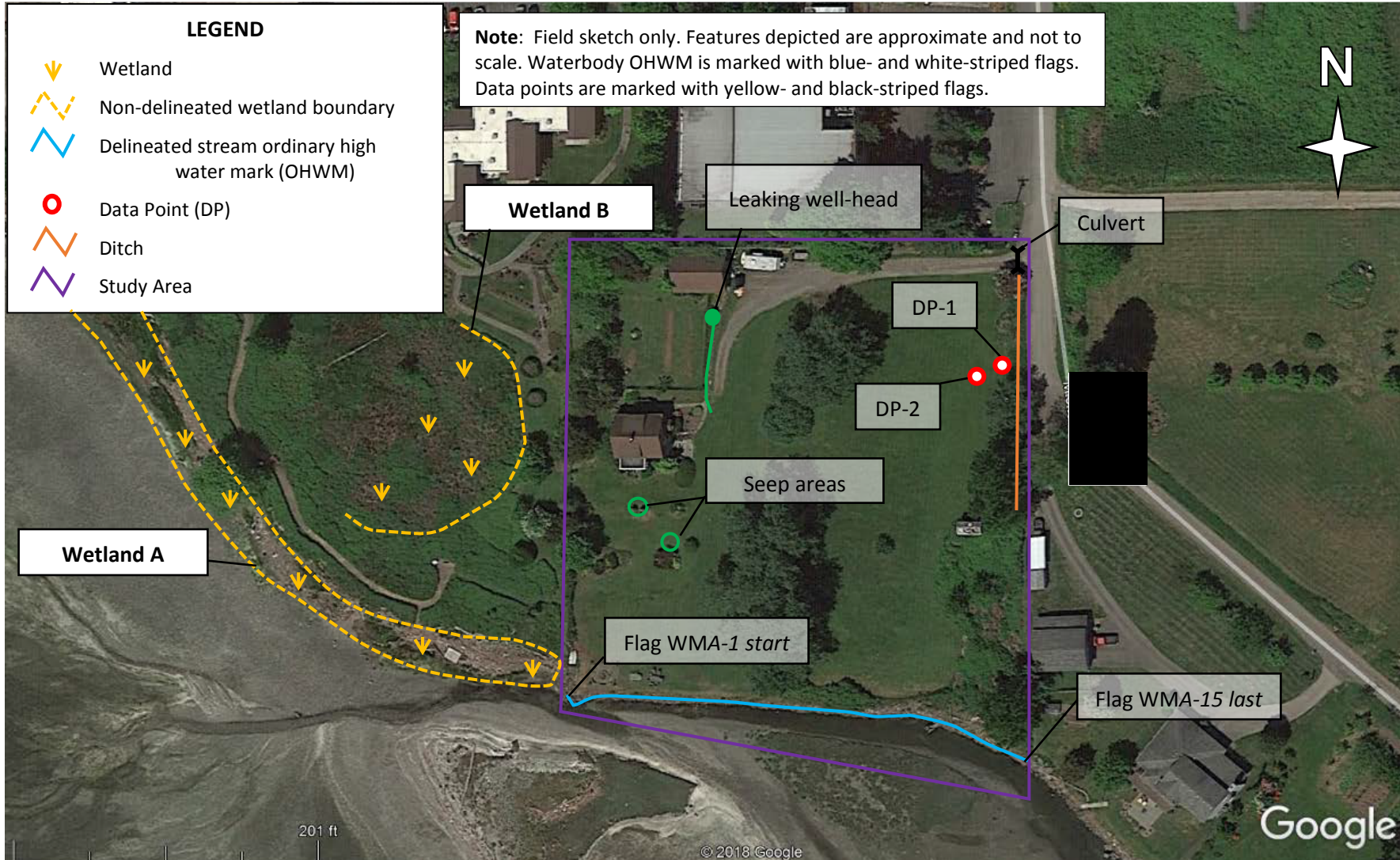
Enclosures



**OHWM Delineation and Wetland Reconnaissance Sketch – Friedman Property**

Site Address:   
 Parcel Number:   
 Site Visit Date: August 24, 2018

Prepared for:   
 TWC Ref. No.: 





**WETLAND DETERMINATION DATA FORM**  
 Western Mountains, Valleys, and Coast Supplement to the  
 1987 COE Wetlands Delineation Manual

750 Sixth Street South  
 Kirkland, Washington 98033  
 (425) 822-5242  
 watershedco.com

**DP- 1**

Project Site: [REDACTED]		Sampling date: <b>8-24-18</b>
Applicant/Owner: [REDACTED]		Sampling Point: <b>DP-1</b>
Investigator: [REDACTED]		City/County: <b>Kitsap County</b>
Sect., Township, Range: <b>S 21 T 25N R 1E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Slope</b>	Slope (%): <b>&lt;5%</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Norma fine sandy loam (37)</b>	Datum:	
Soil Map Unit Name: <b>Norma fine sandy loam (37)</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	<b>Is the Sampling Point within a Wetland?</b>	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soils Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

Remarks: **Drier than normal according to WETS table methodology. This area is likely an artifact of the stormwater ditch, and therefore not regulated as wetland. The area is a 26 feet x 20 feet oval within the lawn area and directly abuts the ditch. The ditch is 1.5 feet below the elevation of the lawn.**

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <b><i>Thuja plicata</i></b>	<b>Trace</b>	<b>N</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC:	<b>3</b> (A)
2.				Total Number of Dominant Species Across All Strata:	<b>3</b> (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>100</b> (A/B)
4.	<u>Trace</u>	= Total Cover			
<b>Sapling/Shrub Stratum (Plot size: 3m diam.)</b>					
1.				<b>Prevalence Index Worksheet</b>	
2.				Total % Cover of	
3.				Multiply by	
4.				OBL species	x 1 =
5.				FACW species	x 2 =
				FAC species	x 3 =
				FACU species	x 4 =
				UPL species	x 5 =
				Column totals	(A) (B)
	<u>0</u>	= Total Cover		Prevalence Index = B / A =	
<b>Herb Stratum (Plot size: 1m diam.)</b>					
1. <b><i>Holcus lanatus</i></b>	<b>20</b>	<b>Y</b>	<b>FAC</b>		
2. <b><i>Ranunculus repens</i></b>	<b>70</b>	<b>Y</b>	<b>FAC</b>		
3. <b><i>Field grass</i></b>	<b>20</b>	<b>Y</b>	<b>FAC*</b>		
4.				<b>Hydrophytic Vegetation Indicators</b>	
5.				<input checked="" type="checkbox"/> Dominance test is > 50%	
6.				<input type="checkbox"/> Prevalence test is ≤ 3.0 *	
7.				Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)	
8.				<input type="checkbox"/> Wetland Non-Vascular Plants *	
9.				<input type="checkbox"/> Problematic Hydrophytic Vegetation * (explain)	
10.				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
11.					
	<u>110</u>	= Total Cover			
<b>Woody Vine Stratum (Plot size: )</b>					
1.				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
2.					
	<u>0</u>	= Total Cover			
% Bare Ground in Herb Stratum:					
Remarks: <b>*Presumed FAC</b>					

**SOIL**

**Sampling Point – DP- 1**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 2/1	98	7.5YR 4/4	2	C	M, PL	Sandy loam	
12-18	7.5YR 6/4	95	7.5YR 5/6	5	C	M	Sand	
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains <sup>2</sup> Loc: PL=Pore Lining, M=Matrix <b>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</b> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Thick Dark Surface (A12) <input checked="" type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Redox Depressions (F8)								
Restrictive Layer (if present): Type: Depth (inches):						<b>Hydric soil present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks:								

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <i>Primary Indicators (minimum of one required: check all that apply):</i> <input type="checkbox"/> Surface water (A1) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Stunted or Stressed Plants (D1) (LRR A) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (explain in remarks)				<i>Secondary Indicators (2 or more required):</i> <input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 4B) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Raised Ant Mounds (D6) (LRR A) <input type="checkbox"/> Frost-Heave Hummocks			
<b>Field Observations</b> Surface Water Present?    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Water Table Present?     Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): Saturation Present?       Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (in): (includes capillary fringe)				<b>Wetland Hydrology Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:							
Remarks: <b>No saturation present, soils were dry down to 18 inches. However, oxidized rhizospheres were observed.</b>							

Project Site: [REDACTED]		Sampling date: <b>8-24-18</b>
Applicant/Owner: [REDACTED]		Sampling Point: <b>DP-2</b>
Investigator: [REDACTED]		City/County: <b>Kitsap County</b>
Sect., Township, Range: <b>S 21 T 25N R 1E</b>		State: <b>WA</b>
Landform (hillslope, terrace, etc): <b>Slope</b>	Slope (%): <b>&lt;5%</b>	Local relief (concave, convex, none): <b>Concave</b>
Subregion (LRR): <b>A</b>	Lat:	Long:
Soil Map Unit Name: <b>Norma fine sandy loam (37)</b>	Datum:	
Soil Map Unit Name: <b>Norma fine sandy loam (37)</b>		NWI classification: <b>None</b>
Are climatic/hydrologic conditions on the site typical for this time of year? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		(If no, explain in remarks.)
Are "Normal Circumstances" present on the site? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> significantly disturbed?		
Are Vegetation <input type="checkbox"/> , Soil <input type="checkbox"/> , or Hydrology <input type="checkbox"/> naturally problematic		(If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Point within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Remarks: <b>Drier than normal according to WETS table methodology.</b>				

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: 5m diam.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1.				Number of Dominant Species that are OBL, FACW, or FAC:	<b>2</b> (A)
2.				Total Number of Dominant Species Across All Strata:	<b>2</b> (B)
3.				Percent of Dominant Species that are OBL, FACW, or FAC:	<b>100</b> (A/B)
4.					
<b>0</b> = Total Cover					
Sapling/Shrub Stratum (Plot size: 3m diam.)				Prevalence Index Worksheet	
1.				Total % Cover of	
2.				Multiply by	
3.				OBL species	x 1 =
4.				FACW species	x 2 =
5.				FAC species	x 3 =
<b>0</b> = Total Cover				FACU species	x 4 =
				UPL species	x 5 =
				Column totals	(A) (B)
Herb Stratum (Plot size: 1m diam.)				Prevalence Index = B / A =	
1. <b>Ranunculus repens</b>	<b>10</b>	<b>N</b>	<b>FAC</b>		
2. <b>Field grass</b>	<b>80</b>	<b>Y</b>	<b>FAC*</b>		
3. <b>Trifolium repens</b>	<b>30</b>	<b>Y</b>	<b>FAC</b>		
4. <b>Holcus lanatus</b>	<b>15</b>	<b>N</b>	<b>FAC</b>		
5.					
6.					
7.					
8.					
9.					
10.					
11.					
<b>135</b> = Total Cover					
Woody Vine Stratum (Plot size: )				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1.					
2.					
<b>0</b> = Total Cover					
% Bare Ground in Herb Stratum:					
Remarks: <b>*Presumed FAC</b>					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/1	95	7.5YR 5/6	5	C	M	Sandy loam	
10-18	7.5YR 6/4	92	7.5YR 5/6	8	C	M	Sand	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains    <sup>2</sup>Loc: PL=Pore Lining, M=Matrix

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

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

**Indicators for Problematic Hydric Soils<sup>3</sup>**

2cm Muck (A10)  
 Red Parent Material (TF2)  
 Other (explain in remarks)

<sup>3</sup> 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:

## HYDROLOGY

**Wetland Hydrology Indicators:**

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

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

*Secondary Indicators (2 or more required):*

Water-Stained Leaves (B9) (MLRA 1, 2, 4A & 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

**Field Observations**

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

Wetland Hydrology Present?    Yes     No

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

Remarks:    **Soils dry down to 18 inches.**