

Critical Areas Assessment Corps Reference No. NWS-2019-745 April 6, 2020



Berwick Creek Flood Reduction and Restoration City of Chehalis, Washington

> Prepared for Port of Chehalis 321 Maurin Road Chehalis, Washington 98532 (360) 748-9365

Prepared by Ecological Land Services, Inc. 1157 3rd Avenue, Suite 220A • Longview, WA 98632 (360) 578-1371 • Project Number 362.35

Signatures

The information in this report was prepared under the supervision and direction of the undersigned:

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Introduction

Ecological Land Services, Inc. (ELS) has completed this critical areas assessment for a wetland and a fish and wildlife habitat area on behalf of the applicant, the Port of Chehalis, for the Berwick Creek Flood Reduction and Restoration project. The Port is proposing to restore approximately 1,000 linear feet of Berwick Creek to:

- Improve flood storage along a channelized section of Berwick Creek;
- Improve stream bank stability and reduce erosion;
- Slow flow velocity during high water events;
- Improve instream habitat;
- Enhance an existing riverine wetland to achieve greater plant species diversity and structure;
- Improve habitat complexity within the site; and
- Provide stream shading and large woody material recruitment in the long-term.

Berwick Creek is in the Upper Chehalis watershed (WRIA 23) and has been historically impacted by agricultural, industrial, commercial, and residential land uses for decades. This project is a part of a larger, basin-wide effort to improve stream habitat and decrease flooding in the Chehalis River basin. The project is funded by the Chehalis Basin Flood Authority and is administered by the Washington State Recreation and Conservation Office (RCO Project 18-2614P).

The project area, north of Bishop Road in the City of Chehalis, Washington, is comprised of Lewis County tax parcels 017775001000, 017775002000, 017887002000, 017888002001, 017889002003, & 017889002002, within portions of Sections 10 and 15, Township 13 North, Range 2 West of the Willamette Meridian (Figure 1). This report describes the wetland, stream, and their buffers within the project area according to the applicable sections of the City of Chehalis Municipal Code (*CMC*) *Chapter 17.23, Wetlands* and *Chapter 17.25, Fish and Wildlife Habitat Areas* (2009).

Site Description

The parcels within the project area that border Berwick Creek are owned by the Port of Chehalis and Community Partners (Chehalis Industrial Commission) and two private landowners. The area is with the Urban Growth Area of the City of Chehalis.

The approximately 2.8-acre project area and its surroundings are low lying lands in the Chehalis River Basin and flood extensively during heavy rain events. The topography of the project area has a slight rise in elevation moving upstream from about 244 to 246 feet above sea level. The project area is currently undeveloped and contains barbed-wire fencing along the stream and a wet field (Wetland A), which has been used for hay production. A 14-inch PVC culvert is at the

southeast corner of the project area, along a west flowing ditch that is a tributary to Berwick Creek (Ditch A). The culvert spans an old road crossing that provides access to the wetland. Other than the gravel road, culvert, and fencing, the project area lacks structures.

The adjacent properties have residential and industrial uses. The project area is bordered to the north by an undeveloped, industrially owned field and a privately owned single-family residence; to the south by a privately owned single-family residences and a residence owned by Community Partners; and to the east by Rush Road (Figure 2). Bishop Road is just south of the southern project area.

Berwick Creek and a stream-associated wetland are the primary critical areas in the project area. Two Oregon white oaks are on a terrace north of the stream.

RIPARIAN CORRIDOR ALONG BERWICK CREEK

The stream in the restoration area averages 9.7 feet wide, is channelized, and has heavily downcut banks, especially at the southwest bend in the stream where winter flows achieve high velocities and subsequent overbank flows and erosion. Beavers have constructed several dams in the stream channel upstream of the southwest bend, which slow but do not block water flow. Deciduous trees have fallen into the stream where the banks have substantially eroded. The streambed is a silty substrate and lacks gravels.

The riparian corridor is narrow and vegetated in patches with shrubs and trees. The understory is a mix of native and non-native herbaceous species and is largely dominated by reed canarygrass. The shrub layer is also a mix of native and non-native species. Himalayan blackberry is prominent; red-osier dogwood and rose are common native shrubs. Where an overstory exists, it is primarily Oregon ash with a few Sitka spruce, Douglas-fir, and cherry.

RIVERINE WETLAND SOUTH OF BERWICK CREEK

The wetland in the field south of Berwick Creek is dominated by reed canarygrass within the project area with patches of soft rush scattered throughout the wetland. The wetland receives overbank flows from Berwick Creek and substantial winter flow from the west flowing ditch (Ditch A). Due to the monoculture of reed canarygrass and lack of structural diversity, the wetland provides low to moderate habitat functions in the project area.

Critical Area Inventories

LOCAL CRITICAL AREAS INVENTORY

The Lewis County critical areas inventory identifies Berwick Creek, its floodway, and its 100-year flood area within the project area (Figure 3). Berwick Creek is a Type F-B water according to City standards. The closest wetland is mapped immediately northwest of the project area.

NATIONAL WETLANDS INVENTORY

The National Wetlands Inventory (NWI) maps a palustrine scrub-shrub, seasonally flooded wetland (PSSC) within the project area (Figure 4). Emergent wetlands are mapped outside of the project area.

FOREST PRACTICES MAPPING

The Washington Department of Natural Resources (WDNR) maps Berwick Creek as a Type F water (Figure 5).

SOIL SURVEY

The Natural Resource Conservation Service (NRCS 2019) maps the soils within the study area as follows (Figure 6):

Table 1.Mapped Soils

Soil Series	Symbol	Percent Slope	Drainage Class	NRCS Hydric Designation ¹	Test Plots per Soil Series
Lacamas silt loam	118	0 to 3	Poorly drained	Yes	TP 1-8

¹ NRCS 2020

Lacamas silt loam is located on floodplains and terraces and is typically silt loam from 0 to 17 inches and silty clay and clay below 17 inches.

PRIORITY HABITATS AND SPECIES

The Washington Department of Fish and Wildlife identifies Berwick Creek within the project area. The stream is identified as having coho, cutthroat, and rainbow trout (Figure 7). Big brown bats and freshwater emergent wetlands are mapped outside of the project area.

Methods

ELS biologists conducted field visits on 25 March 2019 and 18 February 2020 to delineate the stream and wetland within the project area, assess stream and wetland functions, and collect vegetation, soils, and hydrology data. The weather was cool and wet upon visitation and during days preceding the field work. January 2020 had higher than normal total precipitation (15.56 inches total or 7.72 inches above normal) and slightly above normal mean temperatures (+3.1° F). February 2020 had slightly lower than normal total precipitation (3.38 inches total or -2.08 inches below normal) and slightly below normal mean temperatures (-0.4° F) according to the National Weather Service preliminary climate data for the Olympia Airport (2020).

STREAM

Berwick Creek's ordinary high water mark (OHWM) was delineated following *RCW 90.58.030*. Consecutively numbered flagging, identified as OHWM N-1 through N-29 and S-1 through S-29,

was placed along the stream's north and south OHWMs. Gibbs & Olson, Inc. surveyed the OHWM flags in March 2019 (Figure 2).

WETLAND

One wetland, identified as Wetland A, was delineated within the project area (Tables 1 and 2; Figure 2). Additionally, the top of bank of Ditch A, which is within Wetland A, was marked by consecutively numbered flags. We followed the Routine Determination Method¹ for delineating the wetland boundary according to the approved federal manual and appropriate regional supplements². Wetlands are regulated as "Waters of the United States" by the U.S. Army Corps of Engineers (Corps), "Waters of the State" by the Washington State Department of Ecology (Ecology), and locally by *CCC Chapter 40.450 Wetland Protection*.

The wetland boundaries extend well outside of the project area; thus, the wetland within the project area was delineated by aerial photo analysis. Vegetation, soil, and hydrology data were collected from eight test plots within the project area to verify the presence and boundaries of the wetland (Figure 2; Appendix A). Test plot locations were recorded using a hand-held GPS capable of sub-meter accuracy. Soil colors in test plots were evaluated by hue, value, and chroma using the Munsell Soil Color Chart (Munsell 2000). Plant dominance was based on the 50/20 rule (Corps 2010). Gibbs & Olson, Inc. surveyed the topography, Ditches A and B, gravel access road, culvert, and upland within Wetland A in March 2019.

Results

STREAM

Berwick Creek is a Type F (fish-bearing) stream that originates in the foothills to the northeast of the project area (Table 2; Figures 2 and 5). The stream has been channelized along the segment within the project area. Berwick Creek continues to the west and north outside of the project area, eventually joining with Dillenbaugh Creek approximately 1.5 miles to the northwest. Dillenbaugh Creek outlets to the Chehalis River near Exit 77 of Interstate 5. Man-made structures are present along Berwick Creek's channel including a small rock "dam" and other debris. Additionally, beavers have constructed several dams within the stream channel.

¹ Routine Determination Method examines vegetation, hydrology, and soils to determine if wetlands exist in a given area. By definition, wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (40 CFR §230.3).

² U.S. Army Corps of Engineers, *Wetlands Delineation Manual* (Environmental Laboratory 1987), *Regional Supplement* to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (2010).

Table 2. Stream Summary

Feature	Description				
Critical Area	Berwick Creek	-M			
WDNR Type	F A A A A A A A A A A A A A A A A A A A				
Local Type	F-B				
Local Buffer	100 feet				
Watershed	WRIA 23 (Upper Chehalis)				
Substrate	silt				
Average Width	9.7 feet				
Channel Condition	Downcut with eroding banks				
Fish Access	Small rock "dam" and beaver dams partially block access within project area				
Floodplain Connectivity	Stream has been channelized in project area, contributing to some berming along top of stream channel; seasonal overbank flooding contributes to hydrology in Wetland A				
Water Quality	Watershed contains TDMLs for ammonia-N, BOD, dissolved oxygen, fecal coliform, and temperature				
Riparian Conditions	Abundant reed canarygrass and relatively sparse native deciduous shrubs and trees in narrow band along the riparian corridor within project area				

WETLAND

One riverine wetland, identified as Wetland A, is south of Berwick Creek (Table 3; Figure 2).

Feature	Description	
Critical Area	Wetland A	
Area	1.70 acres within project area; 7.29 acres estimated total	
Ecology Rating	Category II	
Local Rating	Category II	
Habitat Score	5	
Local Buffer	100 feet	
HGM Classification	Riverine, Slope	
Cowardin Classification	PFOC, PEMC	
Hydroperiod	Seasonally flooded or i to wetland (Berwick Cr A)	nundated, permanently flowing stream adjacent eek), seasonally flowing stream in wetland (Ditch
Dominant Vegetation	Phalaris arundinacea,	Fraxinus latifolia
Soils Indicators	Redox Dark Surface (F6	5) & Depleted Matrix (F3)
Hydrology Indicators	Surface Water (F1), Hig Sulfide Odor (C1), & O	sh Water Table (A2), Saturation (A3), Hydrogen Adized Rhizospheres along Living Roots (C3)

Table 3.Wetland Summary

Vegetation

Wetland

Wetland A contains forested and emergent vegetation classes. Oregon ash (*Fraxinus latifolia*, FACW) is the main tree within the overstory canopy, providing approximately 30 percent cover within the wetland. The emergent understory is dominated by reed canarygrass (*Phalaris arundinacea*, FACW) and occupies about 90 percent cover in the wetland within the project area and remainder of the wetland. No forest class is present within the project area. Soft rush (*Juncus effusus*, FACW) is scattered in clumps throughout the wetland. Hydrophytic vegetation

was met due to 100 percent of the dominant vegetation within the test plots being obligate, facultative wetland, or facultative species (Appendix A).

Upland

The upland vegetation in Wetland A's buffer within the project area is dominated by Oregon ash, red-osier dogwood (*Cornus sericea*, FACW), and reed canarygrass. Several Oregon white oak (*Quercus garryana*, FACU) are north of the stream. Black cottonwood (*Populus trichocarpa*, FACW), Sitka spruce (*Picea sitchensis*, FAC), Douglas-fir (*Pseudotsuga menziesii*, FACU), cherry (*Prunus* sp., FACU), rose (*Rosa* sp., FAC), Himalayan blackberry (*Rubus armeniacus*, FAC), and Japanese knotweed (*Polygonum cuspidatum*, FACU) grow elsewhere along the riparian corridor.

Soils

Wetland

Evaluated wetland soils were very dark gray and grayish brown (10YR 3/1 and 3/2) and dark gray (10YR 4/1) silt loams and silty clay loams. All profiles were evaluated to a depth of at least 16 inches. Redoximorphic features within wetland test plots presented as concentrations in the matrix and were characterized by reddish brown (5YR 4/3), yellow brown (5YR 4/6), and strong brown (7.5YR 5/8) hues. Hydric soil indicators were met by Depleted Matrix and Redox Dark Surface (Appendix A).

Upland

The evaluated upland soils were dark brown (10YR 3/3) and black (10YR 3/1) silt loams and loams at the top of the profile. Beneath the top layer, soils were gray (10YR 5/1), dark brown (10YR 3/3), and very dark grayish brown 10YR 3/2) silt loam and loam. Some areas had distinct or prominent redoximorphic concentrations in the matrix. Test plots 1 and 4 met criteria for hydric soils (Depleted Matrix and Redox Dark Surface; Figure 6; Appendix A).

Hydrology

Wetland A receives hydrological inputs from seasonal overbank flows from Berwick Creek and Ditch A and groundwater from its low lying position in the floodplain (Figure 2). The wetland has a surface water connection that outlets to Berwick Creek via Ditch A. Water also infiltrates within the wetland. The wetland hydroperiods are:

- Seasonally flooded or inundated;
- Permanently flowing stream adjacent to the wetland (Berwick Creek); and
- Seasonally flowing stream in the wetland (Ditch A).

Wetland

Primary wetland hydrology indicators observed within wetland test plots included surface water up to 12 inches, high water table, and saturation to the surface. Oxidized rhizospheres along living roots and hydrogen sulfide odor were also present (Appendix A). Surface water was present in shallow depressions within the wetland and Ditch A during all field visits.

Upland

The upland areas lacked positive wetland hydrological indicators and the evaluated soil profiles were dry.

Conclusions

We identified the following critical areas within the project area: Berwick Creek, a palustrine wetland and ditch, and Oregon white oaks (Table 3).

Critical Area	Area	Ecology ¹ /City Rating ² WDNR ³ / City Type ⁴	Cowardin Classification ⁵	HGM Classification	Standard Buffer ⁶
Berwick Creek		Type F / F-B			100 feet
Wetland A	1.70 acres within project area	11	PFOC, PEMC	Riverine, Slope	100 feet
Oregon White Oak	2 oaks: 24-in dbh & 36-in dbh				

Table 4. Critical Areas Summary

¹Hruby 2014 ²*CMC 17.23.010*

² CMC 17.23.010 ³ WAC 222-16-030 ⁴ CMC 17.25.020 ⁵ Cowardin *et al.* 1979 ⁶ CMC 17.23.030 and CMC 17.25.030

STREAM TYPING AND BUFFER

Berwick Creek is a Type F water (fish-bearing) under the *Washington Administrative Code* (WAC) 222-16-030 Water Typing System. The stream, at less than 10 feet wide, is categorized as a Type F-B water under the Chehalis Municipal Code and requires a 100-foot buffer (*CMC 17.25.030*).

WETLAND CATEGORIZATION AND BUFFER

Wetland A is an approximately 7.29-acre Category II, palustrine forested and emergent wetland, which receives overbank flooding on a seasonal basis from Berwick Creek and Ditch A (Table 2). The wetland contains riverine and slope hydrogeomorphic classes.

Wetland A rates as a Category II riverine wetland under Ecology's 2014 wetland rating system (Hruby 2014; Figures 8-11; Appendix B), although the wetland is identified as having two hydrogeomorphic classifications: riverine and slope. The City of Chehalis agreed to follow Ecology's 2014 rating system for consistency with state and federal regulations (pers.comm. D. King February 12, 2020). According to the rating system, Wetland A has high indictors to improve water quality and reduce flooding and erosion. In particular, the wetland scored:

- <u>High</u> for improving water quality (8 out of 9 points),
- <u>High</u> for hydrologic functions (8 out of 9 points), and
- <u>Low</u> for habitat functions (5 out of 9 points).

As a Category II wetland with a habitat score of 5, Wetland A requires a 100-foot buffer for low habitat functions (*CMC 17.23.030*)³.

PRIORITY HABITAT AND SPECIES

According to the Washington Department of Fish and Wildlife's Priority Habitats and Species (PHS) Report (2020), Berwick Creek is identified within the project area. Two Oregon white oaks north of the stream, on an upland terrace, are not identified on the PHS report, but were field-identified and their locations surveyed (Figure 2). Best management practices for avoiding oak impacts are described in the restoration plan (ELS 2020). The other mapped occurrences (freshwater wetlands) on the PHS report are well outside of the project area and will not be affected.

Limitations

ELS bases this report's determinations on standard scientific methodology and best professional judgment. In our opinion, local, state, and federal regulatory agencies should agree with our determinations. However, the information contained in this report should be considered preliminary and used at your own risk until it has been approved in writing by the appropriate regulatory agencies. ELS is not responsible for the impacts of any changes in environmental standards, practices, or regulations after the date of this report.

³ According to a July 2018 update from Ecology on its rating guidance, habitat scores of 3 to 5 points now constitute low habitat function (Ecology 2018). As the City is expected to update their Critical Areas Ordinance to reflect Ecology's revision, this report adopts that update.

References

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- Washington Department of Ecology (Ecology). July 2018. *Appendix 8-C, Guidance on Widths of Buffers and Ratios for Compensatory Mitigation for Use with the Western Washington Wetland Rating System*. Ecology Publication No. 05-06-008. Olympia, Washington.
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- Washington State Legislature. 2016. Washington Administrative Code (WAC). Chapter 222-16-030 Water Typing System. https://app.leg.wa.gov/WAC/default.aspx?cite=222-16-030. Accessed February 2020.

Figures & Photoplates





3.

LEGEND:

- Project Area (2.79 ac.)
- Wetland Boundary
- Approximate Wetland Boundary (7.29 ac.)
- Stream with Flow Direction
- Ditch with Flow Direction
- OHWM
- Stream Buffer
- Culvert \succ
 - Oregon White Oak
- TP-1 Test Plot
- -1 Photopoint

- NOTE(S): 1. Aerial from Google Earth™. 2. Ecological Land Services Inc. biologists delineated the stream and wetland boundaries on March 25, 2019 and February 18, 2020.
 - Gibbs & Olsen inc. surveyed the stream and wetlands flags in March 2019.
- 4. Stream typing and buffer width are according to CMC 17.25.020 and 17.25.030.
- 5. Wetland classification and buffer widths are according to CMC 17.23.010 and CMC 17.23.030.

	Figure 2 EXISTING CONDITIONS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, WA Section 10 & 15, Township 13N, Range 2W, W.M.
/	1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578–1371 Phone: (360) 578–1371 Fax: (360) 414–9305 Fax: (360) 414–9305 CHK: MM www.eco-land.com PrOJECT NO: 362.35
	0 100 200 SCALE IN FEET









0

Lacamas silt loam, 0 to 3 percent slopes. Hydric. Scamman silty clay loam, 0 to 5 percent slopes. Hydric.



3/27/2020 3:16 PM 362.35 WRF Jennifer





3/27/2020 3:16 PM 362.35_WRF Jennifer



362.35



Water Quality Atlas Map - 303(d) Orange - Category 4A waters





Aerial view east, June 2018.





Aerial view south showing extent of flooding, December 2019.







1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305 DATE: 02/03/20 DWN: MM PRJ. MGR: MM PROJ.#: 362.35 Photoplate 3 SITE PHOTOS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, Washington Sections 10 &15, T13N, R2W, W.M.



Above: Aerial view east, June 2018.

Below: Aerial view southwest, June 2018. Bishop Road is in the background.





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Above: View south showing existing vegetation in the riparian corridor. Himalayan blackberry is visible north of the stream. Aerial view June 2018.

Below: View east and close-up of restoration area. Rush Road is in the background. Aerial view June 2018.





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Above: View of Wetland A and Ditch A. Aerial view June 2018.

Below: (Photopoint 1) Berwick Creek's existing channel and silty substrate. Reed canarygrass is a prominent herbaceous plant in the riparian zone.





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Above: (Photopoint 2) ock "dam" and other debris clogging Bewick Creek's channel.

Below: (Photopoint 3) View south upstream of rock "dam".





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Above: (Photopoint 4) View east showing existing stream channel and surrounding vegetation, March 2019.

Below: (Photopoint 5) View east showing existing stream channel and surrounding vegetation. Oregon white oaks, with orange flagging, are visible in the center, March 2019.





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Above: (Photopoint 6) View east showing Wetland A south of Berwick Creek, March 2019.

Below: (Photopoint 7) View east showing stream channel and Wetland A, March 2019.





1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305 DATE: 02/03/20 DWN: MM PRJ. MGR: MM PROJ.#: 362.35 Photoplate 9 SITE PHOTOS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, Washington Sections 10 &15, T13N, R2W, W.M.



Above: (Photopoint 8) View northeast showing Ditch B, March 2019.

Below: (Photopoint 9) View east showing incised stream channel, March 2019





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Above: (Photopoint 10) View east showing Ditch A and crossing with culvert, March 2019.

Below: (Photopoint 11) View northwest showing Wetland A, February 2020.





1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305 DATE: 02/03/20 DWN: MM PRJ. MGR: MM PROJ.#: 362.35 Photoplate 11 SITE PHOTOS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, Washington Sections 10 &15, T13N, R2W, W.M.



Above: (Photopoint 12) View west showing Ditch A. Berwick Creek is in the background, March 2019.

Below: (Photopoint 13) View northwest showing Wetland A, March 2019. The Chehalis Generating Facility is in the background.





1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305 DATE: 02/03/20 DWN: MM PRJ. MGR: MM PROJ.#: 362.35 Photoplate 12 SITE PHOTOS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, Washington Sections 10 &15, T13N, R2W, W.M.



Above: (Photopoint 14) View southwest showing Wetland A, March 2019.

Below: (Photopoint 15) View east showing Wetland A, March 2019.





1157 3rd Ave., Suite 220A Longview, WA 98632 Phone: (360) 578-1371 Fax: (360) 414-9305 DATE: 02/03/20 DWN: MM PRJ. MGR: MM PROJ.#: 362.35 Photoplate 13 SITE PHOTOS Berwick Creek Flood Reduction and Restoration Port of Chehalis City of Chehalis, Lewis County, Washington Sections 10 &15, T13N, R2W, W.M. Appendix A | Wetland Determination Data Forms

Plant Indicators

The indicator status, which follows the common and scientific names on the data forms, indicates how likely a species is to be found in wetlands. Listed from most likely to least likely to be found in wetlands, the indicator status categories are:

- **OBL** (obligate wetland) occur almost always (estimated probability >99%) under natural conditions in wetlands.
- **FACW** (facultative wetland) usually occur in wetlands (estimated probability 67%-99%), but occasionally found in non-wetlands.
- **FAC** (facultative) equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%).
- **FACU** (facultative upland) usually occur in non-wetlands (estimated probability 67%-99%), but occasionally found in wetlands (estimated probability 1%-33%).
- **UPL** (obligate upland) occur almost always (estimated probability >99%) under natural conditions in non-wetlands.
- **NI** (no indicator) insufficient data to assign to an indicator category.

Project/Site: Berwick Creek Flood Reduction & Restoration	City/County: Lewis	Sampling Date: 2-18-20
Applicant/Owner: Port of Chehalis	State: WA	Sampling Point: TP1
Investigator(s): Godinho, S. and McManus, J.	Section, Township, Range: S	310, T 13N, R 2W
Landform (hillslope, terrace, etc.): flood plains, terraces	Local relief: (concave, convex, none):	none Slope (%):0-3%
Subregion (LRR): A Lat: 46.61	368068° Long: -122.9122261°	Datum: NAD83
Soil Map Unit Name: (118) Lacamas silt loam	NWI classific	ation: None
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes⊠ No⊡ (If no, explain	Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumstance	es" present? Yes⊠ No⊡
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answers	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	ampling point locations, trans	ects, important features, etc.
Hydrophytic Vegetation Present? Yes 🛛 No 🗌	Is the Sampled Area	
Hydric Soils Present? Yes 🛛 No 🗌	within a Wetland?	
Wetland Hydrology Present? Yes 🗌 No 🛛		
Remarks: TP-1 is located in the southwest corner of Lewis County	Tax Parcel 017775001000, southwest	t of Wetland A. Vegetation in this test plot
consisted of trees and herbaceous species. The hydrophytic vegeta	tion criterion was met due to 100% of t	the dominant vegetation within the test plot
having either OBL, FACW, or FAC indicator statuses. Additionally, r	equirements for the hydric soil indicato	or Redox Dark Surface (F6) were satisfied,
although there was no evidence of wetland hydrology within this tes	t plot. Given TP-1 did not satisfy all thr	ee wetland indicator criteria, it is not
considered to be within a wetland area.		

	Absolute	Dominant	Indicator	Dominance Test Worksheet		
Tree Stratum (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status			
1. Fraxinus latifolia	20%	yes	FACW	Number of Dominant Species	3	(A)
2	%	<u> </u>		That Are OBL, FACW, or FAC:		
3	%	<u> </u>				
4	%			Total Number of Dominant	3	(B)
50% = <u>10</u> 20% = <u>4</u>	20%	=Total Cover		Species Across All Strata:		
				Percent of Dominant Species		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL. FACW. or FAC	100	(A/B)
1.	%			Prevalence Index worksheet	<u></u>	(/
2.	%			Total % Cover of:	Multiply by	
3.	%			OBL species	x 1=	
4	%			FACW species	x 2=	
5	<u>%</u>			FAC species	x 3=	
$\frac{50\%}{50\%} = 20\% =$	%	=Total Cover		FACU species	x 4=	_
Herb Stratum (Plot size: 5 ft radius)				UPL species	x 5=	
1 Phalaris arundinacea	40%	ves	FACW	Column Totals:	(A)	(B)
2. *Poa son	30%	ves	FAC	Prevalence Index =	B/A=	_ (3)
3 Ranunculus repens	10%	<u> </u>	FAC	Hydronbytic Vegetation Indica	tors:	
A	<u> </u>		17.0	\Box 1 – Rapid Test for Hydron	hytic Vegetation	
5	<u> </u>			\boxtimes 2 – Dominance Test is >50	1%	
6	%			\square 3 - Prevalence Index is <3	0 ¹	
7		<u> </u>		□ 0 - 1 revalence index is ≥0	.u ons ¹ (Provide	
2 2	0/2	<u> </u>		supporting data in Remark	s or on a senarat	A
0	0/			sheet)		
10				5 Wetland Non Vascular	Plante ¹	
11	<u>%</u>				Fidilis	
50% = 40 20% = 16	80%	=Total Cover		□ □ Problematic Hvdrophvtic \	/egetation ¹ (Expla	uin)
Woody Vine Stratum (Plot size: 15 ft radius)		-			0 (1	,
<u> </u>	%			¹ Indicators of hydric soil and we	land hydrology	
2.	%			must be present, unless disturbe	ed or problematic	_
	%	=Total Cover			1	
50% = 20% =		-		Hydrophytic		
				Vegetation		
				Present?	Yes⊠ No	
% Bare Ground in Herb Stratum <u>20%</u>						
Remarks: The hydrophytic vegetation criterion was n	net due to 100	% of the domination	ant vegetat	ion within the test plot having eithe	er OBL, FACW, o	r FAC
indicator statuses.						
1						

SOIL Profile Descrip	tion: (Desc	ribe to the depth	needed to docu	ment the ind	cator or confi	rm the abs	sence of indicators.)	Sampling Point: <u>TP1</u>
Depth	Matrix			Redox Featu	ires			
(inches) Col	or (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16 10	0YR 2/1	98%	7.5YR 4/6	2%	C	Μ	silt loam	See Remarks Below
		%		%				
		%		%				
		%		%				
		<u>%</u>		%				
		<u> </u>		<u>%</u>				<u></u>
		<u> </u>		<u>%</u>				
17.00			D. I. I.M. I.	<u>%</u>		<u> </u>	21	
'Type: C=Con	icentration, L	D=Depletion, RM=		CS=Covered	or Coated San	d Grains.	Location: PL=Por	
	icators: (Ap	plicable to all Li		erwise noted.)		acators for Problema	aic Hydric Solis
	$(\Delta 2)$			triv(S6)			Z CIII MUCK (ATU) Red Parent Material (T	F2)
	(A3)			(UN (00) (V Mineral (E1			Very Shallow Dark Sur	(TE12)
	(AS) Ulfido (AA)			y Motrix (F1			Other (Evaluin in Rome	ace (IFIZ)
	lilide (A4)							iiks)
	IOW Dark Su	nace (A11)		$\operatorname{Atrix}(F3)$		31	line to the second s	and the formation of the
	Surface (A12)	Redox Dark	Surface (F6)		Sinc	Vicators of hydrophytic v	vegetation and
Sandy Muck	y Minerals (S	51)		irk Surface (F	()		unless disturbed or pro	blematic
Sandy Gleye	ed Matrix (S4	1)	☐ Redox Depr	essions (F8)				biematic
Restrictive Lay	ver (if prese	nt):						
lype:						l brokelo	Coll Dresent?	
Deptn (inches):						Hyaric	Soll Present?	
Remarks: Requ	irements for	the hydric soil ind	licator Redox Dar	k Surface (F6) were satisfied	within this	test plot due to the pre-	sence of a soil layer with a
					r prominent rec		lations occurring as so	in masses of pore inings.
HYDROLOGY	•							
Wetland Hydro	logy Indica	tors:						
Primary Indicato	ors (min. of c	one required; chec	k all that apply)				Secondary Indica	ators (2 or more required)
	or (A1)		Water Stain	ad Leaves (BC) (oxcopt MI B	0 1 2 1 1	Water Stained	
	$C_1(A_1)$		and (B)	eu Leaves (Da		A 1, 2, 4A,	14 and 14	\mathbf{R}
\square Regimeration (A				211)				erns (B10)
	(P1)			rtobratos (P1)	2)			Vator Table (C2)
	nooito (P2)			ulfida Odar (C	<i>)</i> 1)			where A_{arial} imaging (C2)
					1) Marilining Deel	ha (C2)		Desition (D2)
	S(D3)			Izospheres al		ls (C3)		-0.511001(D2)
	Crust (B4)		Presence of	Reduced Iron		`		
	s (B5)			Reduction in	lilled Soils (C6))		lest (D5)
Surface Soil	Cracks (B6)		Stunted or S	tressed Plants	s (D1) (LRR A)		Raised Ant M	ounds (D6) (LRR A)
Inundation V	isible on Aei	rial Imagery (B7)	Other (Expla	ain in Remarks	5)		Frost-Heave H	Hummocks (D7)
Sparsely Ve	getated Con	cave Surface (B8))					
Field Observat	ions:							
Surface Water F	Present?	Yes 📋	No 🛛 Dej	oth (Inches):				
Water Table Pre	esent?	Yes 🖂		oth (Inches):	12	Wetland	d Hydrology Present?	
Saturation Pres	ent?	Yes 🖂		oth (Inches):	10			Yes 🗋 No 🖄
(Includes Capilla	ary Innge) dod Data (Si	troom gougo mor	itoring woll oprig	I photos prov	ious increation	c) if ovoila	blo:	
	ueu Data (Si	ucani yauye, mor	moring well, aerla	ii priotos, prev	ious inspection	ə), ii avallal	NIC.	
Remarks Satura	ation (A2) on	d a High Water T	ahle (A2) was ah	convod within t	his test plat all	though a bir	ah water table was not	observed at a depth
shallow enough	to satisfy w	etland hydrology i	ndicators (<10 in/	ches) The pre	sence of satura	ation within	this test plot is likely a	result of excessive rainfall
in days precedir	na the site vi	sit and therefore i	s not indicative of	wetland hvdr	ology.		and toot plot is likely a	
.,	5			u				

Project/Site: Berwick Creek Flood Reduction & Restorationn	City/County: Lewis	Sampling Date: 2-18-20
Applicant/Owner: Port of Chehalis	State: WA	Sampling Point: TP2
Investigator(s): Godinho, S. and McManus, J.	Section, Township, Range: S10	, T 13N, R 2W
Landform (hillslope, terrace, etc.): flood plains, terraces	cal relief: (concave, convex, none): no	one Slope (%): 0-3%
Subregion (LRR): A Lat: 46.61904	479° Long: -122.9116352°	Datum: NAD83
Soil Map Unit Name: (118) Lacamas silt loam	NWI classification	n: none
Are climatic / hydrologic conditions on the site typical for this time of year	ar? Yes🛛 No🗌 (If no, explain Rei	marks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumstances"	present? Yes No
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answers in	Remarks.)
SUMMARY OF FINDINGS – Attach site map showing san	npling point locations, transec	ts, important features, etc.
Hydrophytic Vegetation Present? Yes 🛛 No 🗌	In the Converted Area	
Hydric Soils Present? Yes 🛛 No 🗌	Is the Sampled Area	
Wetland Hydrology Present? Yes 🛛 No 🗌	within a wetland?	
Remarks: TP-2 is located in the central portion of Lewis County Tax P	arcel 119480000, within Wetland A. V	egetation within this test plot consisted
entirely of emergent species. The hydrophytic vegetation criterion was	met due to 100% of the dominant vege	tation within the test plot having either
OBL, FACW, or FAC indicator statuses. Additionally, the hydric soil indi	icator Redox Dark Surface (F6) was of	oserved, along with the following primary

wetland hydrology indicators: Surface Water (A1), a Hydrogen Sulfide Odor (C1), and Oxidized Rhizospheres along Living Roots (C3). Given TP-2 satisfied all three wetland indicator criteria, it is considered to be within a wetland area.

The software (Distainer 20 ft and inc.)	Absolute	Dominant	Indicator	Dominance Test Worksheet	· · · · ·	
<u>I ree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status	Number of Dominant Species	4	(•)
	<u>%</u>			That Are OBL FACW or FAC	1	(A)
2	<u>%</u>	·				
3.	%			Total Number of Dominant		-
4.	%			Species Across All Strata	1	(B)
50% = 20% =	%	=Total Cover				
				Percent of Dominant Species	100	
Sapling/Shrub Stratum (Plot size: <u>15</u> π. radius)	0/			That Are OBL, FACW, or FAC	<u>100</u>	(A/B)
1	<u>%</u>	·		Prevalence Index worksheet	• • • • •	
2.	%			Total % Cover of:	Multiply by:	
3	%			OBL species	x 1=	
4	%			FACW species	x 2=	
5	%	<u></u>		FAC species	x 3=	
50% = 20% =	%	=Total Cover		FACU species	x 4=	
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)				UPL species	x 5=	_
1. Phalaris arundinacea	85%	yes	FACW	Column Totals:	(A)	(B)
2. Hypericum anagalloides	10%	no	OBL	Prevalence Index =	B/A=	
3.	%			Hydrophytic Vegetation Indica	ators:	
4.	%			1 – Rapid Test for Hydrop	hytic Vegetation	
5.	%			2 – Dominance Test is >5	0%	
6.	%	·		3 - Prevalence Index is ≤3	.0 ¹	
7.	%	·		🗌 4 - Morphological Adaptati	ions ¹ (Provide	
8.	%			supporting data in Remark	ks or on a separate	
9.	%			sheet)		
10.	%			5 - Wetland Non-Vascular	Plants ¹	
11.	%					
50% = <u>48</u> 20% = <u>19</u>	95%	=Total Cover		Problematic Hydrophytic \	/egetation ¹ (Explain))
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> ft radius)						
1.	%			¹ Indicators of hydric soil and we	tland hydrology	
2.	%			must be present, unless disturbe	ed or problematic.	
50% = 20% =	%	=Total Cover				
		-		Hydrophytic		
				Vegetation		
% Bare Ground in Herb Stratum <u>5%</u>				Present?	Yes⊠ No⊡	
Remarks:The hydrophytic vegetation criterion was m indicator statuses.	net due to 100	% of the domina	ant vegetat	ion within the test plot having eithe	er OBL, FACW, or F	AC

SOIL Profile De	escription: (Desc	ribe to the dept	h needed to doc	ument the ind	icator or con	firm the a	bsence of indicators.)	Sampling Point: <u>TP2</u>
Donth	Motri			Podov Foot				
(inches)	Color (moist)	×	Color (moist)			loc^2	Texture	Remarks
0-16	10YR 3/1	93%	5YR 4/3	7%	<u> </u>	 M	silt loam	See Remarks Below
		%		%				
		%		%				
		%		%]			
		%		%				
		%		%				
		<u>%</u>		<u>%</u>				
<u></u>		<u>%</u>		%_	<u> </u>			
'Type: (C=Concentration,	D=Depletion, RM	I=Reduced Matrix	k, CS=Covered	or Coated Sa	ind Grains	Location: PL=Po	re Lining, M=Matrix
Hydric So	oil Indicators: (A	pplicable to all I	LRRS, unless off	herwise noted.)	г	Indicators for Problema	atic Hydric Soils
	al (AT) Eninodon (A2)		Sandy Red	10X (55)		L	_ Z CIII MUCK (A IU)	·E2)
				aurix (30)				ΓZ
	HISTIC (A3)			cky Mineral (F1) (except IVIL	RA 1) [
	gen Sulfide (A4)			yed Matrix (F2)		L	_ Other (Explain in Rema	arks)
∐ Deplet	ted Below Dark Si	urface (A11)	Depleted N	/latrix (F3)				
Thick I	Dark Surface (A12	2)	🛛 Redox Dar	k Surface (F6)		3	Indicators of hydrophytic	vegetation and
Sandy	Mucky Minerals	S1)	Depleted D	0ark Surface (F	7)		Wetland hydrology mu	st be present,
Sandy	Gleyed Matrix (S	4)	🗌 Redox Dep	pressions (F8)			unless disturbed or pro	blematic
Restrictiv	ve Layer (if prese	ent):						
		,						
Type:								
Depth (ind	ches):					Hyd	ric Soil Present?	Yes⊠ No∐
IYDROL Wetland	-OGY Hydrology Indica	ators:						
Primary Ir	ndicators (min. of	one required; che	eck all that apply)				Secondary Indica	ators (2 or more required)
Surfac	e Water (A1)		☐ Water-Stai	ned Leaves (B§) (except ML	.RA 1, 2, 4	A, 🗌 Water-Staine	d Leaves (B9) (MLRA 1, 2,
	valer Table (AZ)) (P11)				D) torno (B10)
	Marka (D1)			(DII) Vertebretes (D1)	2)			Neter Teble (C2)
	ivial KS (DI)				2) 4)			
	ent Deposits (B2)				l) Describilities De	ata (02)		Sible on Aerial Imagery (C9)
				nizospheres ai		$\cos(C3)$		20 silion (D2)
	viat or crust (B4)			DI Reduced Iror	Г (С4) Тін. I О. ін. (О			ard (D3)
	eposits (B5)	`		n Reduction in	I lied Solis (C	(b)		
Surfac	e Soil Cracks (Bo)		Stressed Plant	s (D1) (LRR A	A)		
	ation Visible on Ae	erial Imagery (B7)) U Other (Exp	lain in Remarks	6)		∐ Frost-Heave	Hummocks (D7)
Sparse	ely Vegetated Cor	icave Surface (B	8)					
Field Obs	servations:	V. 57						
Surface V	vater Present?	Yes ⊠ Ves ⊠		eptn (Inches):	<u>J.5-1</u>	Watle	and Understand	
Soturation	Die Present?	Yes 🖂		epth (Inches):	2	vvetia	ind Hydrology Present?	
(Includes	Canillary fringe)			eptir (inches).	J	i		
Describe	Recorded Data (S	Stream gauge, mo	onitoring well, aer	ial photos, prev	ious inspectio	ons), if ava	ilable:	
Remarks:	A Hydrogen Sulfi	de Odor (C1) and	Oxidized Rhizos	pheres along L	iving Roots (C	C3) were o	bserved within this test pl	ot. Additionally, this test
piot was l	ocated in an area	with U.5- to 1-inc	in of Surface Wat	er (A1).				

Project/Site: Berwick Creek Flood Reduction & Resto	ration	City/Cou	unty: Lewis	Sampling Date: 2-18-20
Applicant/Owner: Port of Chehalis			State: W	/A Sampling Point: TP3
Investigator(s): Godinho, S. and McManus, J.		Sectio	n, Township	o, Range: S10, T 13N, R 2W
Landform (hillslope, terrace, etc.): flood plains, terrace	S	Local relief: (c	oncave, co	nvex, none): concave Slope (%):0-3%
Subregion (LRR): A	Lat: 46.61	920597°	Long: -122	2.9110681° Datum: NAD83
Soil Map Unit Name: (118) Lacamas silt loam			<u> </u>	WI classification: none
Are climatic / hydrologic conditions on the site typical f	or this time of	f year? Yes⊠	No (If	no, explain Remarks.)
Are Vegetation . Soil . or Hydrology significant	lv disturbed?	Are	e "Normal C	Sircumstances" present? Yes No
Are Vegetation . Soil . or Hydrology naturally p	roblematic?	(If need	ed. explain	anv answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	sampling po	int locatio	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No		Is the Sar	npled Area	I Contraction of the second
Wetland Hydrology Present? Ves X No	4	within a V	Vetland?	Yes⊠ No⊡
Remarks: TP-3 is located in the central portion of Lev	LI Nis County Ta	av Parcel 110/18	0000 withi	n Wetland A Vegetation within this test plot consisted
entirely of emergent species. The hydrophytic vegetat	ion criterion w	as met due to 1	100% of the	dominant vegetation within the test plot baying either
OPL EACW or EAC indicator statuces. Additionally t		indicator Doplo	tod Motrix ((E2) was absorved, along with 6, to 12 inches of Surface
OBL, FACW, of FAC Indicator statuses. Additionally, t	ne nyaric soli	Indicator Deple	ted Matrix ((F3) was observed, along with 6- to 12-inches of Surface
Water (A1). Given TP-3 satisfied all three wetland indi	cator criteria,	it is considered	to be within	n a wetland area.
VEGETATION - Use scientific names of pla	onte			
VEGETATION - Ose scientific fiames of pla				
	Absolute	Dominant	Indicator	Dominance Test Worksheet
Tree Stratum (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status	
1.	%	· · · · · · · · · · · · · · · · · · ·		Number of Dominant Species 1 (A)
2.	%			That Are OBL, FACW, or FAC:
3.	%	- <u> </u>		
4	%			Total Number of Dominant 1 (B)
50% = 20% =	%	=Total Cover		Species Across All Strata:
20/0		-		
				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL, FACW, or FAC <u>100</u> (A/B)
1.	%			Prevalence Index worksheet
2.	%			Total % Cover of: Multiply by:
3.	%			OBL species x 1=
4.	%			FACW species x 2=
5.	%			FAC species x 3=
50% = 20% =	%	=Total Cover		FACU species x 4=
Herb Stratum (Plot size: 5 ft radius)		-		UPL species x 5=
1. Phalaris arundinacea	100%	ves	FACW	Column Totals: (A) (B)
2.	%			Prevalence Index = B/A=
3	<u>%</u>			Hydrophytic Vegetation Indicators:
	%			\Box 1 – Rapid Test for Hydrophytic Vegetation
5	//			\square 1 = Napid Test for Hydrophytic Vegetation \square 2 = Dominance Test is >50%
5	20			\square 2 – Dominance Test is > 50 %
0	<u> </u>	·		\square 3 - Prevalence index is $\leq 3.0^{\circ}$
/	<u>%</u>	·		4 - Morphological Adaptations' (Provide
8	%			supporting data in Remarks or on a separate
9.	%			sneet)
10	%			☐ 5 - Wetland Non-Vascular Plants ¹
11	%			
50% = <u>50</u> 20% = <u>20</u>	100%	=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft radius)		-		
1.	%			¹ Indicators of hydric soil and wetland hydrology
2.	%			must be present, unless disturbed or problematic.
	%	=Total Cover		
50% = 20% =		-		Hydrophytic
				Vegetation
% Bare Ground in Herb Stratum 0%				

Remarks: The hydrophytic vegetation criterion was met due to 100% of the dominant vegetation within the test plot having either OBL, FACW, or FAC indicator statuses.

Depth Matrix			Redox Featu	ures			
(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16 10YR 4/1	95%	5YR 4/6	5%	C	М	silty clay loam	See Remarks Below
	%		%				
	%		%				
	%		%				
	%		%				
	<u>%</u>		<u>%</u>				
	<u>%</u>		%				
Type: C=Concentration D=I	<u>%</u> Depletion PM	-Peduced Matrix	<u>%</u> x_CS=Covered	or Costed Sar	d Grains	² l ocation: Pl -Po	re Lining M-Matrix
Hydric Soil Indicators: (Appli	icable to all I	RRs. unless of	herwise noted)		Indicators for Problem	atic Hydric Soils
Histosal (A1)		Sandy Red	dox (S5)	,		☐ 2 cm Muck (A10)	
Histic Epipedon (A2)		Stripped N	latrix (S6)		Ē	Red Parent Material (1	[F2)
☐ Black Histic (A3)		□ Loamv Mu	ckv Mineral (F1) (except MLR	A1) [- ∃ Verv Shallow Dark Su	, rface (TF12)
\square Hydrogen Sulfide (A4)			eved Matrix (F2))	г., с	Other (Explain in Rem	arks)
Depleted Below Dark Surfa	ce (Δ11)		Matrix (F3)	/	L		unoj
Depleted Below Bark Sulla			rk Surface (E6)		31	ndicators of hydrophytic	vogstation and
	N N			7)	3	Wetland hydrology mu	vegetation and
Sandy Mucky Minerals (S1))		Jark Surface (F	()		unless disturbed or pro	oblematic
Sandy Gleyed Matrix (S4)			pressions (F8)		-		
Restrictive Layer (if present)	:						
Гуре:							_
Depth (inches):					Hydr	ic Soil Present?	Yes⊠ No⊡
YDROLOGY							
Wetland Hydrology Indicator	rs:						
Primary indicators (min. of one	roquirod: obo	ok all that apply)				• • • • •	
	e required; che	ck all that apply)	1			Secondary Indic	ators (2 or more required)
Surface Water (A1)	e required; che	ck all that apply)	ined Leaves (B	9) (except MLF	RA 1, 2, 4	Secondary Indic	ators (2 or more required d Leaves (B9) (MLRA 1,
Surface Water (A1)	erequired; che	ck all that apply)	ined Leaves (Bs B)	9) (except MLF	RA 1, 2, 4	Secondary Indic A, Uwater-Staine 4A, and 4	ators (2 or more required ed Leaves (B9) (MLRA 1, IB)
Surface Water (A1) High Water Table (A2) Saturation (A3)	erequired; che	ck all that apply) U Water-Stai and 4 Salt Crust	ined Leaves (Bs B) (B11)	9) (except MLF	RA 1, 2, 4	Secondary Indic A, D Water-Staine 4A, and 4	ators (2 or more required ed Leaves (B9) (MLRA 1, IB) tterns (B10)
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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 Concav Field Observations: Surface Water Present? Ye Saturation	e required; chea I Imagery (B7) ve Surface (B8 es ⊠ es ⊠ am gauge, mo	ck all that apply) Water-Stai and 4I Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp.) No D No D nitoring well, aer a with 6- to 12-ir	ined Leaves (BS B) (B11) vertebrates (B1 Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in Stressed Plant blain in Remarks epth (Inches): epth (Inches): epth (Inches): rial photos, prevent	9) (except MLF 3) i1) ong Living Roo n (C4) Tilled Soils (C6 s (D1) (LRR A s) 6-12 0 vious inspection e Water (A1).	RA 1, 2, 4 ts (C3)	Secondary Indic A, Water-Staine 4A, and A Drainage Pat Dry-Season V Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC Neutral Raised Ant N Frost-Heave Md Hydrology Present? ilable: Stable:	ators (2 or more required ators (2 or more required bd Leaves (B9) (MLRA 1, IB) tterns (B10) Water Table (C2) sible on Aerial Imagery (Position (D2) tard (D3) Test (D5) founds (D6) (LRR A) Hummocks (D7) Yes ⊠ No □
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 Concav Field Observations: Surface Water Present? Ye Saturation	e required; chea I Imagery (B7) ve Surface (B8 es ⊠ es ⊠ am gauge, mo	ck all that apply) Water-Stai and 4I Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp.) No D No D nitoring well, aer a with 6- to 12-ir	ined Leaves (BS B) (B11) vertebrates (B1: Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in Stressed Plant olain in Remarks epth (Inches): epth (Inches): epth (Inches): rial photos, prev nches of Surface	9) (except MLF 3) ong Living Roo 1 (C4) Tilled Soils (C6 s (D1) (LRR A s) 6-12 0 vious inspection e Water (A1).	RA 1, 2, 4 ts (C3)	Secondary Indic A, Water-Staine 4A, and 4 Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC Neutral Raised Ant M Frost-Heave	ators (2 or more required ators (2 or more required ators (B9) (MLRA 1, IB) tterns (B10) Water Table (C2) sible on Aerial Imagery (Position (D2) tard (D3) Test (D5) founds (D6) (LRR A) Hummocks (D7) Yes ⊠ No □
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 Concav Field Observations: Surface Water Present? Ye Saturation Present? Ye Saturation Present? Ye Includes Capillary fringe) Describe Recorded Data (Streat	e required; chea I Imagery (B7) ve Surface (B8 es ⊠ es ⊠ am gauge, mo cated in an area	ck all that apply) Water-Stai and 4I Salt Crust Aquatic Inv Hydrogen Oxidized F Presence G Recent Iro Stunted or Other (Exp.) No D No D No D nitoring well, aer a with 6- to 12-in	ined Leaves (BS B) (B11) vertebrates (B1 Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in Stressed Plant blain in Remarks epth (Inches): epth (Inches): rial photos, prev inches of Surface	9) (except MLF 3) ong Living Roo 1 (C4) Tilled Soils (C6 s (D1) (LRR A s) 6-12 0 vious inspection e Water (A1).	RA 1, 2, 4 ts (C3)	Secondary Indic A, Water-Staine 4A, and A Drainage Pat Dry-Season N Saturation Vi Geomorphic Shallow Aqui FAC Neutral Raised Ant M Frost-Heave	ators (2 or more required ators (2 or more required but Leaves (B9) (MLRA 1, IB) tterns (B10) Water Table (C2) sible on Aerial Imagery (Position (D2) tard (D3) Test (D5) founds (D6) (LRR A) Hummocks (D7) Yes ⊠ No [
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 Concav Field Observations: Surface Water Present? Ya Saturation Present? Ya Saturation Present? Ya Saturation Present? Ya Cincludes Capillary fringe) Describe Recorded Data (Streat Remarks:This test plot was loce	e required; chea I Imagery (B7) ve Surface (B8 es ⊠ es ⊠ am gauge, mo	ck all that apply) Water-Stai and 4I Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp.) No D No D No D nitoring well, aer	ined Leaves (BS B) (B11) vertebrates (B13 Sulfide Odor (C Rhizospheres al of Reduced Iror n Reduction in Stressed Plant blain in Remarks epth (Inches): epth (Inches): rial photos, prev nches of Surface	9) (except MLF 3) ong Living Roo 1 (C4) Tilled Soils (C6 s (D1) (LRR A s) 6-12 0 vious inspection e Water (A1).	RA 1, 2, 4 ts (C3)) Wetla us), if avai	A, Water-Staine 4A, and 4 Drainage Pat Dry-Season V Saturation Vi Geomorphic Shallow Aqui FAC Neutral Raised Ant M Frost-Heave	ators (2 or more required ad Leaves (B9) (MLRA 1, IB) tterns (B10) Water Table (C2) sible on Aerial Imagery (C Position (D2) tard (D3) Test (D5) founds (D6) (LRR A) Hummocks (D7) Yes ⊠ No □

Project/Site: Berwick Creek Flood Reduction & Restoration	City/County: Lewis	Sampling Date: 2-18-20
Applicant/Owner: Port of Chehalis	State: WA	Sampling Point: TP4
Investigator(s): Godinho, S. and McManus, J.	Section, Township, Range:	S10, T 13N, R 2W
Landform (hillslope, terrace, etc.): flood plains, terraces	Local relief: (concave, convex, none): convex Slope (%):0-3%
Subregion (LRR): A Lat: 46.61	937969° Long: -122.9113917°	Datum: NAD83
Soil Map Unit Name: (118) Lacamas silt loam	NWI classifi	cation: none
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes🛛 No🗌 (If no, explair	ı Remarks.)
Are Vegetation, Soil, or Hydrology significantly disturbed?	Are "Normal Circumstand	ces" present? Yes⊠ No⊡
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling point locations, tran	sects, important features, etc.
Hydrophytic Vegetation Present? Yes ⊠ No □ Hydric Soils Present? Yes ⊠ No □ Wetland Hydrology Present? Yes □ No ⊠	Is the Sampled Area within a Wetland?	Yes□ No⊠
Remarks: TP-4 is located in the central portion of Lewis County Ta	ax Parcel 017775001000, within an up	land island of Wetland A. Vegetation in this
test plot consisted entirely of herbaceous species. The hydrophytic	vegetation criterion was met due to 10	00% of the dominant vegetation within the test
plot having either OBL, FACW, or FAC indicator statuses. Additiona	ally, requirements for the hydric soil in	dicator Depleted Matrix (F3) were satisfied,
although there was no evidence of wetland hydrology within this tes	st plot. Given TP-4 did not satisfy all th	ree wetland indicator criteria, it is not
considered to be within a wetland area.		

	Absolute	Dominant	Indicator	Dominance Test Worksheet		
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status			
1.	%			Number of Dominant Species	1	(A)
2.	%			That Are OBL, FACW, or FAC:		
3.	%					
4.	%			Total Number of Dominant	1	(B)
50% = 20% =	%	=Total Cover		Species Across All Strata:		. ,
				Percent of Dominant Species		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 ft.</u> radius)				That Are OBL, FACW, or FAC	<u>100</u>	(A/B)
1	%			Prevalence Index worksheet		
2.	%			Total % Cover of:	Multiply by:	
3.	%			OBL species	x 1=	_
4.	%			FACW species	x 2=	_
5.	%			FAC species	x 3=	_
50% = 20% =	%	=Total Cover		FACU species	x 4=	_
Herb Stratum (Plot size: 5 ft radius)		-		UPL species	x 5=	-
1. Phalaris arundinacea	85%	yes	FACW	Column Totals:	(A)	(B)
2. Cirsium arvense	5%	no	FAC	Prevalence Index =	B/A=	,
3.	%			Hydrophytic Vegetation Indica	ators:	
4.	%			1 – Rapid Test for Hydrop	hvtic Vegetation	
5.	%			2 – Dominance Test is >50	0%	
6.	%			☐ 3 - Prevalence Index is <3	.0 ¹	
7.	%			4 - Morphological Adaptati	ions ¹ (Provide	
8.	%			supporting data in Remark	s or on a separate	9
9.	%			sheet)	•	
10	%	·		5 - Wetland Non-Vascular	Plants ¹	
11.	<u>%</u>					
50% = 45, 20% = 18	90%	=Total Cover		Problematic Hydrophytic \	/egetation ¹ (Explai	n)
Woody Vine Stratum (Plot size: 15 ft radius)					ogetation (Explan	,
1	%			¹ Indicators of hydric soil and we	tland hydrology	
2	%			must be present, unless disturbe	ed or problematic.	
	<u>%</u>	=Total Cover				
50% = 20% =		-		Hydrophytic		
				Vegetation		
				Present?	Yes⊠ No	Г
% Bare Ground in Herb Stratum <u>10%</u>						-
Remarks:The hydrophytic vegetation criterion was m	net due to 100	% of the domination of the dom	ant vegetat	tion within the test plot having eithe	or OBL, FACW, or	FAC
indicator statuses.			-			

SOIL								Sampling Point: <u>TP4</u>
Profile I	Description: (Desc	ribe to the dept	th needed to docu	ment the ind	icator or col	nfirm the	absence of indicators.)	
	-	-						
Depth	Matrix	<u> </u>		Redox Featu	ires		_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/3	100%		%_			loam	
4-16	10YR 5/1	95%	5YR 4/6	<u> </u>	<u> </u>	M	silt loam	See Remarks Below
		<u>%</u>		<u>%</u>				
		<u> </u>						
		<u> </u>						
		<u> </u>		<u> </u>				
		<u> </u>		<u> </u>				
¹ Type [.]	C=Concentration	D=Depletion RI	I=Reduced Matrix	CS=Covered	or Coated S	and Grain	s ² l ocation: Pl =Por	e Lining M=Matrix
Hydric S	Soil Indicators: (A	policable to all	RRs. unless othe	erwise noted)		Indicators for Problema	tic Hydric Soils
☐ Histo	sal (A1)		Sandy Redo	x (S5)	,		\Box 2 cm Muck (A10)	
☐ Histic	Epipedon (A2)		Stripped Ma	trix (S6)			Red Parent Material (TI	F2)
	Histic (A3)			ky Mineral (F1) (except MI	RA 1)	Verv Shallow Dark Surf	ace (TF12)
	ogen Sulfide (A4)			ed Matrix (F2)			Other (Explain in Rema	urks)
	eted Below Dark Si	irface (Δ11)	Depleted M:	atrix (F3)				
	Dark Surface (A12			Surface (E6)			³ Indicators of hydrophytic y	vegetation and
	v Mucky Minorale (-/ ©1)		ounace (10)	7)		Wetland hydrology mus	st be present
	y Nucky Matrix (<u>31)</u>			()		unless disturbed or pro	blematic
	y Gleyed Matrix (S	4)		essions (F8)			F	
Restrict	ive Layer (if prese	ent):						
-								
Type:						Lb.	dria Cail Dreagnt?	
Depth (II	icnes):					Пу	aric Soli Present?	
Remarks	s: Requirements for	r the nyaric soil ir	ndicator Depieted in	hatrix (F3) we	re satisfied d	ue to the p	presence of a soil layer with	h a matrix value of 4 or
more an		1622.						
HYDRO	LOGY							
Matland		4						
wetiand	i Hydrology Indica	itors:						
Primary	Indicators (min. of o	one required; che	eck all that apply)				Secondary Indica	tors (2 or more required)
□ Surfa	ce Water (A1)		Water-Stain	ed Leaves (B) (except M	LRA 1. 2.	4A .	l eaves (B9) (MLRA 1, 2 ,
High	Water Table (A2)		and 4B)) 	, (encept	, _,	4A. and 4	B)
□ Satur	ation (A3)		Salt Crust (F	311)			Drainage Patte	erns (B10)
□ Wate	r Marks (B1)			rtebrates (B1:	3)		Dry-Season W	/ater Table (C2)
	nent Deposits (B2)		Hydrogen S	ulfide Odor (C	1)		Saturation Vis	ible on Aerial Imagery (C9)
	Denosits (B3)			izospheres al	., ang Living Ri	oots (C3)		Position ($D2$)
	Mot or cruct (P4)					5013 (00)		(D2)
				Reduced IIO	r (C4) Tilled Seile ((aid (DS)
		`		Reduction in		-0) •)		
	ce Soll Cracks (Bo)		stressed Plant	s (D1) (LRR	A)		
	lation Visible on Ae	rial Imagery (B7) U Other (Expla	ain in Remarks	5)		L Frost-Heave F	lummocks (D7)
Spars	sely Vegetated Con	icave Surface (B	8)					
Field Ob	oservations:							
Surface	Water Present?	Yes 📋		oth (Inches):		144-4		
Vvater 1	able Present?			oth (Inches):		wet	land Hydrology Present?	
Saturatio	on Present?	res 📋		oth (Inches):				Yes 📋 NO 🖄
Describe	S Capillary Initige)	tream dauge m	onitoring well perio	l photos prev	ious inspecti	one) if av	zailable:	
Describe	e Recolded Data (S	areani yauye, m	ormoring well, aeria	a priotos, prev	ious inspecti	0115 <i>)</i> , 11 av		
Remark	No evidence of w	etland hydrology	indicatore obcorvo	d within this t	et nlot			
T C III ai K					sat plot.			

Project/Site: Berwick Creek Flood Reduction & Resto	ration	City/County: Lewis	Sampl	ing Date: 2-18-20
Applicant/Owner: Port of Chehalis		State: WA	Sampli	ng Point: TP5
Investigator(s): Godinho, S. and McManus, J.		Section, Township, Range:	S10, T 13N, R 2W	
Landform (hillslope, terrace, etc.): flood plains, terrace	s Loca	al relief: (concave, convex, none)	: concave	Slope (%):0-3%
Subregion (LRR): A	Lat: 46.6194413	B1° Long: -122.9113833°	Dat	um: NAD83
Soil Map Unit Name: (118) Lacamas silt loam		NWI classifie	cation: None	
Are climatic / hydrologic conditions on the site typical	or this time of year	? Yes⊠ No⊡ (If no, explain	Remarks.)	
Are Vegetation, Soil, or Hydrology significant	ly disturbed?	Are "Normal Circumstanc	es" present? Yes⊠	No
Are Vegetation, Soil, or Hydrology naturally p	oroblematic?	(If needed, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS – Attach site map	showing samp	oling point locations, trans	sects, important	features, etc.
Hydrophytic Vegetation Present? Yes 🛛 No		a the Sempled Area		
Hydric Soils Present? Yes ⊠ No] [is the Sampleu Area		
Wetland Hydrology Present? Yes X No				

Remarks: TP-5 is located in the western portion of Lewis County Tax Parcel 119480000, within the western portion of Wetland A. Vegetation within this test plot consisted entirely of emergent species. The hydrophytic vegetation criterion was met due to 100% of the dominant vegetation within the test plot having either OBL, FACW, or FAC indicator statuses. Additionally, the hydric soil indicator Depleted Matrix (F3) was observed, along with the following primary wetland hydrology indicators: a High Water Table (A2), Saturation (A3), and a Hydrogen Sulfide Odor (C1). Given TP-5 satisfied all three wetland indicator criteria, it is considered to be within a wetland area.

	Absolute	Dominant	Indicator	Dominance Test Worksheet	
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status		
1.	%			Number of Dominant Species	2 (A)
2.	%			That Are OBL, FACW, or FAC:	、 ,
3.	%				
4	%			Total Number of Dominant	2 (B)
50% = 20% =	%	=Total Cover		Species Across All Strata:	(-/
				Percent of Dominant Species	
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 f</u> t. radius)				That Are OBL, FACW, or FAC	<u>100</u> (A/B)
1	%			Prevalence Index worksheet	
2	%			Total % Cover of:	Multiply by:
3	%			OBL species	x 1=
4	%			FACW species	x 2=
5	%			FAC species	x 3=
50% = 20% =	%	=Total Cover		FACU species	x 4=
<u>Herb Stratum</u> (Plot size: <u>5</u> ft radius)		-		UPL species	x 5=
1. Phalaris arundinacea	80%	yes	FACW	Column Totals:	(A) (B)
2. Hypericum anagalloides	20%	yes	OBL	Prevalence Index =	B/A=
3.	%			Hydrophytic Vegetation Indica	ators:
4.	%			☐ 1 – Rapid Test for Hvdrop	hvtic Vegetation
5.	%			2 – Dominance Test is >5	0%
6.	%			□ 3 - Prevalence Index is <3	3.0 ¹
7.	%	<u></u>		4 - Morphological Adaptat	ions ¹ (Provide
8.	%			supporting data in Remar	ks or on a separate
9	<u>%</u>	·		sheet)	
10	%			5 - Wetland Non-Vascular	Plants ¹
11	%	·			i iunto
50% = 50, 20% = 20	100%	=Total Cover		Problematic Hydrophytic \	(egetation ¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft radius)	100 /0				
1	0/2			¹ Indicators of bydric soil and we	tland hydrology
2	0/2			must be present unless disturb	ad or problematic
Z		-Total Cover			
50% = 20% =	70			Hydrophytic	
				Vogotation	
				Present?	
% Bare Ground in Herb Stratum 0%					
Remarks: The hydrophytic vegetation criterion was m	net due to 100	% of the domina	ant vegetat	ion within the test plot having eithe	er OBL_EACW_or EAC
indicator statuses.			ant rogotat	ien mann ale toet plot having our	

SOIL						c 4		Sampling Point: <u>TP5</u>
Profile De	escription: (Desc	ribe to the dept	h needed to doc	ument the ind	licator or col	nfirm the	e absence of indicators.)	
Depth	Matrix	<u> </u>		Redox Feat	ures			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 3/2	100%	7 5 / 6 5 / 6	%			silty clay loam	
4-16	10YR 5/2	85%	7.5YR 5/8	15%	<u> </u>	Μ	clay	See Remarks Below
		<u> </u>						
		<u> </u>		%				
		<u> </u>		%	·			
		%		%				
¹ Type: 0	C=Concentration,	D=Depletion, RM	I=Reduced Matrix	, CS=Covered	or Coated Sa	and Graii	ns. ² Location: PL=Po	re Lining, M=Matrix
Hydric So	oil Indicators: (A	pplicable to all L	RRs, unless oth	nerwise noted	.)		Indicators for Problema	atic Hydric Soils
Histos	al (A1)		Sandy Rec	lox (S5)			2 cm Muck (A10)	
Histic	Epipedon (A2)		Stripped M	atrix (S6)			Red Parent Material (T	F2)
Black	Histic (A3)		🗌 Loamy Mu	cky Mineral (F´	I) (except MI	_RA 1)	Very Shallow Dark Sur	face (TF12)
🗌 Hydrog	gen Sulfide (A4)		🗌 Loamy Gle	yed Matrix (F2)		Other (Explain in Remaining Content of Co	arks)
Deplet	ed Below Dark Su	ırface (A11)	🛛 Depleted N	latrix (F3)				
Thick I	Dark Surface (A12	2)	🗌 Redox Dar	k Surface (F6)			³ Indicators of hydrophytic	vegetation and
🗌 Sandy	Mucky Minerals (S1)	Depleted D	ark Surface (F	7)		Wetland hydrology mu	st be present,
Sandy	Gleyed Matrix (S4	4)	🗌 Redox Dep	pressions (F8)			unless disturbed or pro	oblematic
Restrictiv	/e Laver (if prese	nt):						
	, (,-						
Туре:								
Depth (ind	ches):					Ну	/dric Soil Present?	Yes⊠ No⊡
Remarks:	Requirements for	the hydric soil in	dicator Depleted	Matrix (F3) we	re satisfied d	ue to the	presence of a soil layer wit	h a matrix value of 4 or
more and	a chroma of 2 or l	less.						
	067							
Wetland	Hydrology Indica	tors:						
Primary Ir	idicators (min. of c	one required; che	eck all that apply)				Secondary Indic	ators (2 or more required)
	e vvater (A1)		U water-Stal	ned Leaves (B	9) (except M	LRA 1, 2		d Leaves (B9) (MLRA 1, 2,
	vater Table (A2)			5)				·B)
⊠ Satura	tion (A3)			(B11)	0)			terns (B10)
	Marks (BT)				3)			
					/) 			Sible on Aenai Imagery (C9)
	eposits (B3)			nizospheres ai		bots $(C3)$		Position (D2)
	/lat or crust (B4)			Reduced Iron	1 (C4) Till I O il (C			
	eposits (B5)			Reduction in	Tilled Solis (C	<i>(</i> 0)		Test (D5)
Surfac	e Soil Cracks (B6))	Stunted or	Stressed Plant	ts (D1) (LRR	A)	Raised Ant M	lounds (D6) (LRR A)
	ition Visible on Ae	rial Imagery (B7)	Other (Exp	lain in Remark	s)		L Frost-Heave	Hummocks (D7)
☐ Sparse	ely Vegetated Con	cave Surface (B	8)					
Field Obs	servations:			anth (last				
Surrace V	vater Present?	res ∐ Vee ⊠		eptn (Inches):	10	14/-	fland Uudualam. Desarrie	
Vvater Tai	Die Present?	Yes 🖂		eptn (Inches):	10	vve	tiand Hydrology Present	
Jacuration	Capillary fringe)	res 🖂		epur (inches).	0			
Describe	Recorded Data (S	tream gauge, mo	onitoring well, aer	ial photos, prev	vious inspecti	ons) if a	vailable:	
December		a oann gaago, me	onitioning tron, doi	iai priotoo, pro		ono), n a		
Remarks:	A Hydrogen Sulfid	le Odor (C1), Sat	turation (A3, and	a High Water 1	Table (A2) we	re obser	ved within this test plot. with	Saturation observed at
the surfac	e, and the water t	able observed at	10 inches of dep	th.	(_,			

20
(%):0-3%
с.
ot consisted
st plot
Given TP-6

	Absolute	Dominant	Indicator	Dominance Test Worksheet		
	% Cover	<u>Species</u> ?	Status	Number of Dominant Species	4	(•)
	10%	yes	FACU	That Are OBL EACW or EAC	((A)
2	<u>%</u>					
3.	<u>%</u>			Total Number of Dominant	0	
4.	<u>%</u>			Species Across All Strata:	((B)
50% = 520% = 2	10%	= Total Cover				
				Percent of Dominant Species		
Sapling/Shrub Stratum (Plot size: <u>15 ft.</u> radius)				That Are OBL, FACW, or FAC	<u>50</u> ((A/B)
1.	%			Prevalence Index worksheet		`
2.	%			Total % Cover of:	Multiply by:	
3.	%	·		OBL species	x 1=	
4.	%			FACW species	x 2=	
5.	%			FAC species	x 3=	
50% = 20% =	%	=Total Cover		FACU species	x 4=	
Herb Stratum (Plot size: <u>5</u> ft radius)		-		UPL species	x 5=	
1. *Poa spp.	80%	yes	FAC	Column Totals:	(A)	(B)
2. Phalaris arundinacea	15%	no	FACW	Prevalence Index = I	B/A=	
3. Vicia americana	5%	no	FAC	Hydrophytic Vegetation Indica	tors:	
4.	%	·		1 – Rapid Test for Hydroph	ytic Vegetation	
5.	%			2 – Dominance Test is >50	%	
6.	%			☐ 3 - Prevalence Index is ≤3.	0 ¹	
7.	%			4 - Morphological Adaptatio	ons ¹ (Provide	
8.	%			supporting data in Remark	s or on a separate	
9.	%			sheet)		
10.	%	·		5 - Wetland Non-Vascular	Plants ¹	
11.	%					
50% = <u>50</u> 20% = <u>20</u>	100%	=Total Cover		Problematic Hydrophytic V	egetation ¹ (Explain))
Woody Vine Stratum (Plot size: <u>15</u> ft radius)		-				
1.	%			¹ Indicators of hydric soil and wet	and hydrology	
2.	%			must be present, unless disturbe	d or problematic.	
50% = 20% =	%	=Total Cover				
		-		Hydrophytic		
				Vegetation		
% Bare Ground in Herb Stratum <u>0%</u>				Present?	Yes⊡ No⊠	
Remarks: The hydrophytic vegetation criterion was no	ot met due to	only 50% of the	dominant	vegetation within the test plot havir	g either OBL, FAC	W,
or FAC indicator statuses.						
*Assumed FAC status						

Prome bescribe to the depth needed to document the indicator or confirm the absence of indicators.) Dapth Matrix Redox Features Codor (most) % Type: Loc2 Texture Remarks D-3 10/178 2/3 10/178 2/3 10/178 2/3 10/178 2/3 Type: Concentration Concentration Deployment to the depth for the start sector 3-16 10/178 2/3 90/94 7.5/17.4/6 1% Concentration Deployment Sector Image: Concentration Deployment Matrix Sector Image: Concentration Deployment Matrix Matrix Sector Image: Concentration Deployment Matrix Sector Image: Concentration Deployment Matrix Sector Image: Concentration Deployment Matrix Sector Image: Concentration Image: Concentration Deployment Matrix Sector Image: Concentration	SOIL		· · · · ·					Sampling Point: <u>TP6</u>
Depth Matrix Redx Features (nches) Color (moist) % Type' Loc' 3-16 10YR 3/3 99% 7.5YR 4/6 1% C 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below	Profile Description: (D	escribe to the dept	h needed to docu	iment the indi	cator or confi	rm the	absence of indicators.)	
(inches) Ools Ools Ools Type Loc ² Texture Remarks 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below 3-16 10YR 3/3 99% 75 %	Depth N	atrix		Redox Featu	res			
0-3 10VR 33 100% T_SVR 4/6 1% C M loam See Remarks Below 3-16 10VR 33 9% 7,5VR 4/6 1% C M loam See Remarks Below 3-16 10VR 33 9% 5% 5% Image: See Remarks Below Image: See Remar	(inches) Color (mois	st) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
3-16 10YR 3/3 99% 7.5YR 4/6 1% C M loam See Remarks Below	0-3 10YR 3/3	100%		%			loam	
Image: state in the state	<u>3-16</u> 10YR 3/3	99%	7.5YR 4/6	1%	C	М	loam	See Remarks Below
Image: Status in the second status in the		<u>%</u>						
Image: Status	·							
Image: Secondary Indicators (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils Histosal (A1) Sandy Redox (S5) Indicators for Problematic Hydric Soils Black Hists (A3) Loarny Mucky Mineral (F1) (accept MLRR 1) Very Shallow Dark Surface (TF12) Black Hists (A3) Loarny Mucky Mineral (F1) (accept MLRR 1) Very Shallow Dark Surface (TF12) Brydrogen Sulfide (A4) Loarny Mucky Mineral (F1) (accept MLRR 1) Other (Explain in Remarks) Begleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Bandy Hidey Matrix (S4) Redox Dark Surface (F6) ³ Indicators of hydrophylic vegetation and wiles disturbed or problematic Sandy Gleeyed Matrix (S4) Redox Dark Surface (F7) Welland hydrology must be present, unless disturbed or problematic Type:		%		<u> </u>				
Type: C=Concentration. D=Depletion. RN=Reduced Matrix, CS=Covered or Coated Sand Grains. *Location: PL=Pore Lining. M=Matrix, Type: Hydric Soil Indicators: Applicable to all LRRs. unless otherwise noted.) Indicators for Problematic Hydric Soils Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) Black Histic (A3) Loarny Glevyd Matrix (S7) Perform Muck (A10) Hydrig Soil Mide (A4) Loarny Glevyd Matrix (F3) Perform Muck (A10) Black Histic (A3) Loarny Glevyd Matrix (F3) Perform Muck (A12) Black Matrix (S4) Depleted Dark Surface (F7) Welland Hydrology must be present. Sandy Mucky Minerals (S1) Depleted Dark Surface (F7) welland Hydrology must be present. Sandy Mucky Minerals (S1) Depleted Dark Surface (F7) welland Hydrology must be present. Bepth (inches): Type: Yes] No[Z] Remarks: No evidence of hydric soil indicators observed within this test plot. Secondary Indicators (2 or more required). Saturation (A3) Saturation (Has Only Core (C1) Secondary Indicators (2 or more required). Saturation (A3) Saturation (Has Only Core (C2) A, and 48) Saturation (A3) Saturation (Has Only Core (C3) Secondary Indicators (2 or more required).		%		%				
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grais		%		%				
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils Histosal (A1) Sandy Redxo; (S5) Indicators for Problematic Hydric Soils Biack Histic Capiedon (A2) Stripped Matrix (S6) Indicators for Problematic Hydric Soils Hydrogen Suffide (A2) Domy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (A11) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Other (Explain in Remarks) Hydrogen Suffide (A4) Loamy Mucky Mineral (F1) Very Shallow Dark Surface (A11) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) ³ Indicators of hydrophytic vegetation and Wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if present): Type:	¹ Type: C=Concentrati	on, D=Depletion, RN	I=Reduced Matrix,	CS=Covered of	or Coated San	d Grain	s. ² Location: PL=Po	re Lining, M=Matrix
□ Histic Epipedon (A2) □ Stripped Matrix (S6) □ 2 cm Muck (A10) □ Histic Epipedon (A2) □ Coamy Mucky Mineral (F1) (except MLRA 1) □ Very Shallow Dark Surface (F12) □ Hydrogen Sufface (A11) □ Depleted Matrix (S6) □ Other (Explain in Remarks) □ Dick Dark Surface (A12) □ Redox Dark Surface (F6) ³Indicators of hydrophytic vegetation and □ Sandy Mucky Minerals (S1) □ Depleted Dark Surface (F7) Wetland hydrology must be present, unless disturbed or problematic □ Sandy Mucky Minerals (S1) □ Depleted Dark Surface (F7) Wetland hydrology number by the present, unless disturbed or problematic □ Sandy Mucky Minerals (S1) □ Depleted Dark Surface (F7) Wetland hydrology number by the present, unless disturbed or problematic ■ Sandy Mucky Minerals (S1) □ Depleted Matrix (S4) ■ Redox Depressions (F8) Wetland Hydrology Indicators: ■ Hydric Soil Present? Yes □ No⊠ Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) ■ A, and 4B □ Saturation (A3) □ Salt Crust (B11) □ Drainage Patterns (B10) □ Drainage Patterns (B10) □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ Drainage Patterns (B10) □ Drainage Patterns (B10) □ Sediment Deposits (B2) □ Oxidized	Hydric Soil Indicators	: (Applicable to all I	RRs, unless oth	erwise noted.)			Indicators for Problema	atic Hydric Soils
□ Inside Epipeon(n(z)) □ Simple Mainx (So) □ Red Patent Material (T2) □ Black Hists (A3) □ Loamy Wlucky Mineral (F1) (except MLRA 1) □ Very Shallow Dark Surface (TF12) □ Hydrogen Suffide (A4) □ Loamy Oleyed Matrix (F2) □ Other (Explain in Remarks) □ Depleted Below Dark Surface (A12) □ Redox Dark Surface (F6) ³ Indicators of hydrophytic vegetation and □ Sandy Cleyed Matrix (S4) □ Redox Dark Surface (F7) Welfand hydrology must be present, □ Sandy Cleyed Matrix (S4) □ Redox Dark Surface (F7) Welfand hydrology must be present, □ Sandy Cleyed Matrix (S4) □ Redox Depressions (F8) Image: Sourface (F7) Pres □ Depleted Matrix (S4) □ Redox Depressions (F8) Image: Sourface (F7) Welfand Hydrology Indicators: □ Pres □ Pres No<	Histosal (A1)		Sandy Redo	ox (S5)			2 cm Muck (A10)	
□ black Histo (A3) □ blam Mucky Mineral (F1) (except MLRA 1) ○ other (Explain in Remarks) □ bepleted Below Dark Surface (A11) □ Depleted Matrix (F2) □ other (Explain in Remarks) □ bepleted Below Dark Surface (A12) □ Depleted Matrix (F2) □ other (Explain in Remarks) □ bandy Mucky Minerals (S1) □ Depleted Dark Surface (F7) Wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if present): Type:				atrix (56)		• •		F2)
□ ydroger Sufface (Af) □ Loarity Gelyed Matuk (P2) □ Unter (Explain in Remarks) □ Depleted Below Dark Surface (A1) □ Depleted Matuk (P2) □ Inick Dark Surface (A1) □ Sandy Mucky Minerals (S1) □ Depleted Matuk (P2) □ Inick Dark Surface (A1) □ Sandy Mucky Minerals (S1) □ Depleted Matuk (P2) □ Inick Dark Surface (F7) Wetland hydrology must be present. unless disturbed or problematic Restrictive Layer (If present): Type:		4)		Ky Mineral (F1)		A 1)	U very Snallow Dark Sur	Tace (TFTZ)
□ bepieted below Dark Surface (n11) □ Depieted Matrix (F3) □ Thick Dark Surface (A11) □ Depieted Dark Surface (F7) □ Sandy Mucky Minerais (S1) □ Depieted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) ■ Sandy Mucky Minerais (S1) □ Depieted Dark Surface (F7) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) ■ Popth (inches): ■ Hydric Soil Present? Yep: □ Depieted Dark Surface (A11) □ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) □ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) □ Surface Water (A1) □ Autric Invertebrates (B13) □ Driv-Season Water Table (C2) □ Surface Water (A1) □ Autaric Invertebrates (B13) □ Dry-Season Water Table (C2) □ Surface Water (A1) □ Autaric Invertebrates (B13) □ Dry-Season Water Table (C2) □ Sutration (A3) □ Salt Crust (B11) □ Drainage Patterns (B10) □ Batter Marks (B1) □ Autriation Visible on Acrial Imagery (C9) □ Chift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) □ Geomorphic Position (D2) □ Ariface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A)	Hydrogen Sullide (A	4) h. Ovurfa a a. (A.1.1)		ed Matrix (F2)				arks)
□ Inick Dark Sufface (A12) □ Redox Dark Sufface (F0) □ Inick Dark Sufface (F1) □ Sandy Mucky Minerals (S1) □ Depleted Dark Sufface (F7) □ Wetland hydrology must be present, unless disturbed or problematic □ Sandy Mucky Minerals (S1) □ Depleted Dark Sufface (F7) □ Wetland hydrology must be present, unless disturbed or problematic □ Sandy Mucky Minerals (S1) □ Depth (inches): Hydric Soil Present? Yes □ No⊠ Permarks: No evidence of hydric soil indicators observed within this test plot. ■ ■ HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) ■ □ Sufface Water (A1) □ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) ■ 4A, and 4B) □ Saturation (A3) □ Sati Crust (B11) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ Dry-Season Water Table (C2) □ Saturation (Visible on Aerial Imagery (C9) □ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) □ Geomphic Position (D2) □ Saturation Visible on Aerial Imagery (C9) □ Jagal Mat or crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitar (D3) □ Frost-Heave Hummocks (D7) □ Satration Visible on Aerial Imagery (B7)		K Surface (A11)		atrix (F3)			31	
□ bitly witcky witterials (S1) □ bepteted Dark Suitabe (Pr) witters (S1) □ Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Image: Sandy Gleyed Matrix (S4) □ Redox Depressions (F8) Type:		(A12)		Surface (F6)	·\		Vetland hydrology mu	vegetation and st be present
□ statudy Geyed Mathx (S4) □ Redox Depressions (P3) Present? Yes No⊠ Present? Yes No⊠ Pepth (inches): Remarks: No evidence of hydric soil indicators observed within this test plot. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) □ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, □ 4A, and 4B) □ Saturation (A3) □ Sati Crust (B11) □ Dry-Season Water Table (C2) □ Saturation (A3) □ Aquatic Invertebrates (B13) □ Dry-Season Water Table (C2) □ Primary Deposits (B2) □ Hydrogen Sulfide Odor (C1) □ Saturation Visible on Aerial Imagery (C9) □ Drift Deposits (B5) □ Recent Iron Reduced Iron (C4) □ Shallow Aquitard (D3) □ Surface Soi Cracks (B6) □ Chuted or Stressed Plants (D1) (LRR A) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) Field Observations: Wetland Hydrology Present? Yes □ No ☑ Depth (Inches): No ☑ Depth (Inches): Wetland Hydrology Present? Yes □ No ☑ Depth (Inches): Yes □ No ☑ Depth (Inches): Yes □ No ☑ @ Includes Capillary fringe) Decth (Inches): Yes □ No ☑		(S1))		unless disturbed or pro	blematic
Restrictive Layer (if present): Type:		(54)		essions (F8)		<u> </u>	I	
Type:	Restrictive Layer (if p	resent):						
Depth (inches): Hydric Soil Present? Yes No Remarks: No evidence of hydric soil indicators observed within this test plot.	Type:							
Remarks: No evidence of hydric soil indicators observed within this test plot. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, 4A, and 4B) High Water Table (A2) and 4B) Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13) Drift Deposits (B2) Hydrogen Sulfide Odor (C1) Algal Mat or crust (B4) Presence of Reduced Iron (C4) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Surface Water Present? Yes No X Depth (Inches): Water Table Present? Yes No X Depth (Inches): Sutartion Present? Yes No X Depth (Inches): Water Table Present? Yes No X Depth (Inches): Undet Present? Yes No X Depth (Inches	Depth (inches):					Hy	dric Soil Present?	Yes⊡ No⊠
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, 4A, and 4B) High Water Table (A2) and 4B Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13) Drift Deposits (B2) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Staluration visible on Aerial Imagery (C9) Algal Mat or crust (B4) Presence of Reduced Iron (C4) In undation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Saturation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) Presence (B8) Wetland Hydrology Present? Yes No 🖾 Depth (Inches): Water Table Present? Yes No 🖄 Depth (Inches): Yes Mater Present? Yes No 🖄 Depth (Inches): Yes Mater Present? Yes No 🖄 Depth (Inches): Yes	Remarks: No evidence	of hydric soil indicate	ors observed withir	n this test plot.				
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, 4A, and 4B) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, 4A, and 4B) High Water Table (A2) and 4B) Drainage Patterns (B10) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Diff Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Solis (C6) FAC Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No X Depth (Inches): Wetland Hydrology Present? Yes No X Depth (Inches): Yes No X Surface Soile Recorded D		-		-				
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Staturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Diff Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Inon Deposits (B5) Recent Iron Reduction in Tilled Solis (C6) FAC Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sysarsely Vegetated Concave Surface (B8) Sturater Present? Yes No M Depth (Inches): Wetland Hydrology Present? Yes No M Depth (Inches): Yes No M Quides Capillary fringe) Depth (Inches): Yes								
Wetland Hydrology Indicators: Primary Indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Saturation (A3) Satt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Dift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Inon Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Systarsely Vegetated Concave Surface (B8) Surface Water Present? Yes No is Depth (Inches): Water Table Present? Yes No is Depth (Inches): Yes Water Table Present? Yes No is Depth (Inches): Yes Mater Table Present? <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
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Primary indicators (min. of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) High Water Table (A2) and 4B) Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13) Drainage Patterns (B10) Drift Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Algal Mat or crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Raised Ant Mounds (D6) (LRR A) Surface Water Present? Yes No Depth (Inches): Wetland Hydrology Present? Yes No Depth (Inches): Yes No Depth (Inches): Water Table Present? Yes No Depth (Inches): Yes Mater Table Present? Yes No Depth (Inches): Yes Mater Table Present? Yes No Depth (Inches): Yes No Depth (Inches): Barriero No Depth (Inches): Yes No Depth (Inches): Yes No Depth (Inches): Barriero Present? Yes No Depth (Inches): Yes No D	Wetland Hydrology In							
□ Surface Water (A1) □ Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) □ Water-Stained Leaves (B9) (MLRA 1, 2, 4A, 4A, and 4B) □ Saturation (A3) □ Salt Crust (B11) □ Drainage Patterns (B10) □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ 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 Aquitard (D3) □ Inon Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) □ Depth (Inches): Wetland Hydrology Present? Yes No ⊠ Depth (Inches): Wetland Hydrology Present? Yes □ No ⊠ Saturation Present? Yes		oi one required; che	eck all that apply)				Secondary Indica	ators (2 or more required)
High Water Table (A2) and 4B) 4A, and 4B) Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) 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 Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) No ⊠ Depth (Inches): Wetland Hydrology Present? Yes No ⊠ Depth (Inches): Yes No ⊠ Yes No ⊠ Saturation Present? Yes No ⊠ Depth (Inches): Yes No ⊠ Wetland Hydrology Present? Yes No ⊠ Pept No ⊠ Deptrib Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes No ⊠	Surface Water (A1)		🗌 Water-Stain	ed Leaves (B9) (except MLR	A 1, 2,	4A, 🗌 Water-Staine	d Leaves (B9) (MLRA 1, 2,
□ Saturation (A3) □ Salt Crust (B11) □ Drainage Patterns (B10) □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ 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 Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ 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): Wetland Hydrology Present? Water Table Present? Yes No ⊠ Depth (Inches): Yes No ⊠ Water Table Present? Yes No ⊠ Depth (Inches): Yes No ⊠ (Includes Capillary fringe) □ Destribe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if avai	High Water Table (A	2)	and 4B)			4A, and 4	B)
□ Water Marks (B1) □ Aquatic Invertebrates (B13) □ 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 Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) ■ Stunted or Depth (Inches): Wetland Hydrology Present? Water Table Present? Yes No ⊠ Depth (Inches): Yes □ No ⊠ Water Table Present? Yes No ⊠ Depth (Inches): Yes □ No ⊠ (Includes Capillary fringe) Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes □ No ⊠	Saturation (A3)		Salt Crust (I	311)			🗌 Drainage Pat	terns (B10)
□ 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 Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ 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): Yes No ⊠ Depth (Inches): Yes No ⊠ Saturation Present? Yes No ⊠ Depth (Inches): Yes No ⊠ Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: If available:	Water Marks (B1)		Aquatic Inve	ertebrates (B13)		Dry-Season V	Vater Table (C2)
□ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) □ Geomorphic Position (D2) □ Algal Mat or crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ Frost-Heave Hummocks (D7) □ Sparsely Vegetated Concave Surface (B8) □ Frost-Heave Hummocks (D7) ■ Field Observations: No ⊠ Depth (Inches): Water Table Present? Yes No ⊠ Depth (Inches): Water Table Present? Yes No ⊠ Depth (Inches): Saturation Present? Yes No ⊠ Depth (Inches): (Includes Capillary fringe) □ Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	Sediment Deposits (B2)	Hydrogen S	ulfide Odor (C1)		Saturation Vis	sible on Aerial Imagery (C9)
□ Algal Mat or crust (B4) □ Presence of Reduced Iron (C4) □ Shallow Aquitard (D3) □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ 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 No Depth (Inches): Wetland Hydrology Present? Saturation Present? Yes No Depth (Inches): Saturation Present? Yes No Depth (Inches): (Includes Capillary fringe) No Depth (Inches): Yes Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes No	Drift Deposits (B3)		Oxidized Rh	nizospheres alo	ng Living Root	is (C3)		Position (D2)
□ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) □ FAC Neutral Test (D5) □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ 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): Wetland Hydrology Present? Saturation Present? Yes No Depth (Inches): Yes No Yes Includes Capillary fringe) □ Depth (Inches): reservations, if available: Yes No No	☐ Algal Mat or crust (B	4)	Presence of	Reduced Iron	(C4)		∐ Shallow Aquit	tard (D3)
□ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ Raised Ant Mounds (D6) (LRR A) □ 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): Wetland Hydrology Present? Water Table Present? Yes □ No ⊠ Depth (Inches): Wetland Hydrology Present? Saturation Present? Yes □ No ⊠ Depth (Inches): Yes □ No ⊠ [Includes Capillary fringe) ■ Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: If available:	☐ Iron Deposits (B5)		Recent Iron	Reduction in T	illed Soils (C6))	☐ FAC Neutral	Test (D5)
□ 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? Yes No ⊠ Depth (Inches): (Includes Capillary fringe) Wetland Hydrology Present? Yes Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes	Surface Soil Cracks	(B6)	Stunted or S	Stressed Plants	(D1) (LRR A)		☐ Raised Ant M	ounds (D6) (LRR A)
□ Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes □ No ⊠ Depth (Inches): Water Table Present? Yes □ No ⊠ Depth (Inches): Saturation Present? Yes □ No ⊠ Depth (Inches): (Includes Capillary fringe) Ves □ No ⊠ Depth (Inches): Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes □	Inundation Visible or	n Aerial Imagery (B7)) U Other (Expl	ain in Remarks)		Frost-Heave I	Hummocks (D7)
Field Observations: Surface Water Present? Yes No Depth (Inches): Wetland Hydrology Present? Water Table Present? Yes No Depth (Inches): Wetland Hydrology Present? Saturation Present? Yes No Depth (Inches): Yes No Saturation Present? Yes No Depth (Inches): Yes No Yes (Includes Capillary fringe) Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes No	Sparsely Vegetated	Concave Surface (B	8)					
Water Table Present? Yes No Depth (Inches): Wetland Hydrology Present? Saturation Present? Yes No Depth (Inches): Yes No Saturation Present? Yes No Depth (Inches): Yes No No (Includes Capillary fringe) Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available: Yes No	Field Observations:			nth (Inchas):				
Saturation Present? Yes No Depth (Inches). Yes Yes No Yes No N	Surface Water Present			ptn (Inches):		Wot	land Hydrology Present?)
(Includes Capillary fringe) Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturation Present?	Yes 🗌		oth (Inches):		wei	and right oldgy Fresent:	Yes 🗌 No 🕅
Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:	(Includes Capillary frinc	e)		(o.,.o.).		Ì		
	Describe Recorded Dat	a (Stream gauge, mo	onitoring well, aeria	al photos, previ	ous inspection	s), if av	ailable:	
		for the literation	5. 15 A	1				
Remarks: No evidence of wetland hydrology indicators observed within this test plot.	Remarks:No evidence	of wetland hydrology	indicators observe	ed within this te	st plot.			

Project/Site: Berwick Creek Flood Reduction & Restoration	City/County: Lewis	Sampling Date: 2-18-20				
Applicant/Owner: Port of Chehalis	State: WA	Sampling Point: TP7				
Investigator(s): Godinho, S. and McManus, J.	Section, Township, Range:	S10, T 13N, R 2W				
Landform (hillslope, terrace, etc.): flood plains, terraces	.ocal relief: (concave, convex, none	e): none Slope (%):0-3%				
Subregion (LRR): A Lat: 46.6197	3785° Long: -122.9110188	Datum: NAD83				
Soil Map Unit Name: (118) Lacamas silt loam	NWI classi	ication: None				
tre climatic / hydrologic conditions on the site typical for this time of year? Yes⊠ No⊡ (If no, explain Remarks.)						
xre Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ⊠ No ☐						
Are Vegetation, Soil, or Hydrology naturally problematic?	(If needed, explain any answe	ers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sa	mpling point locations, trar	sects, important features, etc.				
Hydrophytic Vegetation Present? Yes 🛛 No 🗌	lo the Sompled Area					
Hydric Soils Present? Yes 🗌 No 🖂	is the Sampleu Area					
Wetland Hydrology Present? Yes 🗌 No 🛛						
Remarks: TP-7 is located in the northwest portion of Lewis County T	ax Parcel 017775001000, north of	Wetland A. Vegetation in this test plot consisted				
of trees, scrub-shrub, and herbaceous species. The hydrophytic vege	tation criterion was met due to 67%	of the dominant vegetation within the test plot				
having either OBL, FACW, or FAC indicator statuses. Additionally, no	evidence of hydric soil or wetland	nydrology indicators were observed. Given TP-7				
did not satisfy all three wetland indicator criteria, it is not considered to	be within a wetland area.					

VEGETATION – Use scientific names of plants.

	Absolute	Dominant	Indicator	Dominance Test Worksheet		
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status			
1. Quercus garryana	60%	yes	FACU	Number of Dominant Species	2 (A)	
2.	%			That Are OBL, FACW, or FAC:		
3.	%			1		
4.	%			Total Number of Dominant	3 (B)	
50% = <u>30</u> 20% = <u>12</u>	60%	=Total Cover		Species Across All Strata:	、 ,	
				Percent of Dominant Species		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>15 f</u> t. radius)				That Are OBL, FACW, or FAC	<u>67</u> (A/B)	
1. Cornus sericea	20%	yes	FACW	Prevalence Index worksheet		
2.	%			Total % Cover of:	Multiply by:	
3.	%			OBL species	x 1=	
4.	%			FACW species	x 2=	
5.	%			FAC species	x 3=	
50% = 10 20% = 4	20%	=Total Cover		FACU species	x 4=	
Herb Stratum (Plot size: 5 ft radius)		-		UPL species	x 5=	
1. *Poa spp.	80%	ves	FAC	Column Totals:	(A) (B)	
2. Vicia americana	15%	no	FACW	Prevalence Index =	B/A=	
3. Taraxacum officinale	5%	no	FACU	Hydrophytic Vegetation Indicators:		
4.	%			\Box 1 – Rapid Test for Hydrophytic Vegetation		
5.	%			\boxtimes 2 – Dominance Test is >50)%	
6	%			\square 3 - Prevalence Index is <3	01	
7	%			4 - Morphological Adaptati	ons ¹ (Provide	
8	%			supporting data in Remark	s or on a separate	
9	%			sheet)		
10	<u> </u>			□ 5 - Wetland Non-Vascular	Plants ¹	
11					i lanto	
50% = 50 20% = 20	100%	=Total Cover		Problematic Hydrophytic V	egetation ¹ (Explain)	
Woody Vine Stratum (Plot size: 15 ft radius)		_			o (i)	
1.	%			¹ Indicators of hydric soil and wet	land hydrology	
2.	%			must be present, unless disturbe	ed or problematic.	
50% = 20% =	%	=Total Cover			•	
		-		Hydrophytic		
				Vegetation		
% Dave Crownd in Llark Stratum 00%				Present?	Yes⊠ No⊡	
					0.01 54.011 54.5	
Remarks: The hydrophytic vegetation criterion was m	et due to 67%	% of the dominar	nt vegetatio	on within the test plot having either	OBL, FACW, or FAC	
indicator statuses.						

*Assumed FAC status

SOIL	a a a si sti a su (Da a a					6		Sampling Point: <u>TP7</u>
Profile D	escription: (Desc	ribe to the depth	needed to doc	ument the inc	licator or con	firm the a	absence of indicators.)	
Depth	Matrix	(Redox Feat	ures			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
<u> </u>	10YR 3/3 10VP 3/2	100%		<u> </u>			loam	See Remarks Below
0-10	1011 3/2	<u> </u>		%			IUdili	See Remarks Delow
		<u> </u>		%	·		·	
		%		%				
		%		%				
		%		%				
		<u>%</u>		%_				<u></u>
'lype:	C=Concentration, I	D=Depletion, RM=	Reduced Matrix	(, CS=Covered	l or Coated Sa	nd Grains	S. ² Location: PL=Pore Indianters for Problematic	e Lining, M=Matrix
	sal (A1)		Sandy Red	lox (S5)	-)		$\square 2 \text{ cm Muck (A10)}$	lic Hydric Solis
	Epipedon (A2)		Stripped M	atrix (S6)			Red Parent Material (TF	-2)
☐ Black	Histic (A3)			ckv Mineral (F	1) (except ML	RA 1)	Verv Shallow Dark Surf	ace (TF12)
Hydro	ogen Sulfide (A4)		Loamy Gle	ved Matrix (F2	2)	,	☐ Other (Explain in Rema	rks)
Deple	ted Below Dark Su	rface (A11)	Depleted M	Atrix (F3)	,		_ (1	,
Thick	Dark Surface (A12	2)	☐ Redox Dar	k Surface (F6)			³ Indicators of hydrophytic v	regetation and
Sandy	/ Mucky Minerals (, S1)	Depleted D) ark Surface (F	7)		Wetland hydrology mus	t be present,
Sandy	Gleyed Matrix (S4	4)	Redox Dep	pressions (F8)	,		unless disturbed or prot	olematic
Restricti	ve Laver (if prese	nt):						
		,.						
Type:	. .					l		
Depth (in	iches):					Нус	fric Soil Present?	Yes No
Remarks	: No evidence of h	ydric soli indicator	s observed withi	n this test plot				
HYDRO								
Primary I	ndicators (min. of c	tors:	k all that apply)				Casandan Indiaa	toro (2 or more required)
								lors (2 or more required)
Surfac	ce Water (A1)		∐ Water-Stai	ned Leaves (B	9) (except ML	.RA 1, 2,	4A, ∐ Water-Stained	Leaves (B9) (MLRA 1, 2 ,
	Water Table (A2)			3)				3)
	ation (A3)			(B11)	0)			erns (B10)
	Marks (B1)			ertebrates (B1	3)		Dry-Season w	ater Table (C2)
				Suifide Odor (C	رار ارار	ata (02)		ble on Aerial Imagery (C9)
	Mot or orust (P4)			nizospheres a		ois (C3)		OSILION (DZ)
	Nat of clust (D4)			Reduced IIO	Tilled Seile (C	6)		ard (DS)
	epusits (DD)	1		Stressed Plan		0) N		$P_{\rm D}$
	ation Visible on Ae	rial Imageny (B7)		Julesseu Flan		•)		lummocks (D7)
	alion visible on Ae	cave Surface (B8)			.5)			
Field Ob	servations:		/					
Surface V	Nater Present?	Yes 🗌	No 🖂 🛛 De	epth (Inches):				
Water Ta	ble Present?	Yes 🗌		epth (Inches):		Wetl	and Hydrology Present?	
Saturatio	n Present?	Yes 🗌	No 🖾 🛛 De	epth (Inches):		İ	, .,	Yes 🗌 No 🖂
(Includes	Capillary fringe)							
Describe	Recorded Data (S	tream gauge, mor	nitoring well, aer	ial photos, pre	vious inspectio	ons), if ava	ailable:	
Remarks	No evidence of w	atland hydrology in	dicators observ	ad within this t	est plot			
Tremarks		saanu nyurology li	IGICALOIS ODSELV	ธน พายากา ยากร เ	est piùt.			
L								

Project/Site: Berwick Creek Flood Reduction & Resto	ration City/County: Lewis	Sampling Date: 2-18-20			
Applicant/Owner: Port of Chehalis	State: WA	Sampling Point: TP8			
Investigator(s): Godinho, S. and McManus, J.	Section, Township, Range:	S10, T 13N, R 2W			
Landform (hillslope, terrace, etc.): flood plains, terrace	Local relief: (concave, convex, non	e): <u>concave</u> Slope (%): <u>0-3%</u>			
Subregion (LRR): A	Lat: 46.61962555° Long: -122.9097749	Operation Operation Datum: NAD83			
Soil Map Unit Name: (118) Lacamas silt loam NWI classification: None					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes 🛛 No 🗌 (If no, explain Remarks.)					
Are Vegetation□, Soil□, or Hydrology□ significantly disturbed? Are "Normal Circumstances" present? Yes⊠ No□					
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain any answ	ers in Remarks.)			
SUMMARY OF FINDINGS – Attach site may	> showing sampling point locations, trai	nsects, important features, etc.			
Hydrophytic Vegetation Present? Yes 🛛 No					
Hydric Soils Present? Yes 🛛 No	Is the Sampled Area				
Hydric Soils Present?Yes ⊠NoWetland Hydrology Present?Yes ⊠No	within a Wetland?	Yes No			
Hydric Soils Present? Yes ⊠ No Wetland Hydrology Present? Yes ⊠ No Remarks: TP-8 is located in the northern portion of L	ewis County Tax Parcel 119480000, within the no	Yes⊠ No⊡ rthern portion Wetland A. Vegetation within this			
Hydric Soils Present? Yes ⊠ No Wetland Hydrology Present? Yes ⊠ No Remarks: TP-8 is located in the northern portion of L test plot consisted of trees, scrub-shrub, and emerger	ewis County Tax Parcel 119480000, within the no ts species. The hydrophytic vegetation criterion wa	Yes⊠ No□ rthern portion Wetland A. Vegetation within this s met due to 100% of the dominant vegetation			
Hydric Soils Present? Yes ⊠ No Wetland Hydrology Present? Yes ⊠ No Remarks: TP-8 is located in the northern portion of L test plot consisted of trees, scrub-shrub, and emerger within the test plot having either OBL, FACW, or FAC	ewis County Tax Parcel 119480000, within the no it species. The hydrophytic vegetation criterion wa indicator statuses. Additionally, the hydric soil indi	Yes⊠ No⊡ In them portion Wetland A. Vegetation within this is met due to 100% of the dominant vegetation cator Redox Dark Surface (F6) was observed,			
Hydric Soils Present? Yes ⊠ No Wetland Hydrology Present? Yes ⊠ No Remarks: TP-8 is located in the northern portion of L test plot consisted of trees, scrub-shrub, and emerger within the test plot having either OBL, FACW, or FAC along with the following primary wetland hydrology indication	ewis County Tax Parcel 119480000, within the no it species. The hydrophytic vegetation criterion wa indicator statuses. Additionally, the hydric soil indi licator Surface Water (A1). Given TP-8 satisfied al	Yes⊠ No⊡ withern portion Wetland A. Vegetation within this is met due to 100% of the dominant vegetation cator Redox Dark Surface (F6) was observed, I three wetland indicator criteria, it is considered			

	Absolute	Dominant	Indicator	Dominance Test Worksheet	· · ·
<u>Tree Stratum</u> (Plot size: <u>30</u> ft radius)	% Cover	Species?	Status		
1. Fraxinus latifolia	15%	yes	FACW	Number of Dominant Species	2 (A)
2.	%			That Are OBL, FACW, or FAC:	、 、 、
3.	%			1	
4.	%			Total Number of Dominant	2 (B)
50% = <u>7.5</u> 20% = <u>3</u>	15%	=Total Cover		Species Across All Strata:	()
				Percent of Dominant Species	
Sapling/Shrub Stratum (Plot size: 15 ft. radius)				That Are OBL, FACW, or FAC	100 (A/B)
1. Rubus armeniacus	10%	yes	FAC	Prevalence Index worksheet	
2.	%			Total % Cover of:	Multiply by:
3.	%			OBL species	x 1=
4.	%			FACW species	x 2=
5.	%			FAC species	x 3=
50% = 50 20% = 20	10%	=Total Cover		FACU species	x 4=
Herb Stratum (Plot size: 5 ft radius)		_		UPL species	x 5=
1. Phalaris arundinacea	100%	ves	FACW	Column Totals:	(A) (B)
2.	%		-	Prevalence Index =	B/A=
3.	%			Hydrophytic Vegetation Indica	tors:
4.	%			☐ 1 – Rapid Test for Hydroph	nvtic Vegetation
5	%			$\boxed{\times}$ 2 – Dominance Test is >50)%
6	%			\square 3 - Prevalence Index is <3	0 ¹
7.	%			4 - Morphological Adaptati	ons ¹ (Provide
8	%			supporting data in Remark	s or on a separate
9	%			sheet)	
10	%			5 - Wetland Non-Vascular	Plants ¹
11	<u> </u>				
$50\% = 50 \ 20\% = 20$	100%	=Total Cover		Problematic Hydrophytic V	egetation ¹ (Explain)
<u>Woody Vine Stratum</u> (Plot size: <u>15</u> ft radius)					
1	%			¹ Indicators of hydric soil and wet	land hydrology
2	%			must be present, unless disturbe	ed or problematic.
50% = 20% =	%	=Total Cover		l hadron ha dia	
				Hydrophytic	
				Vegetation Present2	
% Bare Ground in Herb Stratum 0%				Fresent?	
Remarks: The hydrophytic vegetation criterion was m	et due to 100	% of the domination	ant vegetat	ion within the test plot having eithe	r OBL, FACW, or FAC
indicator statuses.			-		

Profile Description: (Descri	be to the dept	h needed to docu	ment the ind	icator or conf	firm the abs	ence of indicators.)	
Depth Matrix			Redox Feat	ures			
(inches) Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16 10YR 3/2	98%	5YR 4/6	2%	C	М	silty clay loam	See Remarks Below
	<u>%</u>		%				
	<u> </u>						·
·	<u> </u>		<u> </u>				
	<u> </u>		<u> </u>				·
· · ·	<u> </u>		<u> </u>				·
· · · ·	<u> </u>		<u> </u>				·
¹ Type: C=Concentration. D	=Depletion. RM	I=Reduced Matrix.	CS=Covered	or Coated Sar	nd Grains.	² Location: PL=Por	e Lining. M=Matrix
Hydric Soil Indicators: (App	licable to all L	RRs, unless othe	rwise noted.	.)	In	dicators for Problema	tic Hydric Soils
🗌 Histosal (A1)		Sandy Redo	x (S5)			2 cm Muck (A10)	
Histic Epipedon (A2)		Stripped Mat	trix (S6)			Red Parent Material (T	F2)
Black Histic (A3)		🗌 Loamy Muck	xy Mineral (F1) (except MLF	RA 1) 🗌 🗌	Very Shallow Dark Surf	ace (TF12)
Hydrogen Sulfide (A4)		🗌 Loamy Gleye	ed Matrix (F2)		Other (Explain in Rema	irks)
Depleted Below Dark Sur	ace (A11)	Depleted Ma	atrix (F3)				
Thick Dark Surface (A12)		🛛 Redox Dark	Surface (F6)		³ Inc	licators of hydrophytic v	egetation and
Sandy Mucky Minerals (S	1)	Depleted Da	rk Surface (F	7)		Wetland hydrology mus	st be present,
Sandy Gleyed Matrix (S4)		Redox Depres	essions (F8)			unless disturbed or pro	blematic
Restrictive Layer (if presen	t):						
_							
Type:					Undrig	Sail Dracant?	
Deptil (linches).				· · · ·	Hyuric	Soli Present?	
Remarks: Requirements for t	ne nyaric soli ir	Idicator Redox Dari	K Sufface (F6) were satisfie	d within this	test plot due to the pre-	sence of a soil layer with a
matrix value of 5 of less and						alloris occurring as so	it masses of pore innings.
HYDROLOGY							
Wetland Hydrology Indicate	ors:						
Primary Indicators (min. of or	ie required; che	eck all that apply)				Secondary Indica	tors (2 or more required)
Surface Water (A1)		U Water-Staine	ed Leaves (B	9) (except ML	RA 1, 2, 4A,	Water-Stained	Leaves (B9) (MLRA 1, 2,
High Water Table (A2)		and 4B)	,			4A, and 4	B)
Saturation (A3)		Salt Crust (B	311)			Drainage Patt	erns (B10)
☐ Water Marks (B1)		Aquatic Inve	rtebrates (B1	3)		Dry-Season W	/ater Table (C2)
Sediment Deposits (B2)		Hvdrogen Su	ulfide Odor (C	:1)		Saturation Vis	ible on Aerial Imagery (C9)
Drift Deposits (B3)		Oxidized Rhi	izospheres al	, ona Livina Roc	ots (C3)	Geomorphic F	Position (D2)
\square Algal Mat or crust (B4)		Presence of	Reduced Iror	n (C4)		Shallow Aquit	ard (D3)
\Box Iron Deposits (B5)		Recent Iron I	Reduction in	Tilled Soils (Cf	5)	FAC Neutral 1	est (D5)
\Box Surface Soil Cracks (B6)		Stunted or S	tressed Plant	s (D1) (I RR Δ		Raised Ant Me	punds (D6) (I RR Δ)
Inundation Visible on Aeri	al Imagery (R7)	Other (Expla	in in Remark	s)	'		lummocks (D7)
Sparsely Vegetated Conc	ave Surface (B	8)		-,			
Field Observations:		~/					
Surface Water Present?	Yes 🛛	No 🗌 🛛 Den	oth (Inches):	1-2			
Water Table Present?	Yes 🗹	No 🗌 🛛 Dep	oth (Inches):	0	Wetland	Hydrology Present?	
Saturation Present?	Yes 🛛	No 🗌 🛛 Dep	oth (Inches):	0			Yes 🖂 No 🗌
(Includes Capillary fringe)							
Describe Recorded Data (Str	eam gauge, mo	onitoring well, aeria	l photos, prev	ious inspection	ns), if availal	ble:	
L Romarke: I his tost plot was k							
Remarks. This lest plot was it	ocated in an are	ea with 1- to 2-inche	es of surface	water.			
Remarks. This lest plot was it	ocated in an are	ea with 1- to 2-inche	es of surface	water.			
Remarks. This lest plot was it	ocated in an are	ea with 1- to 2-inche	es of surface	water.			
remarks. This lest plot was it	ocated in an are	a with 1- to 2-inche	es of surface	water.			
remarks. This lest plot was it	ocated in an are	ea with 1- to 2-inche	es of surface	water.			

Appendix B | Western Washington Wetland Rating

RATING SUMMARY – Western Washington

Name of wetland (or ID #): Wetland A Date of site visit: 3-25-2019

 Rated by _M. McGrath Trained by Ecology? Yes_X_ No____ Date of training 3-2019

 HGM Class used for rating____ Riverine

 Wetland has multiple HGM classes? X_Y___N

NOTE: Form is not complete without the figures requested (figures can be combined). Source of base aerial photo/map <u>Google Earth</u>

Circle the appropriate ratings

ь н М

Н

Н

L

L

TOTAL

21

M (L)

M

5

OVERALL WETLAND CATEGORY _____ (based on functions <u>X</u> or special characteristics ___)

1. Category of wetland based on FUNCTIONS

Water Quality

H (M) L

8

L H

L

H M

H M

Site Potential

Score Based on

Value

Ratings

Landscape Potential

FUNCT	TION	Improving	Hydrologic	Habitat			
Category IV – Total score = 9 – 15							
	Category III – Total score = 16 – 19						
	X Category II – Total score = 20 – 22						
	Category I – Total score = 23 – 27						

H M

H

M L

M L

8

Score for each function based on three ratings (order of ratings is not important)
9 = Н Н Н
9 – L L M
о – п,п,ічі
7 = H,H,L
7 = H,M,M
6 = H,M,L
6 = M,M,M
5 = H,L,L
5 = M,M,L
4 = M,L,L
3 = L,L,L

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATE	GORY
Estuarine	Ι	II
Wetland of High Conservation Value	I	
Bog	I	
Mature Forest	I	
Old Growth Forest		I
Coastal Lagoon	Ι	II
Interdunal	III	III IV
None of the above	N	/A

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1

Wetland name or number Wetland A

Maps and figures required to answer questions correctly for Western Washington

Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	D 1.3, H 1.1, H 1.4	
Hydroperiods	D 1.4, H 1.2	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	D 2.2, D 5.2	
Map of the contributing basin	D 4.3, D 5.3	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	D 3.1, D 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	D 3.3	

<u>Riverine Wetlands</u> Figures to be prepared after pre-application meeting.

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	8
Hydroperiods	H 1.2	8
Ponded depressions	R 1.1	8
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	8
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	8
Width of unit vs. width of stream (can be added to another figure)	R 4.1	8
Map of the contributing basin	R 2.2, R 2.3, R 5.2	10
1 km Polygon: Area that extends 1 km from entire wetland edge - including polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	9
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	11
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	R 3.2, R 3.3	11

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	L 1.1, L 4.1, H 1.1, H 1.4	
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	
Boundary of area within 150 ft of the wetland (can be added to another figure)	L 2.2	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	L 3.1, L 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes	H 1.1, H 1.4	
Hydroperiods	H 1.2	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants	S 4.1	
(can be added to figure above)		
Boundary of 150 ft buffer (can be added to another figure)	S 2.1, S 5.1	
1 km Polygon: Area that extends 1 km from entire wetland edge - including	H 2.1, H 2.2, H 2.3	
polygons for accessible habitat and undisturbed habitat		
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	S 3.1, S 3.2	
Screen capture of list of TMDLs for WRIA in which unit is found (from web)	S 3.3	

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HGM Classification of Wetlands in Western Washington

For questions 1-7, the criteria described must apply to the entire unit being rated.

If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-7 apply, and go to Question 8.

1. Are the water levels in the entire unit usually controlled by tides except during floods?

NO - go to 2

YES - the wetland class is Tidal Fringe - go to 1.1

1.1 Is the salinity of the water during periods of annual low flow below 0.5 ppt (parts per thousand)?

NO - Saltwater Tidal Fringe (Estuarine) YES - Freshwater Tidal Fringe If your wetland can be classified as a Freshwater Tidal Fringe use the forms for **Riverine** wetlands. If it is Saltwater Tidal Fringe it is an **Estuarine** wetland and is not scored. This method **cannot** be used to score functions for estuarine wetlands.

2. The entire wetland unit is flat and precipitation is the only source (>90%) of water to it. Groundwater and surface water runoff are NOT sources of water to the unit.

NO go to 3 YES - The wetland class is Flats If your wetland can be classified as a Flats wetland, use the form for **Depressional** wetlands.

- 3. Does the entire wetland unit **meet all** of the following criteria?
 - ___The vegetated part of the wetland is on the shores of a body of permanent open water (without any plants on the surface at any time of the year) at least 20 ac (8 ha) in size: At least 30% of the open water area is deeper than 6.6 ft (2 m).

NO go to 4

YES - The wetland class is Lake Fringe (Lacustrine Fringe)

- 4. Does the entire wetland unit **meet all** of the following criteria?
 - <u>X</u> The wetland is on a slope (*slope can be verv aradual*).
 - X The water flows through the wetland in one direction (unidirectional) and usually comes from seeps. It may flow subsurface, as sheetflow, or in a swale without distinct banks.
 - X The water leaves the wetland without being impounded.

NO - go to 5

(YES -) The wetland class is Slope

NOTE: Surface water does not pond in these type of wetlands except occasionally in very small and shallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 ft deep).

- 5. Does the entire wetland unit **meet all** of the following criteria?
 - <u>X</u> The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river,
 - X The overbank flooding occurs at least once every 2 years.

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3



NOTE: The Riverine unit can contain depressions that are filled with water when the river is not

6. Is the entire wetland unit in a topographic depression in which water ponds, or is saturated to the surface, at some time during the year? This means that any outlet, if present, is higher than the interior of the wetland.

NO go to 7

NO - go to 6

flooding

YES - The wetland class is Depressional

7. Is the entire wetland unit located in a very flat area with no obvious depression and no overbank flooding? The unit does not pond surface water more than a few inches. The unit seems to be maintained by high groundwater in the area. The wetland may be ditched, but has no obvious natural outlet.



YES - The wetland class is Depressional

8. Your wetland unit seems to be difficult to classify and probably contains several different HGM classes. For example, seeps at the base of a slope may grade into a riverine floodplain, or a small stream within a Depressional wetland has a zone of flooding along its sides. GO BACK AND IDENTIFY WHICH OF THE HYDROLOGIC REGIMES DESCRIBED IN OUESTIONS 1-7 APPLY TO DIFFERENT AREAS IN THE UNIT (make a rough sketch to help you decide). Use the following table to identify the appropriate class to use for the rating system if you have several HGM classes present within the wetland unit being scored.

NOTE: Use this table only if the class that is recommended in the second column represents 10% or more of the total area of the wetland unit being rated. If the area of the HGM class listed in column 2 is less than 10% of the unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit	HGM class to
being rated	use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine along stream	Depressional
within boundary of depression	
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine
Salt Water Tidal Fringe and any other	Treat as
class of freshwater wetland	ESTUARINE

If you are still unable to determine which of the above criteria apply to your wetland, or if you have more than 2 HGM classes within a wetland boundary, classify the wetland as Depressional for the rating.

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RIVERINE AND FRESHWATER TIDAL FRINGE WETLAN	<u>NDS</u>	
Water Quality Functions - Indicators that the site functions to improve	water quality	
R 1.0. Does the site have the potential to improve water quality?		
R 1.1. Area of surface depressions within the Riverine wetland that can trap sediments during a floor	ling event:	
Depressions cover $>^{3}/_{4}$ area of wetland	points = 8	
Depressions cover > ½ area of wetland	points = 4	4
Depressions present but cover < ½ area of wetland	points = 2	
No depressions present	points = 0	
R 1.2. Structure of plants in the wetland (areas with >90% cover at person height, not Cowardin class	ses)	
Trees or shrubs $> 2/3$ area of the wetland	points = 8	
Trees or shrubs $> \frac{1}{3}$ area of the wetland	points = 6	-
Herbaceous plants (> 6 in high) $>^{2}/_{3}$ area of the wetland	points = 6	6
Herbaceous plants (> 6 in high) > $^{1}/_{3}$ area of the wetland	points = 3	
Trees, shrubs, and ungrazed herbaceous < 1 / $_{3}$ area of the wetland	points = 0	
Total for R 1 Add the points in the boxes above		10
Rating of Site Potential If score is: 12-16 = H X 6-11 = M 0-5 = L Re	cord the rating on th	he first page

Rating of Landscape Potential If score is: X 3-6 = H 1 or 2 = M 0 = L Record the rating on the	e first page
Total for R 2 Add the points in the boxes above	6
R 2.5. Are there other sources of pollutants coming into the wetland that are not listed in questions R 2.1-R 2.4 Other sources Likely pollutants from surface water from human activities entering wetland Yes = 1 No = 0	
R 2.4. Is > 10% of the area within 150 ft of the wetland in land uses that generate pollutants? Yes = 1 No = 0	1
R 2.3. Does at least 10% of the contributing basin contain tilled fields, pastures, or forests that have been clearcut within the last 5 years? Yes = 1 No = 0	1
R 2.2. Does the contributing basin to the wetland include a UGA or incorporated area? Yes = 1 No = 0	1
R 2.1. Is the wetland within an incorporated city or within its UGA? Yes = 2 No = 0	2
R 2.0. Does the landscape have the potential to support the water quality function of the site?	

R 3.0. Is the water quality improvement provided by the site valuable to society?	
R 3.1. Is the wetland along a stream or river that is on the 303(d) list or on a tributary that drains to one within 1 mi? Yes = 1 No = 0	0
R 3.2. Is the wetland along a stream or river that has TMDL limits for nutrients, toxics, or pathogens? Yes = 1 No = 0	1
R 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality? (answer YES if there is a TMDL for the drainage in which the unit is found) Yes = 2 No = 0	2
Total for R 3 Add the points in the boxes above	3
Rating of Value If score is: X 2-4 = H 1 = M 0 = L Record the rating on th	e first page

Wetland name or number Wetland A

RIVERINE AND FRESHWATER TIDAL FRINGE WETLANDS		
Hydrologic Functions - Indicators that site functions to reduce flooding and stream erosion		
R 4.0. Does the site have the potential to reduce flooding and erosion?		
R 4.1. Characteristics of the overbank storage the wetland provides:		
Estimate the average width of the wetland perpendicular to the direction of the flow and the width of the		
stream or river channel (distance between banks). Calculate the ratio: (average width of wetland)/(average width of stream between banks). 333 ft / 9.7 ft = 34		
If the ratio is more than 20 points = 9	9	
If the ratio is 10-20 points = 6		
If the ratio is 5-<10 points = 4		
If the ratio is 1-<5 points = 2		
If the ratio is < 1 points = 1		
R 4.2. Characteristics of plants that slow down water velocities during floods: Treat large woody debris as forest or		
shrub. Choose the points appropriate for the best description (polygons need to have >90% cover at person		
height. These are <u>NOT Cowardin classes</u>)	7	
Forest or shrub for $>^{1}/_{3}$ area OR emergent plants $>^{2}/_{3}$ area points $= 7$	/	
Forest or shrub for $> \frac{1}{10}$ area ΘR emergent plants $> \frac{1}{3}$ area points = 4		
Plants do not meet above criteria points = 0		
Total for R 4 Add the points in the boxes above	16	
Rating of Site Potential If score is: X 12-16 = H6-11 = M0-5 = L Record the rating on the first page		
R 5.0. Does the landscape have the potential to support the hydrologic functions of the site?		

R 5.0. Does the landscape have the potential to support the hydrologic f	functions of the site?	
R 5.1. Is the stream or river adjacent to the wetland downcut?	Yes = 0 No = 1	0
R 5.2. Does the up-gradient watershed include a UGA or incorporated area?	Yes = 1 No = 0	1
R 5.3. Is the up-gradient stream or river controlled by dams?	Yes = 0 No = 1	1
Total for R 5	Add the points in the boxes above	2
Deting of Londonne Detential If convints 2 - U. V. 1 or 2 - M. 0 - L	Becould be wating on th	a first same

Rating of Landscape Potential If score is: 3 = H X 1 or 2 = M 0 = L

Record the rating on the first page

R 6.0. Are the hydrologic functions provided by the site valuable to society?	
R 6.1. Distance to the nearest areas downstream that have flooding problems? Choose the description that best fits the site. The sub-basin immediately down-gradient of the wetland has flooding problems that result in damage to human or natural resources (e.g., houses or salmon redds) Surface flooding problems are in a sub-basin farther down-gradient No flooding problems anywhere downstream	2
R 6.2. Has the site been identified as important for flood storage or flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for R 6 Add the points in the boxes above	2
Rating of Value If score is: X 2-4 = H 1 = M 0 = L Record the rating on t	he first page

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These questions apply to wetlands of all HGM classes	
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	
H 1.0. Does the site have the potential to provide habitat?	
H 1.1. Structure of plant community: Indicators are Cowardin classes and strata within the Forested class. Check the Cowardin plant classes in the wetland. Up to 10 patches may be combined for each class to meet the threshold of % ac or more than 10% of the unit if it is smaller than 2.5 ac. Add the number of structures checked. Aquatic bed 4 structures or more: points = 4 Emergent 3 structures: points = 2 Scrub-shrub (areas where shrubs have > 30% cover) 2 structures: points = 1 Forested (areas where trees have > 30% cover) 1 structure: points = 0 If the unit has a Forested class, check if: The Forested class has 3 out of 5 strata (canopy, sub-canopy, shrubs, herbaceous, moss/ground-cover) that each cover 20% within the Forested polygon	1
H 1.2. Hydroperiods Check the types of water regimes (hydroperiods) present within the wetland. The water regime has to cover more than 10% of the wetland or ¼ ac to count (<i>see text for descriptions of hydroperiods</i>). Permanently flooded or inundated 4 or more types present: points = 3 X Seasonally flooded or inundated 2 types present: points = 1 Saturated only 1 type present: points = 0 X Permanently flowing stream or river in, or adjacent to, the wetland (Berwick Creek) X Seasonally flowing stream in, or adjacent to, the wetland (Ditch A) Lake Fringe wetland 2 points Freshwater tidal wetland 2 points	2
H 1.3. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft ² . Different patches of the same species can be combined to meet the size threshold and you do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Canadian thistle If you counted: > 19 species 5 - 19 species Not a lot of species diversity <pre></pre>	1
H 1.4. Interspersion of habitats Decide from the diagrams below whether interspersion among Cowardin plants classes (described in H 1.1), or the classes and unvegetated areas (can include open water or mudflats) is high, moderate, low, or none. <i>If you have four or more plant classes or three classes and open water, the rating is always high.</i> None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row	1

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Wetland name or number Wetland A

H 1.5. Special habitat features:	
Check the habitat features that are present in the wetland. <i>The number of checks is the number of points.</i>	
Large, downed, woody debris within the wetland (> 4 in diameter and 6 ft long).	
Standing snags (dbh > 4 in) within the wetland	
Undercut banks are present for at least 6.6 ft (2 m) and/or overhanging plants extends at least 3.3 ft (1 m)	
over a stream (or ditch) in, or contiguous with the wetland, for at least 33 ft (10 m)	
X stable steep banks of fine material that might he used by beaver or muskrat for denning (> 30 degree	2
sloner OR signs of recent beaver activity are present (cut shrubs) trees that have not yet weathered	
where wood is exposed)	
X At least ¼ ac of thin-stemmed persistent plants 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 every stratum of plants (see H 1.1 for list of	
strata)	
Total for H 1 Add the points in the boxes above	7
Rating of Site Potential If score is: 15-18 = H X 7-14 = M 0-6 = L Record the rating on t	he first page
H 2.0. Does the landscape have the potential to support the habitat functions of the site?	
H 2.1. Accessible habitat (include only habitat that directly abuts wetland unit).	
Calculate: % undisturbed habitat 0% + [(5.5% moderate and low intensity land uses)/2] 2.75% = 2.75%	
If total accessible habitat is:	
> ¹ / ₃ (33.3%) of 1 km Polygon points = 3	0
20-33% of 1 km Polygon points = 2	
10-19% of 1 km Polygon points = 1	
< 10% of 1 km Polygon points = 0	
H 2.2. Undisturbed habitat in 1 km Polygon around the wetland.	
Calculate:% undisturbed habitat 0% + 11.3% + [(5.5% +25.1% moderate/low intensity land uses)/2] = 26.6%	
Undisturbed habitat > 50% of Polygon points = 3	4
Undisturbed habitat 10-50% and in 1-3 patches points = 2	T
Undisturbed habitat 10-50% and > 3 patches points = 1	
Undisturbed habitat < 10% of 1 km Polygon points = 0	
H 2.3. Land use intensity in 1 km Polygon: If	
> 50% of 1 km Polygon is high intensity land use points = (- 2)	-2
≤ 50% of 1 km Polygon is high intensity points = 0	
Total for H 2 Add the points in the boxes above	< 1
Rating of Landscape Potential If score is:4-6 = H1-3 = MX < 1 = L Record the rating on the	he first page

H 3.0. Is the habitat provided by the site valuable to society?	
H 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose only the highest score that applies to the wetland being rated.	
Site meets ANY of the following criteria: points = 2	
 It has 3 or more priority habitats within 100 m (see next page) It provides habitat for Threatened or Endangered species (any plant or animal on the state or federal lists) It is mapped as a location for an individual WDFW priority species It is a Wetland of High Conservation Value as determined by the Department of Natural Resources It has been categorized as an important habitat site in a local or regional comprehensive plan, in a shoreline Master Plan, or in a watershed plan Site does not meet any of the criteria above 	1

Rating of Value If score is: 2 = H X 1 = M 0 = L Record the rating on the first page Wetland Rating System for Western WA: 2014 Update Rating Form – Effective January 1, 2015 8

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in this row

are **HIGH** = 3points

WDFW Priority Habitats

<u>Priority habitats listed by WDFW</u> (see complete descriptions of WDFW priority habitats, and the counties in which they can be found, in: Washington Department of Fish and Wildlife. 2008. Priority Habitat and Species List. Olympia, Washington. 177 pp. http://wdfw.wa.gov/conservation/0165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

Count how many of the following priority habitats are within 330 ft (100 m) of the wetland unit: **NOTE:** This question is independent of the land use between the wetland unit and the priority habitat.

Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

- 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*).
- Herbaceous Balds: Variable size patches of grass and forbs on shallow soils over bedrock.
- Old-growth/Mature forests: <u>Old-growth west of Cascade crest</u> Stands of at least 2 tree species, forming a multi-layered canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) > 32 in (81 cm) dbh or > 200 years of age. <u>Mature forests</u> Stands with average diameters exceeding 21 in (53 cm) dbh; crown cover may be less than 100%; decay, decadence, numbers of snags, and quantity of large downed material is generally less than that found in old-growth; 80-200 years of the Cascade crest.

__Oregon White Oak: Woodland 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 – see web link above*).

✓ Riparian: 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 – see web link above*).

√ **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 – see web link on previous page).

Caves: A naturally occurring cavity, recess, void, or system of interconnected passages under the earth in soils, rock, ice, or other geological formations and is large enough to contain a human.

- ____Cliffs: Greater than 25 ft (7.6 m) high and occurring below 5000 ft elevation.
- Talus: Homogenous areas of rock rubble ranging in average size 0.5 6.5 ft (0.15 2.0 m), composed of basalt, andesite, and/or sedimentary rock, including riprap slides and mine tailings. May be associated with cliffs.
- Snags and Logs: Trees are considered snags if they are dead or dying and exhibit sufficient decay characteristics to enable cavity excavation/use by wildlife. Priority snags have a diameter at breast height of > 20 in (51 cm) in western Washington and are > 6.5 ft (2 m) in height. Priority logs are > 12 in (30 cm) in diameter at the largest end, and > 20 ft (6 m) long.

Note: All vegetated wetlands are by definition a priority habitat but are not included in this list because they are addressed elsewhere.

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Wetland name or number Wetland A

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Wetland Type	Category
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met	
SC 1.0. Estuarine wetlands	
Does the wetland meet the following criteria for Estuarine wetlands?	
— The dominant water regime is tidal,	
— Vegetated, and	
— With a salinity greater than 0.5 ppt Yes –Go to SC 1.1 (No= Not an estuarine wetland	
SC 1.1. Is the wetland within a National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area	
Preserve, State Park or Educational, Environmental, or Scientific Reserve designated under WAC 332-30-151?	Cat I
Yes = Category I No - Go to SC 1.2	Cal. I
SC 1.2. Is the wetland unit at least 1 ac in size and meets at least two of the following three conditions?	
— The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing, and has less	Cat I
than 10% cover of non-native plant species. (If non-native species are <i>Spartina</i> , see page 25)	Catin
— At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- merced grazeland	
IIIUWEU grassianu. — The wetland has at least two of the following features: tidal channels, depressions with open water, or	Cat. II
contiguous freshwater wetlands. Yes = Category I No = Category I	
SC 2.0. Wetlands of High Conservation Value (WHCV)	
SC 2.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High	Cat. I
Conservation Valuer SC 2.2.1 is the workland listed on the WDNR database as a Wathand of High Conservation Value2	
Yes = Category I No = Not a WHCV	
SC 2.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?	
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf	
Yes – Contact WNHP/WDNR and go to SC 2.4 (No =) tot a WHCV	
SC 2.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and listed it on	
their website? Yes = Category I No = Not a WHCV	
SC 3.0. Bogs	
Does the wetland (or any part of the unit) meet both the criteria for soils and vegetation in bogs? Use the key	
below. If you unswer res you win sun need to rate the weithing based on its junctions.	
more of the first 32 in of the soil profile? Yes – Go to SC 3.3 No – Go to SC 3.2	
SC 3.2. Does an area within the wetland unit have organic soils, either peats or mucks, that are less than 16 in deep	
over bedrock, or an impermeable hardpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond? Yes – Go to SC 3.3 (No =); not a bog	
SC 3.3. Does an area with peats or mucks have more than 70% cover of mosses at ground level, AND at least a 30%	
cover of plant species listed in Table 4? Yes = Is a Category I bog No – Go to SC 3.4	
NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by	
nicasuming the prior the water that seeps into a hole dug at least 10 in deep. If the pH is less than 5.0 and the nlant species in Table 4 are present, the wetland is a hole	Cat. I
SC 3.4. Is an area with peats or mucks forested (> 30% cover) with Sitka spruce, subalpine fir western red cedar	-
western hemlock, lodgepole pine, quaking aspen, Engelmann spruce, or western white pine, AND any of the	
species (or combination of species) listed in Table 4 provide more than 30% of the cover under the canopy?	
Yes = Is a Category I bog No = Is not a bog	

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SC 4.0. Forested Wetlands	
Does the wetland have at least <u>1 contiguous acre</u> of forest that meets one of these criteria for the WA	
Department of Fish and Wildlife's forests as priority habitats? If you answer YES you will still need to rate the working based on its functions.	
Old-growth forests (west of Cascade crest): Stands of at least two tree species, forming a multi-layered	
canopy with occasional small openings; with at least 8 trees/ac (20 trees/ha) that are at least 200 years of	
age OR have a diameter at breast height (dbh) of 32 in (81 cm) or more.	
— Mature forests (west of the Cascade Crest): Stands where the largest trees are 80- 200 years old OR the provide that we have a standard structure (like) a standard structure (like) and the 24 is (F2 and).	
species that make up the canopy have an average diameter (dbh) exceeding 21 in (53 cm).	
Yes = Category I No = Not a forested wetland for this section	Cat. I
SC 5.0. Wetlands in Coastal Lagoons	
Does the wetland meet all of the following criteria of a wetland in a coastal lagoon?	
 The wetland lies in a depression adjacent to marine waters that is wholly or partially separated from marine waters by candbanks, gravel banks, chingle, or less frequently racks. 	
during most of the year in at least a portion of the lagoon <i>(needs to be measured near the bottom)</i>	Cat. I
Yes – Go to SC 5.1 (IO = Not a wetland in a coastal lagoon	
SC 5.1. Does the wetland meet all of the following three conditions?	
- The wetland is relatively undisturbed (has no diking, ditching, filling, cultivation, grazing), and has less	Cot II
than 20% cover of aggressive, opportunistic plant species (see list of species on p. 100).	Cat. II
— At least % of the landward edge of the wetland has a 100 ft buffer of shrub, forest, or un-grazed or un- mound grassland	
$-$ The wetland is larger than $\frac{1}{42}$ ac (4350 ft ²)	
Yes = Category I No = Category I	
SC 6.0. Interdunal Wetlands	
Is the wetland west of the 1889 line (also called the Western Boundary of Upland Ownershin or WBUO)? If	
you answer yes you will still need to rate the wetland based on its habitat functions.	
In practical terms that means the following geographic areas:	
 Long Beach Peninsula: Lands west of SR 103 	
 Grayland-Westport: Lands west of SR 105 	Cat I
Ocean Shores-Copalis: Lands west of SR 115 and SR 109 Yos – Go to SC 61 No – Jot an interdunal wetland for rating	
SC 6.1. Is the wetland 1 ac or larger and scores an 8 or 9 for the habitat functions on the form (rates H,H,H or H,H,M	Cat. II
for the three aspects of function)? Yes = Category I No – Go to SC 6.2	
SC 6.2. Is the wetland 1 ac or larger, or is it in a mosaic of wetlands that is 1 ac or larger?	
Yes = Category II No – Go to SC 6.3	Cat. III
Yes = Category III No = Category IV	
	Cat. IV
Category of wetland based on Special Characteristics	
If you answered No for all types, enter "Not Applicable" on Summary Form	N/A

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