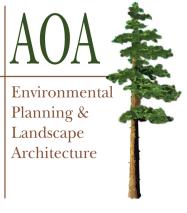
## Altmann Oliver Associates, LLC

PO Box 578

Carnation, WA 98014

Office (425) 333-4535

Fax (425) 333-4509



AOA-5623

May 6, 2019

Oisin Enfield oenfield@yahoo.com

SUBJECT: Critical Areas Designation (CADS18-0004)

Parcel 727310-0161, King County, WA

Dear Oisin:

On April 4, 2018 I conducted an initial wetland reconnaissance throughout the southern portion of the undeveloped subject property utilizing the methodology outlined in the May 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Additional field investigations throughout the northern portion of the site were conducted on March 5 and 11, 2019.

One wetland (Wetland A) and one stream (Stream 1) were identified and delineated on or immediately adjacent to the property during the field investigations. The boundary of the wetland was subsequently surveyed and is depicted on **Figure 1**. **Attachment A** contains data sheets prepared for representative locations in both the wetland and upland. These data sheets document the vegetation, soils, and hydrology information that aided in the wetland boundary delineation.

#### Wetland A and Stream 1

Wetland A includes Depressional, Riverine, and Sloped Hydrogeomorphic (HGM) classes and was considered a Depressional wetland per WA Department of Ecology guidance. The portion of the wetland within the vicinity of the site consisted primarily of a forested and scrub-shrub plant community that included red alder (*Alnus rubra*), willow (*Salix* sp.), salmonberry (*Rubus spectabilis*), vine maple (*Acer circinatum*), skunk cabbage (*Lysichiton americanum*), lady fern (*Athyrium filix-femina*), and reed canarygrass (*Phalaris arundinacea*).

Wetland A meets the criteria for a Category II wetland with 20 Habitat Points (**Attachment B**). Category II wetlands with 20 Habitat Points require a standard 110-foot buffer plus 15-foot building setback from the wetland edge. This buffer requirement is consistent with the buffer previously approved as part of an earlier CAD for the property.

Oisin Enfield May 6, 2019 Page 2

The Type F stream requires a standard 165-foot buffer plus 15-foot building setback. The required buffers from Wetland A and Stream 1 encumber the entire site except for the far northwest corner.

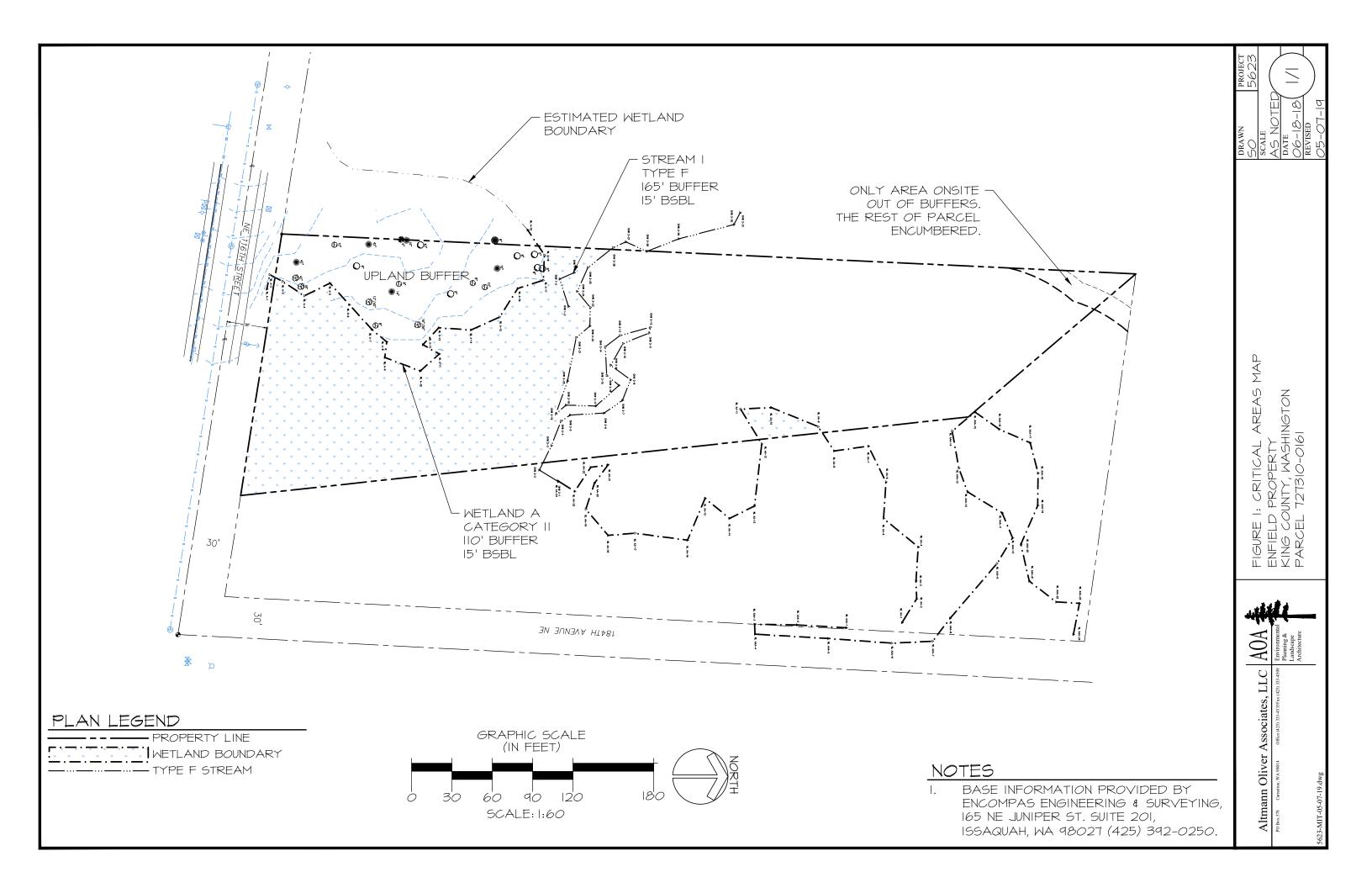
If you have any questions regarding the delineation or rating, please give me a call.

Sincerely,

ALTMANN OLIVER ASSOCIATES, LLC

John Altmann Ecologist

Attachments



# ATTACHMENT A DATA SHEETS

# TP#1 ~8 INTO WETLAND AT A-7

Project/Site: PARCEL 727310-0	161	City/Cou	nty: <u>K</u>	NO COUNTY Sampling Date: 04/04/
Applicant/Owner: ENFIELD		·		State: WA Sampling Point: TP (
Investigator(s): ALTMANN				Range: SEC 30, TZGN, RGE W.M.
Landform (hillslope, terrace, etc.): DEPESSIO	<i>. L</i> .	Local re	lief (concave	e, convex, none): CONCAVE Slope (%):
Subregion (LRR):	Lat:			Long: Datum:
Soil Map Unit Name:				NWI classification:
Are climatic / hydrologic conditions on the site typical for				
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology				e "Normal Circumstances" present? Yes X No
			•	needed, explain any answers in Remarks.)  locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes X	No		the Sample	ed Area
Wetland Hydrology Present? Yes X	No	w	ithin a Wetla	and? Yes X No
Remarks:				
VEGETATION – Use scientific names of pla	nts.			
Tree Stratum (Plot size: 8 R	Absolute		nt Indicator	Dominance Test worksheet:
1. Acer circing tum			? Status FAC	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2			170	That Are OBL, FACW, or FAC: (A)
3				Total Number of Dominant Species Across All Strata: (B)
4				Species Across All Strata: (B)
Sapling/Shrub Stratum (Plot size: 8/R )	20	= Total C	Cover	Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
1. Rubus spectabilis	40	Υ	FAC	Prevalence Index worksheet:
2. Acer Circunstum	30		FAC	Total % Cover of: Multiply by:
3				OBL species x1 =
4				FACW species x2 =
5				FAC species x3 =
Hart Otraction (Dist.)	70	= Total C	over	FACU species x4 =
Herb Stratum (Plot size: 8'19) 1. Ly Sich, ton Gine ricanum	20	Y	ADI	UPL species x 5 = Column Totals: (A) (B)
2. Athyrium filix - femina	20	<del></del>	<u> </u>	Coldini Totals (A) (B)
3. Maignthe mum dilatatum	20	7	FAC	Prevalence Index = B/A =
4. Tolmieg Menziesii	10	~	GAC	Hydrophytic Vegetation Indicators:
5				1 - Rapid Test for Hydrophytic Vegetation
3.				2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹
7				
3				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
)				5 - Wetland Non-Vascular Plants <sup>1</sup>
0				Problematic Hydrophytic Vegetation¹ (Explain)
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
	70=	Total Co	ver	be present, unless disturbed or problematic.
Voody Vine Stratum (Plot size:)				
				Hydrophytic
		Tetal O		Vegetation Present?  Yes X No
% Bare Ground in Herb Stratum	=	rotal Cov	ver	
Remarks:				

Profile Description: (Describe	to the depti	h needed to document the indicator or confirm	the absence o	f indicators.)
Depth Matrix		Redox Features		
(inches) Color (moist)	%	Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	Texture	Remarks
0-8" 10TR 2/1			MUCK	
9-15" 104R 4/1	100		Silty cla	٧
	-			
			-	
	-			
		Reduced Matrix, CS=Covered or Coated Sand Gra	ains. <sup>2</sup> Locat	tion: PL=Pore Lining, M=Matrix.
ydric Soil Indicators: (Applic		RRs, unless otherwise noted.)		for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	_	Sandy Redox (S5)		Muck (A10)
Histic Epipedon (A2)	_	Stripped Matrix (S6)	Red P	arent Material (TF2)
Black Histic (A3)		_ Loamy Mucky Mineral (F1) (except MLRA 1)		Shallow Dark Surface (TF12)
_ Hydrogen Sulfide (A4) _ Depleted Below Dark Surface		Loamy Gleyed Matrix (F2)	Other	(Explain in Remarks)
_ Depleted Below Dark Surface _ Thick Dark Surface (A12)	e (A11)	Depleted Matrix (F3) Redox Dark Surface (F6)	3Indicators	of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)		hydrology must be present,
Sandy Gleyed Matrix (S4)	-	Redox Depressions (F8)		disturbed or problematic.
-4-1-thus I suce /if procently				
estrictive Layer (ii presend.				
Type:		_		
Type: Depth (inches):			Hydric Soil Pr	resent? Yes <u>X</u> No
Type: Depth (inches):			Hydric Soil Pr	resent? Yes X No
Type: Depth (inches):			Hydric Soil Pr	resent? Yes <u>X</u> No
Type: Depth (inches):			Hydric Soil Pr	resent? Yes X No
Type: Depth (inches):emarks:			Hydric Soil Pr	resent? Yes X No
Type: Depth (inches): emarks:  DROLOGY			Hydric Soil Pr	resent? Yes <u>X</u> No
Type: Depth (inches): emarks:  DROLOGY etland Hydrology Indicators:			Hydric Soil Pr	resent? Yes_X_ No
Type: Depth (inches): emarks:  DROLOGY etland Hydrology Indicators: mary Indicators (minimum of or	ne required; o	:heck all that apply)		resent? Yes X No
Type: Depth (inches): emarks:  DROLOGY etland Hydrology Indicators: mary Indicators (minimum of or	ne required; o	check all that apply) Water-Stained Leaves (B9) (except	Seconda	
Depth (inches): emarks:  DROLOGY  etland Hydrology Indicators: mary Indicators (minimum of or Surface Water (A1)  High Water Table (A2)	ne required; o		<u>Seconda</u> Wate	ary Indicators (2 or more required)
Depth (inches): emarks:  DROLOGY  etland Hydrology Indicators: mary Indicators (minimum of or Surface Water (A1)  High Water Table (A2)	ne required; o	Water-Stained Leaves (B9) (except	<u>Seconda</u> Wate	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2
Depth (inches): emarks:  DROLOGY etland Hydrology Indicators: mary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3)	ne required; o	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<u>Seconda</u> Wate 4 Drai	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B)
Depth (inches): marks:  DROLOGY  etland Hydrology Indicators: mary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3)	ne required; o	Water-Stained Leaves (B9) (except  MLRA 1, 2, 4A, and 4B)  Salt Crust (B11)	<u>Seconda</u> Wate Draii Dry-:	ery Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2)
Depth (inches):	ne required; o	<ul> <li>Water-Stained Leaves (B9) (except</li> <li>MLRA 1, 2, 4A, and 4B)</li> <li>Salt Crust (B11)</li> <li>Aquatic Invertebrates (B13)</li> </ul>	Seconda Wate	ery Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C
Depth (inches): Depth (inches): DROLOGY  Etland Hydrology Indicators: mary Indicators (minimum of or Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	ne required; o	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 Presence of Reduced Iron (C4)	Seconda Wate	ery Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C
Type:	ne required; o	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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6)	Seconda  Wate	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (Camorphic Position (D2) low Aquitard (D3) -Neutral Test (D5)
Depth (inches): Depth (inches): DROLOGY  Etland Hydrology Indicators: Imary Indicators (minimum of or 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)		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 Presence of Reduced Iron (C4)	Seconda  Wate	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C morphic Position (D2)
Depth (inches): Depth (inches): Demarks:  DROLOGY  Detland Hydrology Indicators: mary Indicators (minimum of or 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 Im	nagery (B7)	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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks)	Seconda Wate 4 Drain Satu (C3) Geon Shall FAC Raise	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 1, 2, 2, 3, 3, 4, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,
Depth (inches): Depth (inches): Demarks:  DROLOGY  Etland Hydrology Indicators: Imary Indicators (minimum of or 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 Im Sparsely Vegetated Concave	nagery (B7)	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 Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Stunted or Stressed Plants (D1) (LRR A) Other (Explain in Remarks)	Seconda Wate 4 Drain Satu (C3) Geon Shall FAC Raise	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C morphic Position (D2) low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6) (LRR A)
Type:	nagery (B7) 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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)	Seconda Wate 4 Drain Satu (C3) Geon Shall FAC Raise	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C morphic Position (D2) low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6) (LRR A)
Type:	nagery (B7) Surface (B8) s No	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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)	Seconda Wate 4 Drain Satu (C3) Geon Shall FAC Raise	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2) A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (Comorphic Position (D2) low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6) (LRR A)
Depth (inches): emarks:  DROLOGY etland Hydrology Indicators: imary Indicators (minimum of or 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 Im Sparsely Vegetated Concave Ind Observations: face Water Present?	nagery (B7) Surface (B8) s No	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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)	Seconda Wate 4 Drain Satu (C3) Geon Shall FAC Raise	ary Indicators (2 or more required) er-Stained Leaves (B9) (MLRA 1, 2 A, and 4B) nage Patterns (B10) Season Water Table (C2) ration Visible on Aerial Imagery (C morphic Position (D2) low Aquitard (D3) -Neutral Test (D5) ed Ant Mounds (D6) (LRR A)

Remarks:

## TP#2 ~8'INTO UPLAND AT A-7

Project/Site: PARCEL 727310-	0161	City/County: V	Sampling Date: OY/04/
Applicant/Owner:E心ド(Eレロ			State: WA Sampling Point: TP Z
Investigator(s): ALTMANN		Section Townshir	Range: SEC 30, T26N, RGE W,M.
Landform (hillslope, terrace, etc.): SLOPE	***************************************	Local relief (conc	ive, convex, none): CON CAVE Slope (%):
			Long: Datum:
			NWI classification:
Are climatic / hydrologic conditions on the site typical fo			
Are Vegetation, Soil, or Hydrology			Are "Normal Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology	naturally pro	oblematic?	If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	ap showing	sampling poi	nt locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No X		
	No <u>×</u>	Is the Sam	
Wetland Hydrology Present? Yes	No_X	within a W	etland? Yes NoX
Remarks:			
/EGETATION – Use scientific names of p	lonto		
	Absolute	Dominant Indica	or   Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: $S^{\dagger}R$ )	% Cover	Species? Statu	Number of Deminant Species
1. Acer macrophyllum	<u>60</u>		That Are OBL, FACW, or FAC: (A)
2. Corylus Cornuta	<u> </u>	Y FACI	Total Number of Dominant
3			Species Across All Strata: (B)
4			Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 8 R )	<u> 40</u>	= Total Cover	That Are OBL, FACW, or FAC: 20 (A/B)
1. Oemleria Cerasiformis	60_		Prevalence Index worksheet:
2. RUDUS Spectabilis	10		Total % Course of:
3			OBL species x 1 =
· .			FACW species x2 =
j			FAC species x3 =
-1 -	70	= Total Cover	FACU species x 4 =
Herb Stratum (Plot size: 8 R)			UPL species x 5 =
. Maignthemum dilatatum		Y FAC	
. Paystichum munitum			Prevalence Index = B/A =
-			Hydrophytic Vegetation Indicators:
•			1 - Rapid Test for Hydrophytic Vegetation
•			2 - Dominance Test is >50%
•			3 - Prevalence Index is ≤3.0 <sup>1</sup>
			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
•			data in Remarks or on a separate sheet)
·			_
0			Indicators of hydric soil and wetland hydrology must
1.	<u> </u>	Total Cover	be present, unless disturbed or problematic.
loody Vine Stratum (Plot size:)		· Total Cover	
-			- Hydrophytic
•			Vegetation
		Total Cover	Present? Yes No
			1
6 Bare Ground in Herb Stratum			

SOIL  Profile Description: (Describe to the de	epth needed to document the indicator or confirm	Sampling Point: TP Z
		the absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type <sup>1</sup> Loc <sup>2</sup>	TextureRemarks
0-15" 10YR 3/2 100		Gravely sondy clay loam
0-17 10112 10		Chavely smay cray 1041
	-	
	-	
	-	
-		
	M=Reduced Matrix, CS=Covered or Coated Sand Gra	ains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to al	LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Sandy Redox (S5)	2 cm Muck (A10)
Histic Epipedon (A2)	Stripped Matrix (S6)	Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA 1)	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Depleted Matrix (F3)	Service of the servic
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)	Redox Dark Surface (F6)	<sup>3</sup> Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)	Depleted Dark Surface (F7) Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (if present):	Nedox Depressions (1 5)	unless disturbed of problemate.
Type:		
1 406.		t .
		Hedda Call Decomb? Von No X
Depth (inches):		Hydric Soil Present? Yes No _X
Depth (inches):Remarks:		
Depth (inches):Remarks:	L W, +H NO REDOXIMER?	Hydric Soil Present? Yes No X
Depth (inches):Remarks:	L W, TH NO REDOXIMORP	
Depth (inches):Remarks:	L W, TH NO REDOXIMORP	
Depth (inches):Remarks:	L W, TH NO REDOXIMER?	
Depth (inches):Remarks: CHrom A 2	L W, th NO REDOXIMER?	
Depth (inches):		HIC FEATURES
Depth (inches):	d; check all that apply)	Secondary Indicators (2 or more required)
Depth (inches):	d; check all that apply) Water-Stained Leaves (B9) (except	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2,
Depth (inches):	d; check all that apply) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Depth (inches):	d; check all that apply)  Water-Stained Leaves (B9) (except  MLRA 1, 2, 4A, and 4B)  Salt Crust (B11)	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  Drainage Patterns (B10)
Depth (inches):	d; check all that apply)  Water-Stained Leaves (B9) (except  MLRA 1, 2, 4A, and 4B)  Salt Crust (B11)  Aquatic Invertebrates (B13)	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)  Drainage Patterns (B10)  Dry-Season Water Table (C2)
Depth (inches):	d; check all that apply)  — Water-Stained Leaves (B9) (except  MLRA 1, 2, 4A, and 4B)  — Salt Crust (B11)  — Aquatic Invertebrates (B13)  — Hydrogen Sulfide Odor (C1)	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
Depth (inches):	d; check all that apply)  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	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 (C3) Geomorphic Position (D2)
Depth (inches):	d; check all that apply)  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 Presence of Reduced Iron (C4)	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 (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)
Depth (inches):	d; check all that apply)  — 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  — Presence of Reduced Iron (C4)  — Recent Iron Reduction in Tilled Soils (C6)	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  (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)	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 (C3))  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):	d; check all that apply)  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  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  (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)
Depth (inches):	d; check all that apply)  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  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 (C3) (Geomorphic Position (D2) (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):  Remarks:  CHACWA 2  IYDROLOGY  Wetland Hydrology Indicators:  Primary Indicators (minimum of one require  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 (Bidelication of the control of the contro	d; check all that apply)  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  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 (C3))  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):	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 (C3))  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):	d; check all that apply)  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  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)  (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2  4A, and 4B)  Drainage Pattems (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C8)  (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):  No Depth (inches):  No Depth (inches):  Wetlan	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 (C8  (C3)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)  Frost-Heave Hummocks (D7)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2  4A, and 4B)  Drainage Pattems (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)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):  No Depth (inches):  No Depth (inches):  Wetlan	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2  4A, and 4B)  Drainage Pattems (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)
Depth (inches):	d; check all that apply)  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  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Stunted or Stressed Plants (D1) (LRR A)  Other (Explain in Remarks)  No Depth (inches):  No Depth (inches):  No Depth (inches):  Wetlan	Secondary Indicators (2 or more required)  Water-Stained Leaves (B9) (MLRA 1, 2  4A, and 4B)  Drainage Pattems (B10)  Dry-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C8  (C3) Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)  Raised Ant Mounds (D6) (LRR A)  Frost-Heave Hummocks (D7)

#### ~10' into wetland at AA-21

Project Site:	Parcel: 727310-0161			City/Cour	nty: <u>King County/</u>	Sampling Date:	<u>3-5-19</u>	
Applicant/Owner:	<u>Enfield</u>				State: WA	Sampling Point:	<u>DP #3</u>	
Investigator(s):	John Altmann, Jason Panzera				Section, Township, Rang	ge: <u>S30, T26N, R6E</u>		
Landform (hillslope, te	errace, etc.):		Lo	cal relief (cond	eave, convex, none): <u>concave</u>	Slope	e (%):	
Subregion (LRR):	<u>A</u>	Lat: <u>47.</u>	70428 <u>5</u>		Long: <u>-122.096228</u>	Datum:		
Soil Map Unit Name:	AgC, KpB				NWI clas	sification:		
Are climatic / hydrolog	ic conditions on the site typical for		-	Yes 🛚	No 🔲 (If no, explain i	n Remarks.)		
Are Vegetation,		_	cantly disturb		'Normal Circumstances" present?		⊠ No	∘ □
Are Vegetation ☐,	, Soil □, or Hydrology	☐, natura	ally problemat	ic? (If ne	eeded, explain any answers in Re	marks.)		
SUMMARY OF FIN	IDINGS – Attach site map s	howing sa	mpling poi	nt locations	, transects, important featu	res, etc.		
Hydrophytic Vegetatio	n Present?	Yes 🛭	No □	lo the Com	olod Araa			
Hydric Soil Present?		Yes 🛭	No □	Is the Sam		Yes	⊠ No	• □
Wetland Hydrology Pr	esent?	Yes 🛭	No 🗆					
Remarks: In wetlan	d off of AA-21							
\/====================================								
	se scientific names of plant	Absolute	Dominant	Indicator	Daminana Taat Wadahada			
Tree Stratum (Plot siz	e: <u>10'</u> )	% Cover	Species?	<u>Status</u>	Dominance Test Worksheet:			
1. Alnus rubra		<u>60</u>	<u>yes</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC:	<u>5</u>		(A)
2. <u>Thuja plicata</u>		<u>50</u>	<u>ves</u>	<u>FAC</u>				
3 4					Total Number of Dominant Species Across All Strata:	<u>6</u>		(B)
50% =, 20% =		<u>110</u>	= Total Cov		-			
Sapling/Shrub Stratun		110	- 10tai 00t	, CI	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>83.3</u>		(A/B)
Acer circinatum	<u></u> (	<u>40</u>	<u>ves</u>	FAC	Prevalence Index worksheet:			
Rubus spectabilis		<u>40</u>	<u>yes</u>	FAC	Total % Cover of:	Multipl	y by:	
3. Ruburs armeniacu		<u>10</u>	no no	FAC	OBL species	x1 =		
4.					FACW species	x2 =		
5					FAC species	x3 =		
50% =, 20% =		<u>90</u>	= Total Cov	/er	FACU species	x4 =		
Herb Stratum (Plot siz	ze: <u>10'</u> )				UPL species	x5 =		
1. Polystichum muni	<u>tum</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	Column Totals:	(A)		(B)
2. <u>Blechnum spicant</u>		<u>5</u>	<u>yes</u>	FAC		Index = B/A =		
3					Hydrophytic Vegetation Indic	cators:		
4					☐ 1 – Rapid Test for Hydro	phytic Vegetation		
5					□ 2 - Dominance Test is >5	0%		
6					☐ 3 - Prevalence Index is <	3.0 <sup>1</sup>		
7					4 - Morphological Adapta	itions <sup>1</sup> (Provide suppor	tina	
8					data in Remarks or on	ı a separate sheet)	Ü	
9					☐ 5 - Wetland Non-Vascula	r Plants <sup>1</sup>		
10					☐ Problematic Hydrophytic	Vegetation¹ (Explain)		
11					4			
50% =, 20% =	<u></u>	<u>25</u>	= Total Cov	/er	<sup>1</sup> Indicators of hydric soil and we be present, unless disturbed or			
Woody Vine Stratum	(Plot size:)				, ,	<u>'</u>		
1								
2					Hydrophytic	es 🛛	No	
50% =, 20% =			= Total Cov	/er	Vegetation Your Present?	<b>55</b> 🔼	No	ы
% Bare Ground in He	rb Stratum							
Remarks:								
i								

SOIL Sampling Point: DP #3 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type<sup>1</sup> Loc<sup>2</sup> Remarks 0-16" 10 YR 3/1 100 silty clay <sup>2</sup>Location: PL=Pore Lining, M=Matrix <sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: Sandy Redox (S5) Histosol (A1) 2 cm Muck (A10) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3)  $\boxtimes$ Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup>Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?**  $\boxtimes$ Depth (inches): Yes No Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) High Water Table (A2) (MLRA 1, 2, 4A, and 4B)  $\boxtimes$ Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present?  $\boxtimes$ Yes No Depth (inches):  $\boxtimes$ Water Table Present? Yes No Depth (inches): Saturation Present? Wetland Hydrology Present?  $\boxtimes$ No Yes  $\boxtimes$ No Depth (inches): 2" (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

### ~10' into upland at AA-21

Project Site:	Parcel: 727310-0161				City/Cour	nty: King County/	Sampling Da	ate:	<u>3-5-19</u>		
Applicant/Owner:	<u>Enfield</u>					State: <u>V</u>			DP #4	<u> </u>	
Investigator(s):	John Altmann, Jason Panzera						p, Range: <u>S30, T26</u>				
Landform (hillslope, te	•			Loc	al relief (conc		<u>ncave</u>	-	e (%): <u> </u>		-
Subregion (LRR):	<u>A</u>	Lat: <u>47</u>	<u>7.704285</u>			Long: <u>-122.096228</u>		Datum: _			
Soil Map Unit Name:	AgC, KpB						VI classification:				
	gic conditions on the site typical fo		-		∕es ⊠	•	xplain in Remarks.)	.,	Ξ.		_
Are Vegetation		□, signit	=			Normal Circumstances" p		Yes	M 1	٧o	
Are Vegetation	, Soil □, or Hydrology	□, natur	rally proble	ematic	e? (If ne	eded, explain any answer	's in Remarks.)				
SUMMARY OF FIN	NDINGS – Attach site map s	howing sa	ampling	poin	t locations,	transects, important	features, etc.				
Hydrophytic Vegetatio	on Present?	Yes [	□ No	$\boxtimes$	la tha Camr	alad Araa					
Hydric Soil Present?		Yes [	□ No	$\boxtimes$	Is the Samp within a We			Yes		No	☒
Wetland Hydrology Pr	resent?	Yes [	□ No	$\boxtimes$							
Remarks: In upland	d off of AA-21										
VEGETATION - U	se scientific names of plant					I					
Tree Stratum (Plot siz	ze: <u>10'</u> )	Absolute % Cover	Domin Specie		Indicator <u>Status</u>	Dominance Test Work	sheet:				
1. <u>Alnus rubra</u>		30	yes		FAC	Number of Dominant Sp	pecies	•			<b>(A)</b>
2. <u>Acer macrophyllu</u>	<u>m</u>	<u>20</u>	<u>yes</u>		<u>FACU</u>	That Are OBL, FACW, o	or FAC:	<u>3</u>			(A)
3						Total Number of Domina	ant	6			(B)
4						Species Across All Strat	ta:	<u>6</u>			(D)
50% =, 20% =		<u>50</u>	= Tota	l Cove	er	Percent of Dominant Sp		<u>50</u>			(A/B)
Sapling/Shrub Stratur	<u>m</u> (Plot size: <u>10'</u> )					That Are OBL, FACW, o	or FAC:	<u>50</u>			(700)
1. Acer circinatum		<u>80</u>	<u>yes</u>		<u>FAC</u>	Prevalence Index work	(sheet:				
2. Rubus spectabillis	<u>s</u>	<u>30</u>	<u>yes</u>		FAC	Total % Co	ver of:	Multipl	<u>y by:</u>		
3						OBL species		x1 =		-	
4						FACW species		x2 =		-	
5						FAC species 1	<u>140</u>	x3 =	<u>420</u>		
50% =, 20% =		<u>110</u>	= Tota	l Cove	er	FACU species 8	<u>30</u>	x4 =	<u>320</u>		
Herb Stratum (Plot siz	ze: <u>10'</u> )					UPL species		x5 =		-	
1. Polystichum muni	<u>itum</u>	<u>30</u>	<u>yes</u>		<u>FACU</u>	Column Totals:	<u>220</u> (A)		<u>740</u> (	B)	
2						Pre	evalence Index = B/A	= <u>3.4</u>			
3						Hydrophytic Vegetatio					
4						☐ 1 – Rapid Test for	Hydrophytic Vegeta	tion			
5						☐ 2 - Dominance Te	st is >50%				
6						☐ 3 - Prevalence Ind	lex is <u>&lt;</u> 3.0¹				
7						4 - Morphological	Adaptations <sup>1</sup> (Provid	le suppor	ting		
8						data in Remark	s or on a separate s	heet)			
9						☐ 5 - Wetland Non-V	/ascular Plants <sup>1</sup>				
10						☐ Problematic Hydro	ophytic Vegetation¹ (	Explain)			
11						4					
50% =, 20% =			= Tota	l Cove	er	¹Indicators of hydric soil be present, unless distu		ogy must			
Woody Vine Stratum	(Plot size: 10')										
1. Rubus ursinus		<u>30</u>	<u>yes</u>		<u>FACU</u>						
2						Hydrophytic	Yes 🗆	1	No		$\boxtimes$
50% =, 20% =			= Tota	l Cove	er	Vegetation Present?	res _	J	NO		
% Bare Ground in He	rb Stratum										
Remarks:											

SOIL Sampling Point: DP #4 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Depth Matrix Redox Features (inches) Color (moist) % Color (moist) % Type<sup>1</sup> Loc<sup>2</sup> Remarks gravelly 0-7 10 YR 3/4 100 gravelly <u>8-15</u> 10 YR 4/6 100 <sup>2</sup>Location: PL=Pore Lining, M=Matrix <sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils3: 2 cm Muck (A10) Histosol (A1) Sandy Redox (S5) Histic Epipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) <sup>3</sup>Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wetland hydrology must be present, Sandy Gleyed Matrix (S4) Redox Depressions (F8) unless disturbed or problematic Restrictive Layer (if present): Type: **Hydric Soils Present?**  $\boxtimes$ Depth (inches): Yes No Remarks: **HYDROLOGY** Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) П Surface Water (A1) Water-Stained Leaves (B9) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) High Water Table (A2) (MLRA 1, 2, 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) П Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aguitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Stunted or Stresses Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Wetland Hydrology Present? No  $\boxtimes$ Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: dry

#### ~10' into wetland at AAA-16

Project Site:	Parcel: 727310-0161					City/Cour	ınty:	King	Count	y/	_	Sa	mpling [	Date:	<u>3-1</u>	<u>1-19</u>	
Applicant/Owner:	<u>Enfield</u>									State:	WA	Sa	mpling F	Point:	DP	#5	
Investigator(s):	John Altmann, Jason Panzera							S	ection,	Towns	ship, Ra	nge:	S30, T2	26N, R6E			
Landform (hillslope, te	errace, etc.):				Loca	l relief (conc	cave	, conve	ex, none	e):	concave	<u> </u>		Slop	e (%):		_
Subregion (LRR):	<u>A</u>	Lat: <u>4</u>	7.704	4 <u>285</u>				Long:	<u>-122.0</u>	9622	<u>8</u>			Datum:		-	
Soil Map Unit Name:	AgC, KpB										NWI cla	ssific	ation:				
Are climatic / hydrolog	gic conditions on the site typical for	r this time	of ye	ar?	Ye	es 🛛	₫	No		(If no,	explain	in Re	emarks.)	)			
Are Vegetation ☐,	, Soil □, or Hydrology	□, sigr	nificai	ntly dis	turbed	? Are "	"Noi	mal Ci	rcumsta	ances'	' presen	t?		Yes	$\boxtimes$	No	
Are Vegetation ☐,	, Soil □, or Hydrology	☐, nati	urally	proble	matic?	? (If ne	neede	ed, exp	lain any	/ ansv	vers in R	Rema	rks.)				
SUMMARY OF FIN	IDINGS – Attach site map sl	nowing	sam	pling <sub>l</sub>		locations,	s, tra	ansec	ts, im	oorta	nt feat	ures	, etc.				1
Hydrophytic Vegetatio	n Present?	Yes	$\boxtimes$	No		Is the Samp	nloc	l Aroa									
Hydric Soil Present?		Yes	$\boxtimes$	No		within a We								Yes	$\boxtimes$	No	
Wetland Hydrology Pr	resent?	Yes	$\boxtimes$	No													
Remarks: In wetlan	d off of AAA-16																
VEGETATION - Us	se scientific names of plant																
Tree Stratum (Plot siz	re:)	Absolute % Cover		Domina Species		Indicator <u>Status</u>	D	omina	nce Te	st Wo	rksheet	t:					
1											Species			<u>2</u>			(A)
2							Т	hat Are	e OBL, I	FACW	, or FAC	<b>D</b> :		<u>~</u>			(^)
3									ımber o					<u>2</u>			(B)
4							S	pecies	Across	All St	rata:			=			(5)
50% =, 20% =	<del></del>			= Total	Cover	-					Species			100			(A/B)
Sapling/Shrub Stratun	m (Plot size:)						Т	hat Are	e OBL, I	-ACW	, or FAC	J:					()
1							P	revale			orkshee						
2									To	tal %	Cover of	<u>f:</u>		Multip	ly by:		
3								BL spe				-		x1 =			
4									species			-		x2 =	_	_	
5								AC spe				-		x3 =			
50% =, 20% =			:	= Total	Cover	-			pecies			-		x4 =	_		
Herb Stratum (Plot siz	ze: <u>10'</u> )						U	PL spe	ecies			-		x5 =			
Oenanthe sarmen	<u>itosa</u>	<u>40</u>	2	<u>yes</u>		<u>OBL</u>	С	olumn	Totals:			_ (A)				(	В)
2. Ranunculus reper	<u>18</u>	<u>20</u>	2	<u>yes</u>		<u>FAC</u>				Pr	evalence	e Ind	ex = B/A	.=			
3							Н		-	_	tion Ind						
4								] 1-	– Rapid	Test	for Hydr	ophy	tic Veget	tation			
5								2 -	- Domin	ance	Test is >	>50%					
6								3.	- Preval	ence	Index is	<u>&lt;</u> 3.0	I				
7			•					1 4-						ide suppo	rting		
8							-	_	data in	Rem	arks or c	on a s	separate	sheet)			
9								5 -	- Wetlar	nd Noi	n-Vascu	lar Pl	ants <sup>1</sup>				
10								] Pr	oblema	tic Hy	drophyti	c Ve	getation¹	(Explain)			
11							11	ndicate	ara of hi	drio o	oil and s	wotlo	nd bydra	ology must			
50% =, 20% =		<u>60</u>		= Total	Cover	-							blemati				
Woody Vine Stratum (	(Plot size:)																
1							<b> </b>		hu#! -								
2								ydrop egetat	-		,	Yes	i		No	,	
50% =, 20% =	<del></del>			= Total	Cover	-		resent					,	_			_
% Bare Ground in He	rb Stratum																
Remarks:																	

Color (moint)	0/	Color (m	Redox Fe			Domonico
Color (moist)	<u>%</u>	Color (m	noist) %	Type <sup>1</sup> Loc <sup>2</sup>	Texture silty cla	Remarks
<u>0-16</u> <u>10 YR 3/1</u>	<u>100</u>				loom	<del>*</del>
			<del></del>			<del></del>
<del></del>			<del>-</del>			·
						·
						<u> </u>
						<u> </u>
						<u> </u>
ype: C= Concentration, D=Dep	letion, RM=	Reduced Ma	trix, CS=Covered or C	Coated Sand Grains.	<sup>2</sup> Location: PL=	Pore Lining, M=Matrix
dric Soil Indicators: (Applica	ble to all L	.RRs, unless	otherwise noted.)		Indic	ators for Problematic Hydric Soils³:
Histosol (A1)			Sandy Redox (S5)			2 cm Muck (A10)
Histic Epipedon (A2)			Stripped Matrix (Se	6)		Red Parent Material (TF2)
Black Histic (A3)			Loamy Mucky Mine	eral (F1) (except MLRA	1) 🗆	Very Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)			Loamy Gleyed Mat			Other (Explain in Remarks)
Depleted Below Dark Surfa	ce (A11)		Depleted Matrix (F	•		
Thick Dark Surface (A12)			Redox Dark Surfac		31:	
Sandy Mucky Mineral (S1)			Depleted Dark Sur	• •		cators of hydrophytic vegetation and etland hydrology must be present,
Sandy Gleyed Matrix (S4)			Redox Depression	s (F8)	ur	nless disturbed or problematic.
strictive Layer (if present):						
oe: pth (inches):				Usalaia Cai	ls Present?	Yes ⊠ No
emarks:				7.194.1000.		
<u> </u>				, injunio do		
YDROLOGY etland Hydrology Indicators:				7,94,1000		
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of o	ne required					dary Indicators (2 or more required)
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of o	ne required	l; check all th	Water-Stained Lea	ives (B9)	v	dary Indicators (2 or more required) Water-Stained Leaves (B9)
TOROLOGY etland Hydrology Indicators: mary Indicators (minimum of o Surface Water (A1) High Water Table (A2)	ne required		Water-Stained Lea	ives (B9)		dary Indicators (2 or more required) Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B)
Marks:  MOROLOGY  Intland Hydrology Indicators:  mary Indicators (minimum of o  Surface Water (A1)  High Water Table (A2)  Saturation (A3)	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11)	ives (B9) 2, 4A, and 4B)	V   ()	dary Indicators (2 or more required)  Water-Stained Leaves (B9)  MLRA 1, 2, 4A, and 4B)  Drainage Patterns (B10)
POROLOGY Stland Hydrology Indicators: mary Indicators (minimum of o Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat	ives (B9) <b>2, 4A, and 4B)</b> tes (B13)	V  ) 	dary Indicators (2 or more required) Water-Stained Leaves (B9) MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
/DROLOGY  stland Hydrology Indicators: mary Indicators (minimum of o  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide (	ives (B9) <b>2, 4A, and 4B)</b> tes (B13) Odor (C1)	V   ()   ()   ()   ()   ()   ()   ()	dary 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)
/DROLOGY  etland Hydrology Indicators: mary Indicators (minimum of o Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide ( Oxidized Rhizosph	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) heres along Living Roots	V (()	dary 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)
Properties of the control of the con	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduc	tves (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1)  teres along Living Roots  ced Iron (C4)	V (() () () () () () () () () () () () ()	dary 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)
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of of of the content of the cont	ne required		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduc Recent Iron Reduc	tves (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) heres along Living Roots and the control of the	V (() () () () () () () () () () () () ()	dary Indicators (2 or more required)  Water-Stained Leaves (B9)  MLRA 1, 2, 4A, and 4B)  Orainage Patterns (B10)  Ory-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of of of surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) I ron Deposits (B5) Surface Soil Cracks (B6)			Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) heres along Living Roots ced Iron (C4)  stion in Tilled Soils (C6) his Plants (D1) (LRR A)	C3)	dary 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)
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of of of 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 Aeria	ıl Imagery (		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduc Recent Iron Reduc	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) heres along Living Roots ced Iron (C4)  stion in Tilled Soils (C6) his Plants (D1) (LRR A)	C3)	dary Indicators (2 or more required)  Water-Stained Leaves (B9)  MLRA 1, 2, 4A, and 4B)  Orainage Patterns (B10)  Ory-Season Water Table (C2)  Saturation Visible on Aerial Imagery (C9)  Geomorphic Position (D2)  Shallow Aquitard (D3)  FAC-Neutral Test (D5)
POROLOGY  etland Hydrology Indicators: imary Indicators (minimum of o  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 Aeria  Sparsely Vegetated Conca	ıl Imagery (		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) heres along Living Roots ced Iron (C4)  stion in Tilled Soils (C6) his Plants (D1) (LRR A)	C3)	dary 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)
PROLOGY Estland Hydrology Indicators: mary Indicators (minimum of or 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 Aeria Sparsely Vegetated Concaeld Observations:	ıl Imagery ( ive Surface		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebral Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduct Recent Iron Reduct Stunted or Stresse	tives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1)  teres along Living Roots  ced Iron (C4)  tion in Tilled Soils (C6)  as Plants (D1) (LRR A)  Remarks)	C3)	dary 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)
POROLOGY etland Hydrology Indicators: mary Indicators (minimum of or 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 Aeria Sparsely Vegetated Concaeled Observations: rface Water Present?	ıl Imagery ( ive Surface	B7) (B8)	Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse Other (Explain in R	tves (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) teres along Living Roots ted Iron (C4) tion in Tilled Soils (C6) ts Plants (D1) (LRR A)  Remarks)  Cemarks)	C3)	dary 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)
POROLOGY  etland Hydrology Indicators: imary Indicators (minimum of of of 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 Sparsely Vegetated Concaeld Observations: urface Water Present?	ıl Imagery ( ive Surface		Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduc Recent Iron Reduc Stunted or Stresse Other (Explain in R	Ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1) Iteres along Living Roots Cod Iron (C4) Ition in Tilled Soils (C6) Is Plants (D1) (LRR A)  Remarks)  Code in the c	(C3)	dary 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)
POROLOGY etland Hydrology Indicators: mary Indicators (minimum of of 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 Aeria Sparsely Vegetated Concaeled Observations: Inface Water Present? Vieter Table Present?	ıl Imagery ( ıve Surface es ⊠ es □	B7) (B8)  No	Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduce Recent Iron Reduce Stunted or Stresse Other (Explain in Reduce) Depth (inches) Depth (inches)	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1)  ieres along Living Roots  ced Iron (C4)  ition in Tilled Soils (C6)  is Plants (D1) (LRR A)  Remarks)  Cemarks  Cemarks  Cemarks	V (() () () () () () () () () () () () ()	dary 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)
PROLOGY Estland Hydrology Indicators: mary Indicators (minimum of or 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 Aeria Sparsely Vegetated Concasted Observations: rface Water Present? stater Table Present? Cludes capillary fringe)	ıl Imagery ( ıve Surface es ⊠ es □	B7) (B8)  No	Water-Stained Lea (except MLRA 1, 2 Salt Crust (B11) Aquatic Invertebrat Hydrogen Sulfide ( Oxidized Rhizosph Presence of Reduce Recent Iron Reduce Stunted or Stresse Other (Explain in Reduce) Depth (inches) Depth (inches)	ives (B9)  2, 4A, and 4B)  tes (B13)  Odor (C1)  ieres along Living Roots  ced Iron (C4)  ition in Tilled Soils (C6)  is Plants (D1) (LRR A)  Remarks)  Cemarks  Cemarks  Cemarks	V (() () () () () () () () () () () () ()	dary 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)

### ~10' into upland at AAA-16

Project Site:	Parcel: 727310-0161					City/Cour	nty: King County/	s	ampling Dat	e:	<u>3-1</u>	<u>1-19</u>	
Applicant/Owner:	<u>Enfield</u>						State	e: <u>WA</u> S	ampling Poi	nt:	DP	<u>#6</u>	
Investigator(s):	John Altmann, Jason Panzera						Section, Towr	nship, Range	: <u>S30, T261</u>	N, R6E			
Landform (hillslope, te	errace, etc.):				Loca	al relief (conc	ave, convex, none):	concave		Slope	e (%):		_
Subregion (LRR):	<u>A</u>	Lat:	47.704	285			Long: <u>-122.09622</u>	28	Da	atum: _			
Soil Map Unit Name:	AgC, KpB							NWI classif	ication:				
Are climatic / hydrolog	gic conditions on the site typical fo	r this time	of yea	ar?	Y	es 🛛	No 🗌 (If no	o, explain in f	Remarks.)				
Are Vegetation	, Soil □, or Hydrology	□, sig	nifican	ntly dist	urbed	l? Are "	Normal Circumstances	s" present?		Yes	$\boxtimes$	No	
Are Vegetation	, Soil □, or Hydrology	□, na	turally	probler	matic′	? (If ne	eded, explain any ans	wers in Rem	arks.)				
OLIMAN A DV OF FIN	IDINIOO Attack site was a					4!	4		4-				
	NDINGS – Attach site map s					locations,	transects, importa	ant feature	s, etc.				
Hydrophytic Vegetatio	on Present?	Yes				Is the Samp	oled Area			<b>V</b>	_		57
Hydric Soil Present?		Yes				within a We				Yes		No	
Wetland Hydrology Pr	resent?	Yes		No									
Remarks: In uplant	d off of AAA-16												
VEGETATION - III	se scientific names of plant	·e											
Tree Stratum (Plot siz		Absolut	e D	Domina	nt	Indicator	Dominance Test W	orkshoot:					
	.e. <u>10</u> )	% Cove		Species	<u>s?</u>	Status 54.044	Dominance rest W	orksneet.					
1. <u>Ilex aquifolium</u>	1-	<u>80</u>	_	<u>/es</u>		<u>FACU</u>	Number of Dominan That Are OBL, FAC			<u>1</u>			(A)
2. Prunus emarginat	<del></del>	<u>10</u>	_	<u>10</u>		<u>FACU</u>							
3. <u>Pseudotsuga mer</u>	<u>1ZIESII</u>	<u>5</u>	<u>n</u>	<u>10</u>		<u>FACU</u>	Total Number of Dor Species Across All S			<u>4</u>			(B)
4		0.5	-		0		•						
50% =, 20% =		<u>95</u>	-	= Total	Cove	ſ	Percent of Dominant That Are OBL, FACV			<u>25</u>			(A/B)
Sapling/Shrub Stratur	<u>II</u> (Flot Size. <u>10</u> )	50				FACIL							
1. Corylus cornuta		<u>50</u>	-	<u>res</u>		FACU	Prevalence Index w			Multim			
2. Rubus spectabilis		<u>20</u>	_	<u>res</u>		FAC		Cover of:		Multipl	y by:		
3. <u>Ilex aquifolium</u>		<u>15</u>	<u> 11</u>	<u>10</u>		<u>FACU</u>	OBL species			x1 = x2 =		_	
4 5			-	_			FACW species FAC species			x2 - x3 =		_	
50% =, 20% =		0.5	_	Total	Cauca		-			x4 =	-	_	
·		<u>85</u>		· TOTAL	Cove		FACU species					_	
Herb Stratum (Plot siz	<del>_</del>					<b>540</b> 11	UPL species			x5 =			
1. Polystichum muni	<u>tum</u>	<u>30</u>	<u> </u>	<u>/es</u>		<u>FACU</u>	Column Totals:	(A	•			(E	3)
2			-	—				revalence In	•				
3			-	—			Hydrophytic Vegeta						
4			-				☐ 1 – Rapid Test			on			
5			-				2 - Dominance	e Test is >50°	<b>%</b>				
6			-				☐ 3 - Prevalence	Index is <3.	D <sup>1</sup>				
7			-				4 - Morphologi				ting		
8			-				data in Ren	narks or on a	·	eet)			
9		-	-				5 - Wetland No	on-Vascular F	Plants <sup>1</sup>				
10			-				☐ Problematic H	ydrophytic Ve	egetation¹ (E	xplain)			
11			-				<sup>1</sup> Indicators of hydric	soil and wat	and hydrolog	w muet			
50% =, 20% =			=	= Total	Cove	r	be present, unless d			y musi			
Woody Vine Stratum	(Plot size:)												
1			-										
2			-				Hydrophytic Vegetation	Yes			No		$\boxtimes$
50% =, 20% =			=	= Total	Cove	r	Present?		_				
% Bare Ground in He	rb Stratum												
Remarks:													

Depth Matrix		Redox Features					
inches) Color (moist) %	Color (mo	ist) % Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rem	arks	
<u>0-16</u> <u>10 YR 4/3</u>				loam			
				-	<del>-</del> —		
					<del>-</del> ——		
					<del>-</del>		
		<del></del>			<del></del>		
					<del>-</del>		
<del>_</del>					<del>-</del> —		
<del></del>		<del></del> . <del></del>			<del></del>		
ype: C= Concentration, D=Depletion, RM=R			nd Grains. <sup>2</sup> Loo		=Pore Lining, M=Matrix		
/dric Soil Indicators: (Applicable to all LR	_	•			cators for Problematic Hydr	ic Soils <sup>3</sup> :	
Histosol (A1)		Sandy Redox (S5)			2 cm Muck (A10)		
Histic Epipedon (A2) Black Histic (A3)		Stripped Matrix (S6)	overet MLDA 4)		Red Parent Material (TF2)	/TE40\	
		Loamy Mucky Mineral (F1) (	except MLRA 1)		Very Shallow Dark Surface		
, ,		Loamy Gleyed Matrix (F2)			Other (Explain in Remarks	)	
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)		Depleted Matrix (F3) Redox Dark Surface (F6)					
Thick Dark Surface (A12) Sandy Mucky Mineral (S1)		Depleted Dark Surface (F7)		<sup>3</sup> Indi	cators of hydrophytic vegetati	on and	
Sandy Gleyed Matrix (S4)		Redox Depressions (F8)		W	etland hydrology must be pre	sent,	
estrictive Layer (if present):		redox Depressions (i o)	1	u	nless disturbed or problemation	D	
pe:							
epth (inches):			Hydric Soils Pr	osont?	Yes □	] No	$\boxtimes$
marks:							
YDROLOGY							
YDROLOGY etland Hydrology Indicators:		t analy)		Second	adam la diactora (O composo so	wired)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; o				_	ndary Indicators (2 or more rec	quired)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of the surface Water (A1)	check all that	Water-Stained Leaves (B9)	LAD)		Water-Stained Leaves (B9)	quired)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of Surface Water (A1) High Water Table (A2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and	1 4B)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	quired)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of the surface Water (A1)  High Water Table (A2)  Saturation (A3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11)	l 4B)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)	•	
YDROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one required; of Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13)	14B)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)		
POROLOGY  Estland Hydrology Indicators:  mary Indicators (minimum of one required; of Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)			Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im		
PDROLOGY  Setland Hydrology Indicators:  mary Indicators (minimum of one required; of Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along	g Living Roots (C3)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im Geomorphic Position (D2)		
POROLOGY etland Hydrology Indicators: Imary Indicators (minimum of one required; of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C	g Living Roots (C3)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im Geomorphic Position (D2) Shallow Aquitard (D3)		
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of 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)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (CRecent Iron Reduction in Tilling (CRECENT Iron Reduction in Tilling)	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	nagery (C9)	
YDROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one required; of the state o		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C Recent Iron Reduction in Till Stunted or Stresses Plants (I	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
PDROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one required; of 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 (B5)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (CRecent Iron Reduction in Tilling (CRECENT Iron Reduction in Tilling)	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)	nagery (C9)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of 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 (I		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C Recent Iron Reduction in Till Stunted or Stresses Plants (I	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
YDROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one required; of 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 (B1)   Sparsely Vegetated Concave Surface (Beld Observations:		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C Recent Iron Reduction in Till Stunted or Stresses Plants (I	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of 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)  eld Observations:  urface Water Present? Yes		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C) Recent Iron Reduction in Till Stunted or Stresses Plants (I) Other (Explain in Remarks)	g Living Roots (C3) C4) ed Soils (C6)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	
YDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of a 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 (B1)  eld Observations:  urface Water Present? Yes	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Presence of Reduced Iron (C Recent Iron Reduction in Till Stunted or Stresses Plants (I Other (Explain in Remarks)	g Living Roots (C3) C4) ed Soils (C6) D1) (LRR A)		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial In Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI	nagery (C9)	0
PYDROLOGY etland Hydrology Indicators: imary Indicators (minimum of one required; of 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 (Indicated Water Present?  Inface Water Present?  Attention Present?  Special Surface Concave Con	7) B8)  No 🗵 No 🗵	Water-Stained Leaves (B9)  (except MLRA 1, 2, 4A, and Salt Crust (B11)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Presence of Reduced Iron (CRecent Iron Reduction in Tillice Stunted or Stresses Plants (IO)  Other (Explain in Remarks)  Depth (inches):  Depth (inches):	g Living Roots (C3) (C4) ed Soils (C6) (C1) (LRR A)  Wetl		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI Frost-Heave Hummocks (D7)	nagery (C9)	0
PYDROLOGY  etland Hydrology Indicators: imary Indicators (minimum of one required; of 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 (Interpretation Present?  Seturation Present?  Seturation Present?	7) B8)  No 🗵 No 🗵	Water-Stained Leaves (B9)  (except MLRA 1, 2, 4A, and Salt Crust (B11)  Aquatic Invertebrates (B13)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres along Presence of Reduced Iron (CRecent Iron Reduction in Tillice Stunted or Stresses Plants (IO)  Other (Explain in Remarks)  Depth (inches):  Depth (inches):	g Living Roots (C3) (C4) ed Soils (C6) (C1) (LRR A)  Wetl		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Im Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRI Frost-Heave Hummocks (D7)	nagery (C9)	0

# ATTACHMENT B WETLAND RATING

#### WETLAND RATING FORM - WESTERN WASHINGTON

Version 2 - Updated July 2006 to increase accuracy and reproducibility among users Updated Oct 2008 with the new WDFW definitions for priority habitats

Name of wetland (if known): PARCEL 727310-0161 Date of site visit: 64/04/18
Rated by ALTMANN Trained by Ecology? Yes × No Date of training 03/08 +
SEC: <u>30</u> TWNSHP: <u>26</u> NO <u>X</u> RNGE: <u>6</u> E Is S/T/R in Appendix D? Yes No <u>X</u>
Map of wetland unit: Figure Estimated size
SUMMARY OF RATING
Category based on FUNCTIONS provided by wetland
I II_X III IV
Category I = Score >=70 Category II = Score 51-69 Category III = Score 30-50 Category IV = Score < 30  Score for Water Quality Functions Score for Hydrologic Functions Score for Habitat Functions TOTAL score for Functions
Category based on SPECIAL CHARACTERISTICS of wetland
I II Does not Apply_X_
Final Category (choose the "highest" category from above)
Summary of basic information about the wetland unit
Wetland Unit has Special Wetland HGM Class Characteristics used for Rating

Summary of basic information	tion	about the wetland unit	
Wetland Unit has Special Characteristics		Wetland HGM Class used for Rating	
Estuarine		Depressional	×
Natural Heritage Wetland		Riverine	×
Bog		Lake-fringe	
Mature Forest		Slope	X
Old Growth Forest		Flats	
Coastal Lagoon		Freshwater Tidal	
Interdunal			
None of the above	×	Check if unit has multiple HGM classes present	Х

D	Depressional and Flats Wetlands WATER QUALITY FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score
	improve water quality	per box)
D	D 1. Does the wetland unit have the <u>potential</u> to improve water quality?	(see p.38)
	D 1.1 Characteristics of surface water flows out of the wetland:	Figure
_	Unit is a depression with no surface water leaving it (no outlet) points = 3	
$\mid D \mid$	Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2	
	Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and	<b>A</b>
	no obvious natural outlet and/or outlet is a man-made ditch points = 1	
	(If ditch is not permanently flowing treat unit as "intermittently flowing")	
	Provide photo or drawing	
	S 1.2 The soil 2 inches below the surface (or duff layer) is clay or organic <i>(use NRCS</i>	
_	definitions)	1 4
$\mid D \mid$	YES points =4	4
	NO points = $\overline{0}$	1
	D 1.3 Characteristics of persistent vegetation (emergent, shrub, and/or forest Cowardin class)	Figure
	Wetland has persistent, ungrazed, vegetation $> = 95\%$ of area points $= 5$	
$\mid \mathbf{D} \mid$	Wetland has persistent, ungrazed, vegetation $> = 1/2$ of area points $= 3$	e-
	Wetland has persistent, ungrazed vegetation $> = 1/10$ of area points $= 1$	3
	Wetland has persistent, ungrazed vegetation $<1/10$ of area points $=0$	
	Map of Cowardin vegetation classes	
	D1.4 Characteristics of seasonal ponding or inundation.	Figure
$\mid D \mid$	This is the area of the wetland unit that is ponded for at least 2 months, but dries out sometime during the year. Do not count the area that is permanently ponded. Estimate	
	area as the average condition 5 out of $10$ yrs.	
	Area seasonally ponded is $> \frac{1}{2}$ total area of wetland points $\neq 4$	1 1
	Area seasonally ponded is $> \frac{1}{4}$ total area of wetland points = 2 ?	1
	Area seasonally ponded is $< \frac{1}{4}$ total area of wetland points = 0	1
	Map of Hydroperiods	
D	Total for D 1 Add the points in the boxes above	14
$\overline{\mathbf{D}}$	D 2. Does the wetland unit have the opportunity to improve water quality?	(see p. 44)
	Answer YES if you know or believe there are pollutants in groundwater or surface water	( 1 /
	coming into the wetland that would otherwise reduce water quality in streams, lakes or	
	groundwater downgradient from the wetland. Note which of the following conditions	
	provide the sources of pollutants. A unit may have pollutants coming from several	
	sources, but any single source would qualify as opportunity.	
	— Grazing in the wetland or within 150 ft	
	Untreated stormwater discharges to wetland	
	— Tilled fields or orchards within 150 ft of wetland	
	<ul> <li>A stream or culvert discharges into wetland that drains developed areas, residential areas, farmed fields, roads, or clear-cut logging</li> </ul>	
	Residential, urban areas, golf courses are within 150 ft of wetland	multiplier
	- Wetland is fed by groundwater high in phosphorus or nitrogen	munipher
	— Other	2
	YES multiplier is 2 NO multiplier is 1	
$\mathbf{D}$	TOTAL - Water Quality Functions Multiply the score from D1 by D2	
	Add score to table on p. 1	28
Ļ	Aud score to tubie on p. 1	-

D	Depressional and Flats Wetlands HYDROLOGIC FUNCTIONS - Indicators that the wetland unit functions to	Points (only 1 score
	reduce flooding and stream degradation	per box)
	D 3. Does the wetland unit have the <u>potential</u> to reduce flooding and erosion?	(see p.46)
D	D 3.1 Characteristics of surface water flows out of the wetland unit  Unit is a depression with no surface water leaving it (no outlet)  Unit has an intermittently flowing, OR highly constricted permanently flowing outlet points = 2  Unit is a "flat" depression (Q. 7 on key), or in the Flats class, with permanent surface outflow and no obvious natural outlet and/or outlet is a man-made ditch  [If ditch is not permanently flowing treat unit as "intermittently flowing"]  Unit has an unconstricted, or slightly constricted, surface outlet (permanently flowing) points (1)	Ó
D	D 3.2 Depth of storage during wet periods  Estimate the height of ponding above the bottom of the outlet. For units with no outlet measure from the surface of permanent water or deepest part (if dry).  Marks of ponding are 3 ft or more above the surface or bottom of outlet points = 7  The wetland is a "headwater" wetland" points = 5  Marks of ponding between 2 ft to < 3 ft from surface or bottom of outlet points = 5	
	Marks are at least 0.5 ft to < 2 ft from surface or bottom of outlet points = 3 Unit is flat (yes to Q. 2 or Q. 7 on key) but has small depressions on the surface that trap water points = 1 Marks of ponding less than 0.5 ft points	0
D	D 3.3 Contribution of wetland unit to storage in the watershed  Estimate the ratio of the area of upstream basin contributing surface water to the wetland to the area of the wetland unit itself.  The area of the basin is less than 10 times the area of unit  The area of the basin is 10 to 100 times the area of the unit  The area of the basin is more than 100 times the area of the unit  points = 0	5
$ _{\mathbf{D}} $	Entire unit is in the FLATS class points = 5 <b>Total for D 3</b> Add the points in the boxes above	
<u>D</u>	1	5
D	Answer YES if the unit is in a location in the watershed where the flood storage, or reduction in water velocity, it provides helps protect downstream property and aquatic resources from flooding or excessive and/or erosive flows. Answer NO if the water coming into the wetland is controlled by a structure such as flood gate, tide gate, flap valve, reservoir etc. OR you estimate that more than 90% of the water in the wetland is from groundwater in areas where damaging groundwater flooding does not occur.  Note which of the following indicators of opportunity apply.  — Wetland is in a headwater of a river or stream that has flooding problems  Wetland drains to a river or stream that has flooding problems  — Wetland has no outlet and impounds surface runoff water that might otherwise	(see p. 49)
	flow into a river or stream that has flooding problems  — Other	multiplier
	YES multiplier is 2 NO multiplier is 1	
D	TOTAL - Hydrologic Functions Multiply the score from D 3 by D 4  Add score to table on p. 1	10

These questions apply to wetlands of all HG. HABITAT FUNCTIONS - Indicators that unit function		habitat	Points (only 1 score per box)
H 1. Does the wetland unit have the potential to pr	rovide habitat for many	species?	
H 1.1 Vegetation structure (see p. 72)  Check the types of vegetation classes present (as define class is ¼ acre or more than 10% of the area if unit —  Aquatic bed  Emergent plants	d by Cowardin)- Size thresi		Figure
Scrub/shrub (areas where shrubs have >30%  Forested (areas where trees have >30% cove  If the unit has a forested class check if:  The forested class has 3 out of 5 strata (cano moss/ground-cover) that each cover 20%  Add the number of vegetation structures that qualify. If	opy, sub-canopy, shrubs, he within the forested polygo fyou have:	n	2
Map of Cowardin vegetation classes	4 structures or more 3 structures 2 structures 1 structure	points = 4 points = 2 points = 1 points = 0	
H 1.2. Hydroperiods (see p. 73)  Check the types of water regimes (hydroperiods) pregime has to cover more than 10% of the wetland of descriptions of hydroperiods)  Permanently flooded or inundated  Seasonally flooded or inundated  Occasionally flooded or inundated  Saturated only  Permanently flowing stream or river in, or ad Seasonally flowing stream in, or adjacent to,  Lake-fringe wetland = 2 points  Freshwater tidal wetland = 2 points	4 or more types presen 3 types present 2 types present 1 type present jacent to, the wetland	for  t points = 3 points = 2 point = 1 points = 0	Figure
H 1.3. Richness of Plant Species (see p. 75)  Count the number of plant species in the wetland the of the same species can be combined to meet the site. You do not have to name the species.  Do not include Eurasian Milfoil, reed canarygy. If you counted:  List species below if you want to:	nat cover at least 10 ft². (di ze threshold)	fferent patches	2

H 1.4. Interspersion of habitats (see p. 76)  Decide from the diagrams below whether interspersion between Cowardin vegetation classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, medium, low, or none.	Figure
None = 0 points Low = 1 point Moderate 2 points	
	2
[riparian braided channels]  High = 3 points  NOTE: If you have four or more classes or three vegetation classes and open water the rating is always "high". Use map of Cowardin vegetation classes	
H 1.5. Special Habitat Features: (see p. 77)  Check the habitat features that are present in the wetland. The number of checks is the number of points you put into the next column.  Large, downed, woody debris within the wetland (>4in. diameter and 6 ft long).	
Standing snags (diameter at the bottom > 4 inches) in the wetland  Undercut banks are present for at least 6.6 ft (2m) and/or overhanging vegetation extends at least 3.3 ft (1m) over a stream (or ditch) in, or contiguous with the unit, for at least 33 ft (10m)  Stable steep banks of fine material that might be used by beaver or muskrat for denning (>30 degree slope) OR signs of recent beaver activity are present (cut shrubs or trees that have not yet turned grey/brown)  At least ¼ acre of thin-stemmed persistent vegetation or woody branches are present in areas that are permanently or seasonally inundated. (structures for egg-laying by amphibians)  Invasive plants cover less than 25% of the wetland area in each stratum of plants  NOTE: The 20% stated in early printings of the manual on page 78 is an error.	3
H 1. TOTAL Score - potential for providing habitat  Add the scores from H1.1, H1.2, H1.3, H1.4, H1.5	<u> </u>

#### **Comments**

I 2. Does the wetland unit have the opportunity to provide habitat for many species?	
H 2.1 Buffers (see p. 80)	Figure
Choose the description that best represents condition of buffer of wetland unit. The highest scoring criterion that applies to the wetland is to be used in the rating. See text for definition of 'undisturbed.''  — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% of circumference. No structures are within the undisturbed part of buffer. (relatively undisturbed also means no-grazing, no landscaping, no daily human use)  Points = 5  — 100 m (330 ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 50% circumference.  Points = 4  — 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water >95% circumference.  Points = 4  — 100 m (330ft) of relatively undisturbed vegetated areas, rocky areas, or open water > 25%	rigure
circumference, . Points = 3	
— 50 m (170ft) of relatively undisturbed vegetated areas, rocky areas, or open water for >	
50% circumference. Points = 3	3.6
If buffer does not meet any of the criteria above	
<ul> <li>No paved areas (except paved trails) or buildings within 25 m (80ft) of wetland &gt; 95% circumference. Light to moderate grazing, or lawns are OK.</li> <li>Points = 2</li> <li>No paved areas or buildings within 50m of wetland for &gt;50% circumference. Light to moderate grazing, or lawns are OK.</li> <li>Points = 2</li> <li>Heavy grazing in buffer.</li> <li>Vegetated buffers are &lt;2m wide (6.6ft) for more than 95% of the circumference (e.g. tilled fields, paving, basalt bedrock extend to edge of wetland</li> <li>Buffer does not meet any of the criteria above.</li> <li>Points = 1</li> <li>Points = 0</li> <li>Points = 1</li> <li>Aerial photo showing buffers</li> </ul>	
H 2.2 Corridors and Connections (see p. 81)  H 2.2.1 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 150 ft wide, has at least 30% cover of shrubs, forest or native undisturbed prairie, that connects to estuaries, other wetlands or undisturbed uplands that are at least 250 acres in size? (dams in riparian corridors, heavily used gravel roads, paved roads, are considered breaks in the corridor.  YES = 4 points (go to H 2.3)  H 2.2.2 Is the wetland part of a relatively undisturbed and unbroken vegetated corridor (either riparian or upland) that is at least 50ft wide, has at least 30% cover of shrubs or forest, and connects to estuaries, other wetlands or undisturbed uplands that are at least 25 acres in size? OR a Lake-fringe wetland, if it does not have an undisturbed corridor as in the question above?  YES = 2 points (go to H 2.3)  H 2.2.3 Is the wetland:  within 5 mi (8km) of a brackish or salt water estuary OR within 3 mi of a large field or pasture (>40 acres) OR  within 1 mi of a lake greater than 20 acres?  YES = 1 point  NO = 0 points	

Total for page 2

H 2.3 Near or adjacent to other priority habitats listed by WDFW (see new and complete	
descriptions of WDFW priority habitats, and the counties in which they can be found, in	
the PHS report http://wdfw.wa.gov/hab/phslist.htm)	
Which of the following priority habitats are within 330ft (100m) of the wetland unit? NOTE: the	
connections do not have to be relatively undisturbed.	
Aspen Stands: Pure or mixed stands of aspen greater than 0.4 ha (1 acre).	
Biodiversity Areas and Corridors: Areas of habitat that are relatively important to various	
species of native fish and wildlife (full descriptions in WDFW PHS report p. 152).	
Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.	
Old-growth/Mature forests: (Old-growth west of Cascade crest) Stands of at least 2 tree	
species, forming a multi-layered canopy with occasional small openings; with at least 20	
trees/ha (8 trees/acre) > 81 cm (32 in) dbh or > 200 years of age. (Mature forests) Stands	
with average diameters exceeding 53 cm (21 in) dbh; crown cover may be less that 100%;	
crown cover may be less that 100%; decay, decadence, numbers of snags, and quantity of	
large downed material is generally less than that found in old-growth; 80 - 200 years old	
west of the Cascade crest.	
Oregon white Oak: Woodlands Stands of pure oak or oak/conifer associations where	
canopy coverage of the oak component is important (full descriptions in WDFW PHS	
report p. 158).	
<b>Riparian</b> : The area adjacent to aquatic systems with flowing water that contains elements of	
both aquatic and terrestrial ecosystems which mutually influence each other.	
Westside Prairies: Herbaceous, non-forested plant communities that can either take the	
form of a dry prairie or a wet prairie (full descriptions in WDFW PHS report p. 161).	
Instream: The combination of physical, biological, and chemical processes and conditions	
that interact to provide functional life history requirements for instream fish and wildlife	
resources.	
Nearshore: Relatively undisturbed nearshore habitats. These include Coastal Nearshore,	
Open Coast Nearshore, and Puget Sound Nearshore. (full descriptions of habitats and the	
definition of relatively undisturbed are in WDFW report: pp. 167-169 and glossary in	
Appendix $A$ ).	11
Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under	4
the earth in soils, rock, ice, or other geological formations and is large enough to contain a	,
human.	
Cliffs: Greater than 7.6 m (25 ft) high and occurring below 5000 ft.	
<b>Talus:</b> Homogenous areas of rock rubble ranging in average size 0.15 - 2.0 m (0.5 - 6.5 ft),	
composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine	
tailings. May be associated with cliffs.	
decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a	
diameter at breast height of $>$ 51 cm (20 in) in western Washington and are $>$ 2 m (6.5 ft) in	
height. Priority logs are $> 30$ cm (12 in) in diameter at the largest end, and $> 6$ m (20 ft)	
long.	
If wetland has 3 or more priority habitats = 4 points	
If wetland has 2 priority habitats = 3 points	ş.
If wetland has 1 priority habitat = 1 point No habitats = 0 points	
Note: All vegetated wetlands are by definition a priority habitat but are not included in this	
list. Nearby wetlands are addressed in question H 2.4)	

H 2.4 Wetland Landscape (choose the one description of the landscape around the wetland that best fits) (see p. 84)  There are at least 3 other wetlands within ½ mile, and the connections between them are relatively undisturbed (light grazing between wetlands OK, as is lake shore with some boating, but connections should NOT be bisected by paved roads, fill, fields, or other development.  The wetland is Lake-fringe on a lake with little disturbance and there are 3 other lake-fringe wetlands within ½ mile  There are at least 3 other wetlands within ½ mile, BUT the connections between them are disturbed  The wetland is Lake-fringe on a lake with disturbance and there are 3 other lake-fringe wetland within ½ mile  There is at least 1 wetland within ½ mile.  There are no wetlands within ½ mile.  There are no wetlands within ½ mile.	3
H 2. TOTAL Score - opportunity for providing habitat  Add the scores from H2.1,H2.2, H2.3, H2.4	9
TOTAL for H 1 from page 14	N N
<b>Total Score for Habitat Functions</b> – add the points for H 1, H 2 and record the result on p. 1	20