

August 10, 2010

Tony Leavitt  
City of Kirkland Planning Department  
123 Fifth Avenue  
Kirkland, WA 98033

**Re: Former Schott Property Wetland Delineation Report**

The Watershed Company Reference Number: 100714.1

Dear Tony:

On July 27<sup>th</sup> and 29<sup>th</sup>, 2010, Ecologist Meagan McManus and I visited the former Schott property (parcel # 2926059036) located near the intersection of NE 120<sup>th</sup> Street and 113<sup>th</sup> Avenue NE in Kirkland. The purpose of our visit was to conduct a wetland delineation study on the subject property.

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

- Wetland Delineation Map
- Wetland Rating Form
- Wetland Determination Data Forms

**Methods**

The study area was evaluated for wetlands using methodology from the *Washington State Wetlands Identification and Delineation Manual* (Manual) (Washington Department of Ecology [Ecology] 1997) and 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). Wetland boundaries were determined on the basis of an examination of vegetation, soils, and hydrology. Areas meeting the criteria set forth in the Manual and Regional Supplement were determined to be wetland. Soil, vegetation, and hydrologic parameters were sampled at multiple locations along the wetland boundaries to make the determination. Data points on-site are marked with yellow- and black-striped flags. We recorded data at two of the most representative locations.

Prior to conducting our field investigation, I reviewed, a previous wetland delineation study, *Wetland Delineation on the Schott Property, southwest corner of 113th Avenue NE and NE 120th Street, Kirkland, Washington*, Adolfson Associates, Inc., February 2, 2001.

Additional public information was reviewed, including National Wetlands Inventory (NWI) maps, National Resources Conservation Service (NRCS) soil survey maps, and *Kirkland's Streams, Wetlands, and Wildlife Study*, The Watershed Company, July 1998.

Delineated wetlands were classified using the City of Kirkland's *Wetland Field Data Form* (Rating Form).

## **Findings**

Generally, our study agrees with the previous Adolfson study, which determined the presence of a 2.3-acre, Type 1 wetland located within the subject property. There are likely slight variations between the two studies in relation to the precise location of the wetland boundary. Minor variations and changes in wetland boundaries are common, particularly when significant time has elapsed between delineation studies (nine years, in this case), as wetlands are dynamic by nature.

The property is located in the Juanita Creek Basin, a primary basin. The surrounding landscape is residential and commercial, rendering the subject property surrounded by development along the west, south, and east sides. The property slopes downhill from southwest to northeast, at an average slope of approximately 25 percent, before leveling out in the northeastern portion of the property. The slope gradient was determined using iMAP, King County's online GIS and mapping system. There is one wetland, Wetland A (see below), on the subject property. Non-wetland areas primarily contain a well-developed and diverse second-growth mixed coniferous and deciduous forest. The primary vegetation in the non-wetland areas includes Douglas-fir, western red cedar, red alder and bigleaf maple, with an understory of salmonberry, Himalayan blackberry, stinging nettle, and sword fern. Some portions of the non-wetland forested areas, particularly in the southeastern portion of the property, contain significant areas of non-native understory. A large area consisting of a Himalayan blackberry monoculture is present along the eastern property boundary.

### *Wetland A*

Wetland A constitutes the on-site portion of the larger Heronfield Wetlands, also identified as Juanita 6 (The Watershed Company, 1998). Wetland A, a depressional wetland that also contains areas with slope wetland characteristics, encompasses much of the northeastern portion of the site and extends off-site to the north. Most of Wetland A lies at the base of the hillside that occupies the majority of the site. However, a portion of the wetland extends up the slope where it is supported by a series of groundwater seeps. A complex and diverse habitat assemblage is present within Wetland A. Forested, scrub-shrub, and emergent vegetation classes are interspersed throughout the wetland area, and numerous habitat snags and fallen logs are present. Prevalent vegetation in Wetland A includes red alder, black cottonwood, salmonberry,

Douglas-spirea, red-osier dogwood, common cattail, skunk cabbage, small-fruited bulrush, giant horsetail, and creeping buttercup. The soil of Wetland A, as recorded at Data Point 1, is a dark grey (5Y 4/1) sandy loam with dark yellowish brown (10YR 3/6) redoximorphic features. Other areas sampled exhibited silty loam soils with some organic matter present. NRCS soil maps indicate that most of the interior of Wetland A contains Seattle Muck, an organic soil. Hydrology from Wetland A is provided by a high groundwater table and the previously mentioned hillside seeps. Wetland A is connected to the Juanita 4 and Juanita 7 wetlands via a series of ditches and culverts (The Watershed Company, 1998).

### **Local Regulations**

Wetlands in Kirkland are regulated under Chapter 90 of the Kirkland Zoning Code (KZC). Under the code wetlands are rated as one of three types based on the Rating Form, which scores wetlands based on composition, structural diversity, proximity to Lake Washington, and connectivity to other habitats. Wetland A contains more than 0.25 acres of organic soils, as indicated on the NRCS maps. By satisfying this criterion, Wetland A qualifies as a Type 1 wetland. Type 1 wetlands located in a primary basin are required to have a standard buffer width of 100 feet. An additional structure setback of 10 feet beyond the wetland buffer is also applicable (KZC 90.45.1-2).

Buffer reduction through enhancement is allowable under KZC 90.60.2.a.2. Much of the buffer along the western portions of the property is in a healthy, natural state, leaving little opportunity for enhancement. However, as previously described, much of the buffer in the southeastern portion of the property contains extensive Himalayan blackberry, present as either the primary understory vegetation or, in some areas, as an extensive monoculture. These areas do have the potential for enhancement and may qualify for the applicable buffer reduction stipulations.

Per KZC 90.60.2.a.1, buffer averaging may also be an option as high quality second growth forest is found both within and outside of buffer areas.

### **State and Federal Regulations**

Wetlands are also regulated by the U.S. Army Corps of Engineers (Corps) under section 404 of the Clean Water Act. Any filling of Waters of the State, including wetlands (except isolated wetlands), would require notification and permits from the Corps. Wetland A would likely not be considered isolated. A formal isolated status inquiry can be requested from the Corps through the Jurisdictional Determination process. Federally permitted actions that could affect endangered species (i.e. salmon or bull trout) may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. Application for

Corps permits may also require an individual 401 Water Quality Certification and Coastal Zone Management Consistency determination from Ecology.

In general, neither the Corps nor Ecology regulates wetland buffers, unless direct impacts are proposed. When direct impacts are proposed, mitigated wetlands may be required to employ buffers based on Corps and Ecology joint regulatory guidance.

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,



Ryan Kahlo  
Ecologist

Enclosures



**WETLAND FIELD DATA FORM – Former Schott property located at Parcel #2926059036 Kirkland, WA 98033.**

Rating done on 8-2-2010 by The Watershed Company.



**WETLAND FIELD DATA FORM**

BEGIN BY CHECKING ANY OF THE FOLLOWING (a. – e.) THAT APPLY:

- a. The wetland is contiguous to Lake Washington;
- b. The wetland contains at least 1/4 acre of organic soils, such as peat bogs or mucky soils;
- c. The wetland is equal to or greater than 10 acres in size and having three or more wetland classes, as defined by the U.S. Fish & Wildlife Service (Cowardin et al., 1979), one of which is open water;
- d. The wetland has significant habitat value to state or federally listed threatened or endangered wildlife species; or
- e. The wetland contains state or federally listed threatened or endangered plant species.

IF ANY OF THE CRITERIA LISTED ABOVE ARE MET, THEN THE WETLAND IS CONSIDERED TO BE TYPE 1. IF THAT IS THE CASE, PLEASE CONTINUE TO COMPLETE THE ENTIRE FORM, BUT DO NOT ASSIGN POINTS.

IF THE WETLAND DOES NOT MEET THE CRITERIA LISTED ABOVE FOR TYPE 1, COMPLETE THE ENTIRE FORM, USING THE ASSIGNED POINTS TO DETERMINE IF IT IS A TYPE 2 OR TYPE 3 WETLAND.

Type 2 wetlands typically have at least two wetland vegetation classes, are at least partially surrounded by buffers of native vegetation, connected by surface water flow (perennial or intermittent) to other wetlands or streams, and contain or are associated with forested habitat.

**1. Total wetland area**

Estimate wetland area and score from choices	Acres	Point Value	<u>Points</u>
	<div style="border: 1px solid black; padding: 2px;">&gt;20.00</div>	= 6	
	10-19.99	= 5	
	5-9.99	= 4	
	1-4.99	= 3	
	0.1-0.99	= 2	
	<0.1	= 1	

(points)

2. Wetland classes: Determine the number of wetland classes that qualify, and score according to the table.

	# of Classes	Points
<b>Open Water:</b> if the area of open water is >1/3 acre or >10% of the total wetland area	1	= 1
<b>Aquatic Beds:</b> if the area of aquatic beds is >10% of the <b>open water</b> area <b>or</b> >1/2 acre	2	= 3
<b>Emergent:</b> if the area of emergent class is >1/2 acre <b>or</b> >10% of the total wetland area	3	= 5
<b>Scrub-Shrub:</b> if the area of scrub-shrub class is >1/2 acre <b>or</b> >10% of the total wetland area	4	= 7
<b>Forested:</b> if the area of forested class is >1/2 acre or >10% of the total wetland area	5	= 10

(points)

### 3. Plant species diversity.

For all wetland classes which qualified in 2 above, count the number of different plant species and score according to the table below. You do not have to name them.

e.g., if a wetland has an aquatic bed class with 3 species, and emergent class with 4 species and a scrub-shrub class with 2 species, you would circle 2, 2, and 1 in the second column (below).

Class	# of Species	Point Value	Class	# of Species	Point Value
Aquatic Bed	1-2	= 1	Scrub-Shrub	1-2	= 1
	3	= 2		3-4	= 2
	>3	= 3		(>4)	= 3
Emergent	1-2	= 1	Forested	1-2	= 1
	3-4	= 2		(3-4)	= 2
	(>4)	= 3		>4	= 3

(points)

### 4. Structural diversity.

If the wetland has a forested class, add 1 point for each of the following attributes present:

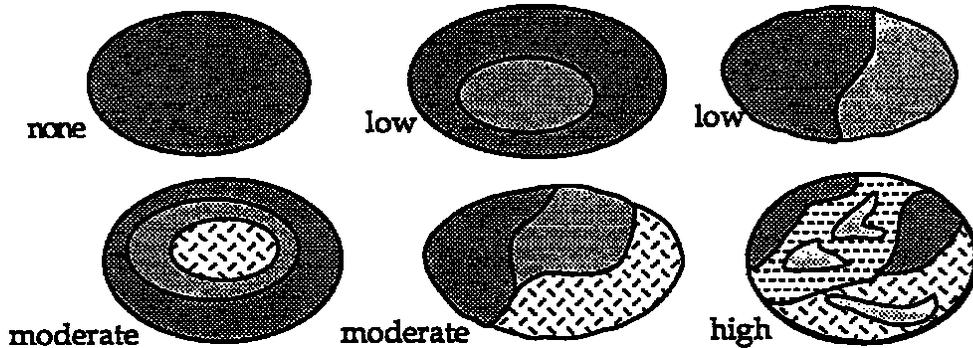
(Trees >50' tall)	= 1
(Trees 20' to 49' tall)	= 1
(shrubs)	= 1
(Herbaceous ground cover)	= 1

(points)

**5. Interspersion between wetland classes.**

Decide from the diagrams below whether interspection between wetland classes is high, moderate, low or none

- 3 = High
- 2 = Moderate
- 1 = Low
- 0 = None



(points)

**6. Habitat features**

Add points associated with each habitat feature listed:

- Is there evidence of current use by beavers? = 3
- Is a heron rookery located within 300'? = 2
- Are raptor nest(s) located within 300'? = 1
- Are there at least 2 standing dead trees (snags) per acre? = 1
- Are there any other perches (wires, poles, or posts)? = 1
- Are there at least 3 downed logs per acre? = 1

(points)

**7. Connection to streams**

Is the wetland connected at any time of the year via surface water? (score one answer only)

Is the wetland connected at any time of the year via surface water?

- To a perennial stream or a seasonal stream *with* fish = 5
- To a seasonal stream *without* fish = 3
- Is not connected to any stream = 0

(points)

**8. Buffers**

Step 1: Estimate (to the nearest 5%) the percentage of each buffer or land-use type (below) that adjoins the wetland boundary. Then multiply these percentages by the factor(s) below and enter result in the column to the right.

	% of Buffer	Step 1	Width Factor	Step 2
Roads, buildings or parking lots	<u>55%</u>	X 0 = <u>0</u>	_____ =	<u>0</u>
Lawn, grazed pasture, vineyards or annual crops	<u>5%</u>	X 1 = <u>5</u>	<u>1</u> =	<u>5</u>
Ungrazed grassland or orchards	_____ %	X 2 = _____	_____ =	_____
Open water or native grasslands	_____ %	X 3 = _____	_____ =	_____
Forest or shrub	<u>40%</u>	X 4 = <u>160</u>	<u>3</u> =	<u>480</u>
			Add buffer total	<u>485</u>

Step 2: Multiply result(s) of step 1:

By 1 if buffer width is 25-50'

By 2 if buffer width is 50-100'

By 3 if buffer width is >100'

Enter results and add subscores

Step 3: Score points according to the following table:

Buffer Total

900-1200 = 4

600-899 = 3

300-599 = 2

100-299 = 1

**(points)**

**9. Connection to other habitat areas:**

Is there a riparian corridor to other wetlands within 0.25 of a mile, or a corridor >100' wide with good forest or shrub cover to any other habitat area? = 5

Is there a narrow corridor <100' wide with good cover or a wide corridor >100' wide with low cover to any other habitat area? = 3

Is there a narrow corridor <100' wide with low cover or a significant habitat area within 0.25 mile but no corridor? = 1

Is the wetland and buffer completely isolated by development and/or cultivated agricultural land? = 0

**(points).**

**10. Scoring**

Add the scores to get a total: **NA**

Question: Is the total greater than or equal to 22 points?

Answer:

Yes = Type 2

No = Type 3

**DP-1**

Project Site: <b>Former Schott Property</b>		Sampling Date: <b>7-27-10</b>	
Applicant/Owner: <b>City of Kirkland</b>		Sampling Point: <b>DP- 1</b>	
Investigator: <b>RK, MKM</b>		City/County: <b>Kirkland / King</b>	
Sect., Township, Range: <b>S 29 T 26N R 5E</b>		State: <b>WA</b>	
Landform (hillslope, terrace, etc): <b>Depression</b>	Slope (%): <b>5</b>	Local relief (concave, convex, none): <b>Concave</b>	
Subregion (LRR): <b>A</b>	Lat: <b>47.7073</b>	Long: <b>-122.1096</b>	Datum:
Soil Map Unit Name: <b>Bellingham silt loam</b>	NW1 classification: <b>PSSA</b>		
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>Is this Sampling Point within a Wetland?</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Hydric Soils Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Wetland Hydrology Present? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Remarks:		

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

Tree Stratum (Plot size 5m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet	
1. <b><i>Populus balsamifera</i></b>	<b>25</b>	<b>Yes</b>	<b>FAC</b>	Number of Dominant Species that are OBL, FACW, or FAC: <b>5</b> (A)	
2. <b><i>Alnus rubra</i></b>	<b>20</b>	<b>Yes</b>	<b>FAC</b>	Total Number of Dominant Species Across All Strata: <b>6</b> (B)	
3.				Percent of Dominant Species that are OBL, FACW, or FAC: <b>83</b> (A/B)	
4.					
<b>45</b> = Total Cover					
Sapling/Shrub Stratum (Plot size 3m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet	
1. <b><i>Salix sitchensis</i></b>	<b>65</b>	<b>Yes</b>	<b>FACW</b>		
2.				OBL species	x 1 =
3.				FACW species	x 2 =
4.				FAC species	x 3 =
5.				FACU species	x 4 =
6.				UPL species	x 5 =
<b>65</b> = Total Cover				Column totals	(A) (B)
Herb Stratum (Plot size 1m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index = B / A =	
1. <b><i>Phalaris arundinacea</i></b>	<b>40</b>	<b>Yes</b>	<b>FACW</b>		
2. <b><i>Equisetum telmateia</i></b>	<b>30</b>	<b>Yes</b>	<b>FACW</b>		
3. <b><i>Ranunculus repens</i></b>	<b>10</b>	<b>No</b>	<b>FACW</b>		
4. <b><i>Rumex crispus</i></b>	<b>10</b>	<b>No</b>	<b>FACW</b>		
5.				Hydrophytic Vegetation Indicators	
6.					
7.					Prevalence test is ≤ 3.0 *
8.					Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)
9.					Wetland Non-Vascular Plants *
10.					Problematic Hydrophytic Vegetation * (explain)
11.				* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
<b>90</b> = Total Cover					
Woody Vine Stratum (Plot size )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
1. <b><i>Rubus armeniacus</i></b>	<b>15</b>	<b>Yes</b>	<b>FACU</b>		
2.					
<b>15</b> = Total Cover					
% Bare Ground in Herb Stratum					
Remarks:					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100					Silty clay loam	
6-10	5Y4/1	80	10YR 3/6	20			sandy loam	
10-16	10Y3/1	70	10YR 4/6	30			clay	

<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.)**

<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 checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input 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)

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

<input type="checkbox"/> 2cm Muck (A10)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> 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):*

<input type="checkbox"/> Surface water (A1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Water-Stained Leaves (except MLRA 1, 2, 4A & 4B) (B9)
<input checked="" 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)

*Secondary Indicators (2 or more required):*

<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

**Field Observations**

Surface Water Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Depth (in):	
Water Table Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (in):	10
Saturation Present? (includes capillary fringe)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Depth (in):	Surface

**Wetland Hydrology Present?**    Yes     No

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

Remarks:

DP-2

Project Site: <b>Former Schott Property</b>		Sampling Date: <b>7-27-10</b>	
Applicant/Owner: <b>City of Kirkland</b>		Sampling Point: <b>DP- 2</b>	
Investigator: <b>RK, MKM</b>		City/County: <b>Kirkland / King</b>	
Sect., Township, Range: <b>S 29 T 26N R 5E</b>		State: <b>WA</b>	
Landform (hillslope, terrace, etc): <b>Depression</b>		Local relief (concave, convex, none): <b>Concave</b>	
Slope (%): <b>5</b>		Datum: <b>-122.1096</b>	
Subregion (LRR): <b>A</b>	Lat: <b>47.7073</b>	NW1 classification: <b>None</b>	
Soil Map Unit Name: <b>Bellingham silt loam</b>			
Are climatic/hydrologic conditions on the site typical for this time of year? <input checked="" type="checkbox"/> Yes <input 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? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is this Sampling Point within a Wetland? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Hydric Soils Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Wetland Hydrology Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Remarks:	

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

Tree Stratum (Plot size 5m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet																					
1. <b>Liquidambar styraciflua</b>	<b>15</b>	<b>Yes</b>	<b>NO</b>	Number of Dominant Species that are OBL, FACW, or FAC: <b>2</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>67</b> (A/B)																					
4.	<b>15</b> = Total Cover																								
Sapling/Shrub Stratum (Plot size 3m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. <b>Populus balsamifera</b>	<b>15</b>	<b>Yes</b>	<b>FAC</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">Total % Cover of</th> <th>Multiply by</th> </tr> <tr> <td>OBL species</td> <td></td> <td>x 1 =</td> </tr> <tr> <td>FACW species</td> <td></td> <td>x 2 =</td> </tr> <tr> <td>FAC species</td> <td></td> <td>x 3 =</td> </tr> <tr> <td>FACU species</td> <td></td> <td>x 4 =</td> </tr> <tr> <td>UPL species</td> <td></td> <td>x 5 =</td> </tr> <tr> <td>Column totals</td> <td></td> <td>(A) (B)</td> </tr> </table>	Total % Cover of		Multiply by	OBL species		x 1 =	FACW species		x 2 =	FAC species		x 3 =	FACU species		x 4 =	UPL species		x 5 =	Column totals		(A) (B)
Total % Cover of		Multiply by																							
OBL species		x 1 =																							
FACW species		x 2 =																							
FAC species		x 3 =																							
FACU species		x 4 =																							
UPL species		x 5 =																							
Column totals		(A) (B)																							
2.																									
3.																									
4.																									
5.	<b>15</b> = Total Cover																								
Herb Stratum (Plot size 1m diam. )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index Worksheet																					
1. <b>Ranunculus repens</b>	<b>50</b>	<b>Yes</b>	<b>FACW</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Prevalence Index = B / A =</td> </tr> </table>	Prevalence Index = B / A =																				
Prevalence Index = B / A =																									
2. <b>Equisetum telmateia</b>	<b>10</b>	<b>No</b>	<b>FACW</b>																						
3. <b>Rumex crispus</b>	<b>10</b>	<b>No</b>	<b>FACW</b>																						
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
11.	<b>70</b> = Total Cover																								
Woody Vine Stratum (Plot size )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators																					
1. <b>Rubus armeniacus</b>	<b>10</b>	<b>Yes</b>	<b>FACU</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td><b>Yes</b></td> <td>Dominance test is &gt; 50%</td> </tr> <tr> <td></td> <td>Prevalence test is ≤ 3.0 *</td> </tr> <tr> <td></td> <td>Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)</td> </tr> <tr> <td></td> <td>Wetland Non-Vascular Plants *</td> </tr> <tr> <td></td> <td>Problematic Hydrophytic Vegetation * (explain)</td> </tr> </table>	<b>Yes</b>	Dominance test is > 50%		Prevalence test is ≤ 3.0 *		Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)		Wetland Non-Vascular Plants *		Problematic Hydrophytic Vegetation * (explain)											
<b>Yes</b>	Dominance test is > 50%																								
	Prevalence test is ≤ 3.0 *																								
	Morphological Adaptations * (provide supporting data in remarks or on a separate sheet)																								
	Wetland Non-Vascular Plants *																								
	Problematic Hydrophytic Vegetation * (explain)																								
2.																									
	<b>10</b> = Total Cover																								
% Bare Ground in Herb Stratum																									
Remarks:																									

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR 2/2	100					Gravelly sand	
4-8	10YR 3/4	100					Gravelly sand	
Below 8"							Fill	

<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.)**

- |  |   |
|--|---|
| <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 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)                   |

**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):

- |  |  |
|--|--|
| <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 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)                            |

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?                          | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Water Table Present?                            | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |
| Saturation Present? (includes capillary fringe) | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | Depth (in): |

Wetland Hydrology Present?

Yes

No

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

Remarks: **Some dampness, not saturated**