

Critical Area Review Application Form

PA-02
APPLICATION

Community Development Department

501 N. Anderson, Ellensburg, WA 98926 (509) 962-7239 (Building) (509) 962-7231 (Planning) permits@ci.ellensburg.wa.us

The Critical Area Information Form is used to identify whether a proposed project involves any Critical Areas as defined in ECC 15.130. If it is determined that the proposed project does involve a Critical Area, then additional Critical Area review will be required pursuant to ECC 15.610. A complete Critical Area Information Form must be submitted along with the complete permit application. Staff will then review the form, perform a site inspection, and render a decision as to whether any Critical Areas may be affected by the proposal and if a more detailed Critical Area Report shall be required.

The Planning Division will be unable to accept your Critical Area Information Form if you fail to provide ALL of the following required material.

OFFICIAL USE ONLY:				
Staff Person:				
Date Submitted:				
Fee Total:				
CA FILE #:				
Associated Permit File #:				

PROPERTY OWNER:	(Note: If the Applicant is not the Owner, attach written a	uthorization fro	m the legal owner(s).				
Legal Owner Name(s):	Laura Osiadacz, Chair	Day Phone:	509-962-7508				
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PROJECT INFORMATI	
Parcel Number(s) of Site:	611033
Site Address (if any):	Highway 97
Describe Proposal & Underlying Permit:	

	PROJECT INFORMATION:						
	Is the proposed site adjacent water, pond, year round stream	to, or does it include, a body of water (e.g. exposed standing m, river or lake)?	☐ Yes 🗷 No				
1.	If Yes, Identify water body:						
	If yes, how close to the boundary of the water is the proposed development?						
	Does the site have floodplains	5?	¥ Yes ☐ No				
2.	If Yes, Identify the FEMA Map Community Panel No. and Flood Zone No.	COMMUNITY-PANEL NUMBER 530095 0439 B EFFECTIVE DATE: MAY 5, 1981 Flood Zone A					
	If yes, how close to the boundary of the floodplain is the proposed development?	The development would require the diversion of the floodplain dit eastern perimeter of the parcel. This is shown in the General Site in the Critical Areas Report.					
	Does the site have any wetlan soils or wetland plans such as	nds (open water, seasonal water, marsh areas, water saturated cat tails")?	¥ Yes □ No				
3.	If Yes, Identify wetland:	Wetlands W1-W3 and Nonwetland Waters Ditches D1-D12					
	If yes, how close to the boundary of the wetland is the proposed development?	The development would achieve a minimum 50 ft buffer averagin	ıg.				
	Does the site presently have f	ish or wildlife habitat:	☐ Yes 🗷 No				
4.	If Yes, identify the known types of wildlife:						
5.	Does the site have other critic to landslides?	al Areas (such as slopes over 40%, unstable soils, rocks prone	☐ Yes 🗷 No				
J.	If Yes, Identify:						
SITE	PLAN REQUIREMENTS:	是一种。1985年1985年1985年1985年1985年1985年1985年1985年	THE REAL PROPERTY.				
-	ide A General Site Plan That Sh	nows:					
	 The proposed project and c The proposed project and c the property. Please identified 	dimensions in relation to the property boundaries. dimensions in relation to all existing and proposed development on dimensions in relation to any known or suspected Critical Areas on fy the location and type of the Critical Area on the site plan. a minimum scale of 1:20 on substantial paper a minimum 11" x 17" size)					
SIGN	NATURE OF LEGAL OWNER	or REPRESENTATIVE AS AUTHORIZED BY THE LEGAL OWN	ER:				
I, Johnson , (print name) AFFIRM THAT THE ABOVE RESPONSES ARE MADE TRUTHFULLY AND TO THE BEST OF MY KNOWLEDGE.							
I FURTHER AFFIRM THAT I AM THE OWNER OF RECORD OF THE AREA PROPOSED FOR THE ABOVE-IDENTIFIED LAND USE ACTION OR, IF NOT THE OWNER, ATTACHED HEREWITHIN IS WRITTEN PERMISSION FROM THE OWNER(s) AUTHORIZING MY ACTIONS ON HIS/HER/THEIR BEHALF.							
Signature of Legal Owner: (or Authorized Agent) Date:							



Kittitas County Transfer Station and Maintenance Facility Relocation Project, Ellensburg, Kittitas County, Washington

Critical Areas Report

Draft

September 2019

Kittitas Solid Waste





Kittitas County Transfer Station and Maintenance Facility Relocation Project, Ellensburg, Kittitas County, Washington

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Client Name: Kittitas County Solid Waste

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Acronyms and Abbreviations

BMPs best management practices

cfs cubic feet per second

CY cubic yards FAC facultative

FACU facultative upland FACW facultative wetland

FEMA Federal Emergency Management Agency

FIRM flood insurance rate map

ft feet

GHG greenhouse gas

HGM hydrogeomorphic classification method

HUC hydrologic unit code

IPac Information for Planning and Consultation

LOMR letter of map revision KCC Kittitas County Code

NMFS National Marine Fisheries Service

NOAA National Oceanic and Atmospheric Administration
NPDES national pollutant discharge elimination system

NRCA Natural Resources Conservation Areas

OBL obligate

OHWM ordinary high water mark

PEM palustrine emergent (wetland)
PHS Priority Habitat and Species
SFHA special flood hazard area

USACE United States Army Corps of Engineers
USFWS United States Fish and Wildlife Service

WDFW Washington Department of Fish and Wildlife

WDOE Washington Department of Ecology
WNHP Washington Natural Heritage Program

WDNR Washington Department of Natural Resources

WOUS water of the United States

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1. Introduction

This report presents the findings of the critical areas investigation conducted for Kittitas County Solid Waste Department at the proposed Kittitas County Transfer Station (hereafter referred to as the project) site in Ellensburg, Kittitas County, Washington as required by Ellensburg City Code (ECC 15.61.100). The proposed project site is located in the northwestern portion of the city of Ellensburg. Current use of the site is livestock grazing.

1.1 Project Information

1.1.1 Applicant Information

Patti Johnson, Director Kittitas County Solid Waste 925 S Industrial Way Ellensburg, WA 98926 (509) 962-7070

1.1.2 Project Description

Kittitas County proposes to relocate its solid waste transfer station and Public Works Maintenance Facility to a new location. The projected population growth and solid waste management needs of Kittitas County combined with frequent flooding events and limitations to its existing facilities requires construction of both new facilities.

The new transfer station facility will include a transfer building, composting area, moderate-risk waste building, and recycling drop-off area as well as various administrative, parking, and other required elements. The new maintenance facility will include an administrative building, large equipment and vehicle storage, wash and maintenance bays, and salt, sand and de-icing chemical storage.

1.1.3 Project Location

The project is located in northwestern portion of the city of Ellensburg, in Kittitas County, Washington (Appendix A: Figure 1). The project survey area is bound to the west by state highway 97, to the north by the Burlington Northern railroad and Old Highway 10 and to the east and south by private, undeveloped properties. The Interstate 90 corridor is approximately 0.3 mile southwest of the survey area. The project survey area is within the U.S. Geological Survey (USGS) 7.5-minute Ellensburg North quadrangle in Section 28, Township 18 North, Range 18 East (USGS, 2018); Willamette Meridian (latitude 47.016181°, longitude -120.590401°) within the Upper Yakima watershed unit (Hydrologic Unit Code 17030001).

1.2 Permits Requested

Permits are requested for floodplain development and for impacts to wetland buffers located in critical areas.

1.3 Investigator Information

The critical areas investigation was conduction by Jacobs senior environmental biologist Peggy O'Neill, M.S., PWS. Ms. O'Neill has over 20 years' experience conducting environmental surveys and investigations in the Pacific Northwest. Field work for this investigation was conducted on October 25 and 26, 2018.

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2. Methods

The investigation was limited to the survey area (approximately 51 acres) that corresponds with Tax Map No. 18-18-28030008, parcel ID 611033. The following subsections describe the procedures and methods used to determine, map, and evaluate critical area resources within the survey area. Site-specific information reviewed during the pre-field investigation and collected during, or produced from, the field survey is provided in the appendixes. The following appendixes are provided:

- Appendix A, Figures
- Appendix B, Revised Wetland Delineation Report
- Appendix C, Site Plan

2.1 Pre-field Investigation

General information on climate, vegetation, soils, hydrology, and existing wetlands was reviewed before the field survey. Data and information sources included the following:

- Wetland Delineation Report: Kittitas County Waste Transfer Station (Jacobs, 2019b)
- Critical Aquifer Recharge Areas Map (Kittitas County, 2014c)
- Washington Priority Habitat and Species (PHS), (WDFW, 2018)
- Fish and Wildlife Habitat Conservation Areas Map (Kittitas County, 2014b)
- Washington Natural Areas Map (WDNR, 2019b)
- WNHP Historic Rare Plant Element Occurrences (WDNR, 2019c)
- Floodplain Mapping (FEMA, 2018)
- Information for Planning and Consultation (IPaC) (USFWS, 2018).
- Geologically Hazardous Areas Map (Kittitas County, 2014a)
- U.S. Geological Survey Topographic Map, North Ellensburg, Washington Quadrangle (USGS, 1983)

2.2 Field Survey

2.2.1 Method for Delineating Wetlands

The survey method for identifying wetlands followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (USACE, 2008). These methods use three criteria (vegetation, soils, and hydrology) to determine the presence of wetlands.

At each delineation sample point, the three required criteria were evaluated. Data collection included:

- Plant species were identified, and percent cover was visually estimated and recorded. Dominant species included the most abundant species whose cumulative cover accounted for at least 50 percent of the total cover, as well as any species that accounted for at least 20 percent of the total vegetative cover. The wetland indicator status for plant species was determined using the National Wetland Plant List (Lichvar et al., 2016).
- Soil characterization was determined from direct observation of soils between 0 and 18 inches below ground surface.
- Wetland hydrology was determined from direct observation of soil saturation and inundation or other indicators.

Additional soil pits were dug throughout the site to document hydric/nonhydric soil conditions and provide additional detail for wetland boundary mapping. Aquatic resources within the survey area were mapped using a Trimble GeoXH global positioning system with submeter accuracy.

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2.2.2 Method for Delineating Waters

Within nontidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction is defined by the ordinary high water mark (OHWM). In 33 *Code of Federal Regulations* 328.3, the OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, or the presence of litter and debris" (Environmental Laboratory, 1987). Generally, USACE considers the OHWM to be the elevation to which water flows at a 2-year frequency (for example, 50 years out of 100 years). Typically, OHWM is indicated by the presence of a defined streambed with bank shelving but may also include flow lines; sediment deposition or scour; and mineral staining, salt deposits, or deep or surficial cracking.

Any delineation of nontidal stream boundaries identified is consistent with OHWM Regulatory Guidance Letter No. 05-05 (USACE, 2005). Additionally, *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Arid West Region of the United States* (USACE, 2008) was used.

Within the survey area, OHWM indicators were identified and mapped in the field. OHWM indicators were recorded, and the average width and depth of OHWM channels were documented. Measured field data were compared with aerial photographs to refine and adjust OHWM boundaries. Photographs of the channel are provided in Appendix B as attachments to the wetland delineation report.

2.2.3 Method for Conducting Wetland Functional Assessments

Wetland Functional Assessments were conducted according to the *Washington State Wetland Rating System for Eastern Washington. 2014 Update* (WDOE, 2014). All on site wetlands were rated as "Slope" wetlands according to this methodology.

2.2.4 Method for Evaluating Special Status Species

The USFWS and NMFS species lists were accessed on their websites on March 29, 2018 (USFWS, 2018; NOAA, 2019). The Washington Natural Heritage Program *List of Animal Species with Ranks* (WDNR, 2017) was consulted for state species listings.

A field review of the project site was conducted to determine if potential habitat is present on site to support any of the listed species. The field survey also assessed the site to determine if suitable nesting habitat for birds subject to the Migratory Bird Treaty Act is present within or adjacent to the work area.

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3. Results

3.1 Critical Areas

"Critical areas" include the following areas and ecosystems: wetlands; areas with a critical recharging effect on aquifers used for potable water; fish and wildlife habitat conservation areas; frequently flooded areas; and geologically hazardous areas (ECC 15.600).

3.1.1 Wetlands, Waters, and Buffers

A field delineation of the entire survey area identified 2.07 acres of palustrine emergent (PEM) wetlands, and 11,836 linear feet of excavated watercourses constructed for the purpose of agricultural irrigation. A summary of the delineated aquatic resources is presented in Table 1 and in the following sections. The complete wetland delineation report is provided in Appendix B. Three wetlands (2.07 acres) were delineated within the survey area.

Table 1. Delineated Aquatic Resources

Feature ID	Classification (Cowardin et al., 1979)	Latitude/ Longitude	Size (acres)	Size (linear feet)
Wetlands (3)				
Wetland-1	PEM	47.01443°/ -120.5926°	1.44	
Wetland-2	PEM	47.0160°/ -120.5929°	0.26	
Wetland-3	PEM	47.0169°/ -120.5924°	0.37	
	TOTAL Wetlands		2.07	
Nonwetland Waters (12)				
Ditch D1	Perennial	47.0164°/ -120.5913°	0.75	2,170
Ditch D2	Intermittent	47.0163°/ -120.5922°	0.07	473
Ditch D3	Intermittent	ermittent 47.0161°/ -120.5931°		1,705
Ditch D4	Intermittent	47.0175°/ -120.5918°	0.03	340
Ditch D5	Intermittent	47.0177°/ -120.5894° 0.25		1,096
Ditch D6	Intermittent	47.0191°/ -120.5894°	0.04	760
Ditch D7	Intermittent	47.0189°/ -120.5892°	0.07	1,044
Ditch D8	Intermittent	47.0164°/ -120.5873°	0.07	1,185
Ditch D9	Intermittent	47.0158°/ -120.5878°	0.02	415
Ditch D10	Intermittent	47.01666°/ -120.5896°	0.03	825
Ditch D11	Intermittent	47.0168°/ -120.5920°	0.02	420
Ditch D12 (partially offsite)	Intermittent	47.0140°/ -120.5908°	0.20	1,403
	Total Nonwetland Waters	Perennial	0.75	2,170 feet
		Intermittent	0.92	9,666 feet

3.1.1.1 Wetlands

Three wetlands (2.07 acres) were delineated within the survey area. Each wetland resource is described in the following subsections and summarized in Table 1. An aquatic resource delineation map (Appendix A; Figure 2) is provided in Appendix A. Site photographs, field datasheets, wetland rating

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forms, and a list of plant species observed are provided in Appendix B as attachments to the wetland delineation report. A preliminary determination of potential jurisdictional status is provided in Table 2. In addition to the three delineated wetlands, ten additional areas were investigated as potential wetlands and were determined to not meet wetland criteria. These are identified on the wetland delineation map as possible wetland areas (PW1, PW2, etc.).

Wetland-W1, Palustrine Emergent Wetland (1.44 acres)

Wetland W1 (1.44 acres) is a PEM (Cowardin classification)/Slope (Hydrogeomorphic Classification (HGM)) (USDA-NRCS, 2008). wetland located in the southwestern portion of the survey area. Vegetation is comprised of heavily grazed planted grasses including creeping bentgrass (*Agrostis stolonifera*) (FACW) and Kentucky bluegrass (*Poa pratensis*) (FAC), willow dock (*Rumex salicifolius*) (FACW), celery leaved buttercup (*Ranunculus sceleratus*)(OBL), and common rush (*Juncus effusus*) (FACW). Soils sampled are a very dark gray (10YR 3/1) silty clay from 0 to 8 inches with 5 percent redoximorphic features (5.5YR 4/6). From 8 to 18 inches, soils continue as a very dark grayish-brown (10YR 3/2) clayey silt loam with up to 10 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W1 meets hydric soil indicator F6: Redox Dark Surface. Soil saturation was observed between eight and ten inches.

Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (*Festuca idahoensis*) (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) and typically lacking redoximorphic features. Wetland hydrology was not observed at the adjacent upland data points. Soils were not saturated in the upper 18 inches.

Wetland 1 is a Category IV wetland, requiring a 50-foot buffer (wetland rating forms are provided in Appendix B as attachments to the wetland delineation report).

Wetland-W2, Palustrine Emergent Wetland (0.26 acres)

Wetland W2 is a PEM (Cowardin)/Slope (HGM) wetland (0.26 acre) located in the north-central portion of the survey area. Vegetation is dominated and comprised of heavily grazed planted facultative species including creeping bentgrass (FACW), Kentucky bluegrass (FAC), willow dock (FACW), watercress (*Nasturtium officinale*) (OBL), and common rush (FACW). Soils sampled are a very dark gray (10YR 3/1) cobbly silt loam from 0 to 8 inches with no redoximorphic features. From 8 to 18 inches, soils continue as a very dark gray (10YR 3/1) gravelly silty clay with 5 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W2 meets hydric soil indicator F6: Redox Dark Surface. Soils were saturated below six inches.

Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) with no redoximorphic features typically observed. Wetland hydrology was not observed at the adjacent upland data points. No soil saturation was observed in the upper 18 inches.

Wetland 2 is a Category IV wetland, requiring a 50-foot buffer (wetland rating forms are provided in Appendix B as attachments to the wetland delineation report).

Wetland-W3, Palustrine Emergent Wetland (0.37 acre)

Wetland-W3 is a PEM (Cowardin)/Slope (HGM) wetland (0.37 acre) located in the north-central portion of the survey area. Vegetation is dominated by comprised of heavily grazed planted grasses including creeping bentgrass (FACW) and Kentucky bluegrass (FAC), willow dock (FACW), watercress (OBL), and celery-leaved buttercup (OBL). Soils sampled are a very dark gray (10YR 3/1) cobbly silt loam from 0 to 6 inches with no redoximorphic features. From 6 to 18 inches, soils continue as a very dark gray (10YR 3/1) gravelly silty clay with 5 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W3 meets hydric soil indicator F6: Redox Dark Surface. Soils were saturated at eight inches.

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Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) with no redoximorphic features typically observed. Wetland hydrology was not observed at the adjacent upland data points. No soil saturation was observed in the upper 18 inches.

Wetland 3 is a Category IV wetland, requiring a 50-foot buffer.

Table 2. Wetlands: Preliminary Jurisdictional Determination

Wetland ID	Bordering, Contiguous with, or Neighboring a WOUS ^a	Within 100 feet of the OHWM ^b of a WOUS	Within the 100-Year Floodplain and Within 1,500 Feet of a WOUS	Potential Jurisdiction Notes
Wetland W1	Yes	Yes	No	Likely jurisdictional as it is contiguous with ditch D1, which is presumed jurisdictional
Wetland W2	Yes	Yes	No	Potentially jurisdictional as it is contiguous with ditch D2, which is potentially jurisdictional
Wetland W3	Yes	Yes	No	Potentially jurisdictional as it is contiguous with ditch D4, which is potentially jurisdictional

^a WOUS - water of the United States

3.1.1.2 Nonwetland Waters

A system of excavated irrigation ditches (nonwetland waters) is present on the project site. The field investigation delineated twelve ditches (11,836 lineal feet) within the survey area. A water control structure at the northern end of the site regulates flow into the ditches for irrigation purposes. The ditches also carry flow in response to precipitation events. All ditches show evidence of trampling by livestock.

Each nonwetland water is a constructed watercourse for the purpose of agricultural irrigation and is described in the following subsections and summarized in Table 1. An aquatic resource delineation map (Appendix A: Figure 2) is provided in Appendix A. Site photographs and watercourse or ditch characterization field data forms are provided in Appendix B as attachments to the wetland delineation report. Preliminary determinations of potential jurisdictional status are provided in Table 3.

Ditch D1

Ditch D1 is an excavated ditch that traverses the site from north to south. Clear bed and banks are present. Ditch D1 averages 15 feet across at top of bank. Depth from top of bank to substrate averages 3 to 4 feet. Ditch substrate consists of silty clay with some gravels. The ditch drains to offsite to ditch D12, appearing to eventually reach the Yakima River. Flow was present to a depth of 6 to 8 inches with areas of ponding 1 to 1.5 feet deep. Ponding occurs up and downstream at the locations of two culvert crossings, a ford crossing, and areas of dense vegetation. Flow is assumed to be perennial due to the amount of flow present during the field visit in late October following a dryer than normal summer and no measurable precipitation in the month prior to the field visit.

Ditch D2

Ditch D2 is an excavated ditch that traverses the site east to west. D2 connects ditches D1 and D3. No flow was present in the ditch at the time of the field visit. Direction of flow is not clear, though based on elevation (GoogleEarth Pro, 2018), it appears to convey water east to west, from ditch D1 to ditch D3. Evidence of flow included scour marks and a predominantly unvegetated bottom. Flow is assumed to be

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^b OHWM – ordinary high water mark



intermittent in response to precipitation events or irrigation. Substrate is silty clay. Clear bed and shallow banks were observed. Ditch D2 averages 6 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Ditch D2 bisects wetland W2. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D3

Ditch D3 generally follows the western boundary of the site, with a short east-west segment at the northern end. The east-west portion of the ditch is lined with concrete which continues a short way into the north-south segment. Ditch D3 is connected to ditch D5 via a culvert that crosses over ditch D1. No flow was present at the time of the field visit; however, direction of flow appears to be to the west from the culvert at ditch D1 and then south along the western site boundary. Substrate is silty clay. Evidence of flow includes scour marks, lack of vegetation, and presence of clear bed and banks. Ditch D3 averages 3 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D4

Ditch D4 traverses the site diagonally from the intersection of ditches D1 and D3 southwest to the northern end of wetland W3. No flow was present at the time of the field visit. Direction of flow appears to be northeast to southwest. Flow from this ditch may provide some hydrological support for wetland W3. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and watercress. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D4 averages 4 feet across at top of bank and an average 0.75 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D5

Ditch D5 traverses the site east to west, beginning at the eastern site boundary and flowing due west to its connection with ditch D3 via a culvert over ditch. At the eastern end ditch D5 is connected with ditch D7 from the north and ditch D8 to the south. Ditch D5 consists of two parallel channels separated by a low vegetated berm. No flow was observed at the time of the field visit, however shallow standing water was present in places. Direction of flow appears to be east to west. Evidence of flow includes scour mark, lack of vegetation, and presence of clear bed and banks in both channels. The substrate consists of silty clay. Including both channels ditch D5 averages 10 feet across at top of bank with the center berm 2 to 3 feet wide. Channel depth averages 1.5 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D6

Ditch D6 traverses the site from southeast to northwest along the northern site boundary. No flow was present at the time of the field visit. Evidence of flow includes scour marks, lack of vegetation, and presence of clear bed and shallow banks. Direction of flow appears to be southwest to northeast with ditch D6 draining into the northernmost segment of ditch D1. No surface connection was observed between ditch D6 and ditch D7 immediately southeast of D6. Ditch D6 averages 2.5 feet across at top of bank. Channel depth averages 0.5 feet. Substrate is silty clay. Adjacent vegetation consists of pasture grasses to the southwest and a thicket of shrubs with some trees offsite to the northeast.

Ditch D7

Ditch D7 traverses the site from northwest to southeast. No flow was present at the time of the field investigation. The western portion of ditch D7 runs parallel to and a short distance away from ditch D6. Evidence of flow includes scour marks and presence of bed and shallow banks. The channel is mostly devoid of vegetation. This segment of ditch D7 averages 3 feet across at top of bank and 0.5 feet from top of bank to substrate. Substrate is silty clay. Flow in this segment appears to be southeast to northwest, originating at a water control structure that connects the western and eastern segments of ditch D7. Adjacent upland vegetation is planted pasture grasses.

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The eastern segment of ditch D7 originates at the water control structure and appears to flow northwest to southeast. This segment of the channel is lined in concrete and averages 3 feet across at top of bank and 1.25 feet from top of bank to substrate. Adjacent upland vegetation consists of pasture grasses to the southwest and unmaintained grasses and forbs offsite to the northeast.

Ditch D8

Ditch D8 traverses the site from north to south along the eastern boundary of the site. Ditch D8 is a continuation of ditch D7 south of its intersection with ditch D5. No flow was present at the time of the field investigation, however shallow standing water was observed in some places. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and watercress. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D8 averages 2.5 feet across at top of bank and an average 0.75 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D9

Ditch D9 extends diagonally from ditch D8 to the southwest site. No flow was present at the time of the field investigation. Direction of flow appears to be northeast to southwest. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D9 averages 2 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D10

Ditch D10 extends due south from ditch D5. No flow was present at the time of the field investigation. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D10 averages 1.5 feet across at top of bank and an average 0.3 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D11

Ditch D11 extends slightly northwest to southeast from ditch D4 to ditch D2. No flow was present at the time of the field investigation. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and occasional rushes. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D11 averages 2 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D12

Ditch D12 is located just south of and parallel to the southern boundary of the site. Description of this ditch is based on offsite observation. Ditch D12 averages 6 to 8 feet across at top of bank and is an average 2 feet from top of bank to substrate. The ditch begins approximately 300 feet east of Old Highway 10 and flows east to the eastern end of the project site boundary, then turns south where is continues for an indeterminant distance. Flow was present in the ditch at the time of the field visit.

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Table 3. Nonwetland Waters: Preliminary Jurisdictional Determinations

Nonwetland Waters #	Length (ft)	Average Width (ft)	Flow Regime	OHWM?	Relocates or Excavated in a Tributary?	Drains Wetlands?	Intersects a Regulated Feature?	Flows to WOUSª?	Potential Jurisdiction Notes
D1	2170.0	15	perennial	Yes	No	unknown	Yes	No	Likely jurisdictional due to perennial flow
D2	473.0	6	intermittent	Yes	No	unknown	Yes	No	Potentially jurisdictional as it intersects Wetland W2
D3	1705.0	3	intermittent	Yes	No	unknown	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D4	340.0	4	intermittent	Yes	No	No	Yes	No	Potentially jurisdictional as it intersects Wetland W3
D5	1096.0	10	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D6	760.0	2.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D7	1044.0	3	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D8	1185.0	2.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D9	415.0	2	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D10	825.0	1.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D11	420.0	2	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D12 (partially offsite)	1,427	6	intermittent	Yes	No	No	Yes	Unknown	Likely jurisdictional as it intersects and drains Ditch D1 and is adjacent to wetland W1

3.1.2 Critical Aquifer Recharge Areas

According to the Kittitas County Critical Aquifer Recharge Area Map the project site is located within an area identified as a high aquifer susceptibility area (Kittitas County, 2014c) (Appendix A: Figure 3). However, according to the city of Ellensburg Draft Critical Areas Revisions (15.660.030) the city does not believe there are any critical aquifer recharge areas within the city limits relating to public drinking supplies.

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3.1.3 Fish and Wildlife Habitat Conservations Areas

According to ECC 15.650.010 fish and wildlife habitat conservation area includes seven categories or definitions. The categories are defined below with a description of observed onsite habitat within the Project area relative to each category.

1. Areas with which state or federally designated endangered, threatened, and sensitive species have a primary association.

Habitat present on site includes managed pasture and emergent wetlands. The site is entirely comprised of managed pasture. A total of 2.07 acres of emergent wetland is present in three locations. The site is bisected by a series of interconnecting irrigation ditches. All habitat on site is degraded from activities associated with historic agricultural use of the site and is unlikely to provide suitable habitat for any state or federally designated endangered, threatened, or sensitive terrestrial or aquatic species. A list of potentially occurring state or federal listed species is provided in Table 4.

2. State priority habitats and areas associated with state priority species. Priority habitats and species are considered to be priorities for conservation and management. Priority species require protective measures for their perpetuation due to their population status, sensitivity to habitat alteration, and/or recreational, commercial, or tribal importance. Priority habitats are those habitat types or elements with unique or significant value to a diverse assemblage of species. A priority habitat may consist of a unique vegetation type or dominant plant species, a described successional stage, or a specific structural element. Priority habitats and species are identified by the State Department of Fish and Wildlife.

WDFW identifies one priority habitat on the project site (WDFW, 2018) (Appendix A: Figure 4). WDFW identifies wetlands in the southwestern portion of the site. The WDFW-mapped wetland roughly corresponds with the delineated wetland W1 described in section 3.1.1.1 above. No other state priority habitats or state priority species are identified. No Fish and Wildlife Habitat Conservation areas are identified within or immediately adjacent to the study area (Appendix A: Figures 5a and 5b).

3. Naturally occurring ponds under 20 acres. Naturally occurring ponds are those ponds under 20 acres and their submerged aquatic beds that provide fish or wildlife habitat, including those artificial ponds intentionally created from dry areas in order to mitigate impacts to ponds.

No ponds are present on the project site.

4. Waters of the state. Waters of the state include lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington, as classified in WAC <u>222-16-031</u> (or WAC 222-16-030 depending on classification used).

Seven potentially jurisdictional waters of the state are present on the project site. They include three wetlands (wetlands W1, W2, and W3) and four ditches (ditches D1, D2, D4, and D12) with hydrological connections to other potentially jurisdictional features. Waters of the state are described in Section 3.1.1 above.

5. Lakes, ponds, streams, and rivers planted with game fish by a governmental or tribal entity.

No lakes, streams, or rivers are present within the project boundaries.

6. State natural area preserves and natural resource conservation areas. Natural area preserves and natural resource conservation areas are defined, established, and managed by the Washington State Department of Natural Resources.

No state natural area preserves or natural resource conservation areas (NRCA) are identified with Kittitas County. (Appendix A: Figure 6) (WDNR, 2019a; WDNR 2019b). Natural Area Preserves protect the best

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remaining examples of many ecological communities including rare plant and animal habitat. The preserve system presently includes more than 38,290 acres in 56 sites throughout the state. Natural Resource Conservation Areas (NRCAs) protect outstanding examples of native ecosystems, habitat for endangered, threatened and sensitive plants and animals, and scenic landscapes. More than 118,700 acres are conserved in 36 Washington state NRCAs.

7. Areas of rare plant species and high-quality ecosystems as identified by the Washington State Department of Natural Resources through the Natural Heritage Program.

No rare plant species element occurrences or high quality ecosystems are mapped on or in the vicinity of the project site (Appendix A: Figures 7a and 7b) (WDNR, 2019c). The field survey identified no suitable habitat to support rare plant species.

3.1.3.1 Federal Species and Protected Habitat

Results of the USFWS database searches identified six special-status species as having the potential to occur on or adjacent to the project site (USFWS, 2018). No designated or proposed critical habitat (USFWS, 2018a) was identified within the survey area. A list of the potentially occurring special-status species is presented in in Table 4.

Table 4. Special-status Species Potentially Occurring in Kittitas County

<u>-</u>	-	_	-		
Common Name Scientific Name		Federal Status ^a	Ciritical Habitat Identified ^a	State Status ^b	Potential Suitable Habitat Present on Site
Mammals					
Canada lynx	Lynx canadensis	Т	No	E	No
Gray wolf	Canis lupus	Е	No	E	No
North American Wolverine	Gulo gulo luscus	PT	No	С	No
Birds					
Marbeled murrelet Brachyramphus marmoratus		Т	No	Е	No
Yellow-billed cuckoo Coccyzus americanus		Т	No	С	No
Fishes	•				
Bull trout	Salvelinus confluentus	Т	No	С	No

^a Source: USFWS, 2018

E = Endangered

T = Threatened

PT = Proposed Threatened

^b WNHP, 2017

E = Endangered

C = Candidate

A field review of the project site was conducted on October 25 and 26, 2018, by Peggy O'Neill, senior Jacobs biologist. No federally listed special-status species were observed during the field evaluation. No suitable habitat to support any listed species was observed on site. Given species habitat and range requirements, and existing habitat observed onsite, suitable nesting habitat for birds subject to the Migratory Bird Treaty Act is present within and adjacent to the work area.

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3.1.3.2 State Species and Protected Habitat

No state listed endangered species are identified as occurring on or in the vicinity of the project site (WDFW, 2019) (Appendix A: Figure 4). No state listed special-status species were observed during the field evaluation. No suitable habitat to support any listed species was observed on site.

3.1.4 Frequently Flooded Areas

The project site is located on FEMA Flood Insurance Rate Map (FIRM) No. 5300950439B, which was revised to reflect a Letter of Map Revision (LOMR) effective August 17, 2018 (Appendix A: Figure 8). Within the boundaries of Parcel No. 611033, there are three zones delineated on the FIRM: the first zone includes two ditches, D1 and D12, which are delineated as Zone A1, while the second zone is delineated as Zone B and represents an area immediately surrounding Zone A1. The third zone delineated is Zone C, which represents the area between the D1 and Reecer Creek. Zone A1 is defined as an area of the 100-year flood, and base flood elevations and flood hazard factors have been determined, while the second zone, Zone B, is defined as an area between the limits of the 100-year flood and the 500-year flood. Zone C is defined as an area of minimal flooding. Per Kittitas County Code (KCC) 14.08.020, Zone A1 is considered a special flood hazard area (SFHA), while Zone B and Zone C are not.

3.1.5 Geologically Hazardous Areas

The project site is not located in an identified geologically hazardous area (Kittitas County, 2014a).

3.2 Statement of Accuracy

Information presented in this report is accurate to the best of my knowledge and represents the expertise and best professional judgement of the preparers

3.3 Cumulative Impacts Analysis

This analysis addresses actions in the recent past, the present, and the reasonably foreseeable future that could combine with the proposed action to cause a measurable impact. If measurable cumulative effects are identified, then and evaluation of whether those effects would be significant is made. The geographic resources study area is the Currier Creek sub-basin (HUC 170300010510) of the Upper Yakima watershed unit (Hydrologic Unit Code 17030001).

Actions in the recent past in the vicinity of the proposed project include the following:

- Road construction: Interstate 90, Washington Highway 97, Old Highway 10, West University Way
- Agricultural activities including tilling, planting, and long-term grazing
- Construction of a network of irrigation canals
- Commercial development: light industrial, hotels, restaurants, service station, etc.
- Residential development
- Gravel quarry

Reasonably foreseeable future actions in the vicinity of the proposed project include the following:

- Planned residential developments north, east, and northeast of the site
- Commercial and light industrial development on US 97
- Construction of connector roads

3.3.1 Wetlands, Waters, and Buffers

Wetlands, waters, and their buffers contribute critical functions to watershed health, including water quality improvement, filtration, flood attenuation, groundwater recharge and discharge, and fish and wildlife habitats. Impacts to wetlands, waters, and buffers have occurred as a result of human activities over the past century and half associated with the arrival of euro-American settlers. Agricultural practices including tilling, draining through tiles or channels, or by removing the wetland vegetation and planting



upland vegetation have resulted in loss or degradation of wetland habitat. Livestock grazing in streams and wetlands has affected the physical structure of wetlands. Diversion of water for agricultural use has resulted in less available water to support wetlands. Soil disruption from tilling and grazing has resulted in downstream transport of sediment. Fragmentation of wetland habitat has also occurred as a result of road construction, residential and commercial development, resulting in a reduction of total area of wetlands and elimination of connections between wetlands and other habitats (Sheldon, et al., 2005).

Wetlands, waters, and their buffers identified on the Project site are considered highly degraded as a result of long-term agricultural use. Impacts include site modifications associated predominantly with agricultural use including removal of natural historically occurring vegetation, planting with agricultural crops, use of the site for grazing, construction of an interconnecting network of ditches for draining and/or irrigation purposes, and fill and relocation of an historical stream channel that meandered through the site. Other activities that have impacted the natural resources include construction of roads west and north of the site (state highway 97 and Old Highway 10), and construction of a rail line north of the site (Burlington Northern railroad), effectively disconnecting the resources from their historic counterparts.

The proposed Project will avoid all impacts to onsite wetlands and to nearly all of the wetland buffers. Implementation of the Project would have no direct adverse effects on wetlands during construction and operation of the Project, as the Project has been designed to avoid impacts to all wetlands identified on site. As a result of the project, direct buffer impacts would occur (12,836 square feet (0.29 acres); approximately 15 percent of the wetland W1 buffer). Project impacts to the wetland W1 buffer are self-mitigating, in that mitigation for impacts to this buffer will be performed on-site as replacement of the functions and values by delineating, protecting, and enhancing in an equal amount (1:1) of buffer immediately adjacent to and contiguous with the existing buffer. (Figure 9a). Direct ditch impacts would occur to (3,767 linear feet (1.05 acres) as a result of the project. Project impacts to potentially jurisdictional ditches are self-mitigating, in that mitigation for impacts to these ditches will be performed on-site as replacement of the functions and values and flow volumes in part at 1:0.6 in the creation of a 2,364-foot diversion ditch with additional compensation provided through enhancement planting along the length of the new ditch providing significant functional uplift compared to the existing highly degraded ditches. Therefore, there would be no net loss of either wetlands, waters, or wetland buffers as a result of the Project.

Wetlands on the Project site are highly degraded from past and current agricultural use. As a result of the Project, agricultural use of the wetlands will cease and the wetlands will be protected from further degradation and from activities associated with the proposed adjacent developments. Therefore, based on the proposed mitigation activities, implementation of Project in combination with the cumulative projects would generate no cumulative impacts on wetlands, waters, or buffers.

3.3.2 Fish and Wildlife Habitat Conservations Areas

The WDFW and the Washington State Department of Natural Resource's Natural Heritage Program (WNHP) compile and map fish and wildlife habitats throughout the state. Priority habitats are habitat types or elements with unique or significant value to a large number of species. A Priority Habitat may consist of a unique vegetation type (such as shrub-steppe), dominant plant species (such as juniper savannah), or a specific habitat feature (such as cliffs). WDFW identifies freshwater wetlands as a Priority Habitat.

Historical impacts to fish and wildlife habitat have occurred as a result of human activities and alterations over the past century and half associated with the arrival of euro-American settlers in the region. Habitat loss has occurred through conversion, fragmentation, or the increase in isolation and decrease in the size of habitat areas, and degradation of natural habitats (Kittitas County, 2014d). Habitat conversion, fragmentation, and degradation have resulted in the loss of more than half of the highest priority functioning habitats in Washington state. Invasive alien plant and animal species area displacing native species, profoundly altering natural systems. Other impacts to fish and wildlife and their habitat have resulted from introduction of disease and pathogens and reduction and degradation of natural water sources (Sheldon, et al., 2005).

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WDFW identifies a wetland area in the southwestern portion of the site as a priority habitat. Two other wetland areas were identified on site part of a wetland delineation conducted for the Project and would also be considered priority habitats. All three wetlands are highly degraded as a result of grazing activities. The wetlands have been impacted by removal of native vegetation and planting with non-native pasture grasses. Vegetation and soils have been trampled and compacted by grazing cattle. Hydrology has been altered by construction of irrigation ditches through and/or adjacent to the wetlands.

The proposed Project area provides negligible habitat value for wildlife and will avoid all impacts to the wetlands on the site. Therefore, the Project would result in no net loss of wetland habitat and overall loss of potential wildlife habitat would be negligible.

Therefore, implementation of the Project in combination with the cumulative projects would generate no cumulative impacts on fish and wildlife habitat or species.

3.3.3 Frequently Flooded Areas

The Proposed Action would not adversely affect the functions and values of the 100-year floodplain in the long term. The proposed project diverts D1 ditch around the perimeter of the site and fill will be placed within the existing regulatory SFHA as part of the proposed design. Ditch D12 is directly downstream and receives the majority of its flow from ditch D1. Flow to D12 will be rerouted as a result of the diversion of ditch D1. Compensatory storage mitigation will be provided for both ditches in the diversion ditch. The compensatory storage mitigation will provide equal or greater conveyance and floodplain storage volume to offset any impacts due to the diversion of ditches D1 and D12. Structures that may be located in the regulatory SFHA will have a lowest floor elevated to 1 foot or more above base flood elevation to meet local floodplain regulations. The proposed project will be designed to comply with federal and local floodplain regulations.

The current conceptual design includes a limited amount of fill within a SFHA with the proposed Project design diverting and building over most of ditch D1. Ditch D12 would be filled in conjunction with the county-required construction of a collector road along the southern site boundary. The floodplain function of both ditches would be maintained by relocating ditch D1 approximately 1,000 feet to the east to follow the eastern perimeter of the site. The relocated ditch would divert flow from ditches D1 and D12 and rejoin the existing downstream ditch at the southeastern corner of the site.

A floodplain and hydraulic analysis was conducted for the project that analyzed the conveyance through D1 and approximated the volume of proposed fill in the SFHA (Jacobs, 2019). The analysis concluded that flow through ditch D1 on the site has a 100-year peak discharge of approximately 16 cfs, and up- and downstream channel cross-sectional area of approximately 10.3 square feet. The proposed mitigation is providing compensatory storage mitigation in the form of a perimeter ditch (Figure 9b). The perimeter ditch will rejoin the downstream ditch at the southeastern corner of the site. The compensatory storage mitigation will provide equal or greater conveyance and storage volume to offset any impacts due to proposed fill in the floodplain.

Therefore, implementation of the Project in combination with mitigation measures (relocation of ditches with equal water storage and capacity), and the adjacent proposed projects which would be required under Ellensburg City Code to provide similar mitigation for floodplain impacts would generate no cumulative impacts to frequently flooded areas.

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4. Mitigation Sequencing

4.1 Avoidance

The applicant shall avoid all impacts that degrade the functions and values of a critical area or areas when possible. Unless otherwise provided in this chapter, if alteration to the critical area is unavoidable, all adverse impacts to or from critical areas and buffers resulting from a development proposal or alteration shall be mitigated using the best available science in accordance with an approved critical area report and SEPA documents, so as to result in no net loss of critical area functions and values.

The project was designed to avoid impacts to wetlands and waters and their buffers to the maximum extent possible and still meet the project objectives. Impacts to Wetlands W1, W2, and W3 are entirely avoided. All onsite Project facilities were located to avoid impacts to all wetlands and their buffers. Prior to these adjustments, the construction of a City-required collector road along the southern site boundary would have directly impacted a portion of wetland W1. However, the Project has reached an agreement with the owner of the Triple L property south of the project site to purchase a portion of the property in order to locate the road outside of the wetland, thus avoiding wetland impacts.

4.2 Minimization

Minimize impacts by limiting the degree or magnitude of the action and its implementation, by using appropriate technology, or by taking affirmative steps, such as project redesign, relocation, or timing, to avoid or reduce impacts.

Impacts to wetland buffers have been minimized to the maximum extent possible. The project avoids all impacts to the Wetland W2 and W3 buffers. The project will permanently impact 12,836 square feet (0.29 acre) (approximately 15 percent of the Wetland W1 buffer) as a result of City-required collector road. As noted above the Project will purchase a portion of an adjacent parcel to avoids impacts to the wetland W1. Impact to the wetland W1 buffer were minimized by locating the road as far south as practicable.

In addition, during construction all appropriate best management practices (BMPs) will be implemented including, but not limited to erosion control BMPs required by the City Code and the *Stormwater Management Manual for Eastern Washington* (Ecology, 2019). The BMPs include use of mulch, silt barriers, containment systems, interim stormwater controls, cover measures (straw or plastic), and stream bypasses, as well as reseeding of areas temporarily disturbed by construction.

During construction, BMPs for project impacts to air quality, odor, and GHG emissions could include, but would not be limited to the following:

- Spraying water, when necessary, during construction operations to reduce emissions of fugitive dust.
- · Covering dirt, gravel, and debris piles as needed to reduce fugitive dust and wind-blown debris.
- Covering open-bodied trucks, wetting materials in trucks, or providing adequate freeboard (space from the top of the material to the top of the truck) to reduce fugitive dust emissions.
- Turning off construction equipment when not in use to minimize idling and reduce GHG emissions.
- Replanting all vegetation temporarily disturbed by construction activities with native vegetation within 1 year or growing season after construction was complete.

4.3 Mitigation

Mitigation for impacts to critical areas, including floodplains, wetlands and their buffers is required according to Ellensburg City Code (ECC 15.610.060). According to the code, buffer width may be reduced provided the applicant mitigates for the proposed buffer to result in no net loss of buffer functions per best available science.

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Compensatory mitigation for impacts to waters of the U.S. is required under the Clean Water Act. EPA's Section 404 rules allow compensatory mitigation to be carried out by one of four methods: 1) the restoration of a previously-existing wetland or other aquatic site, 2) the enhancement of an existing aquatic site's functions, 3), the establishment (i.e., creation) of a new aquatic site, or 4) the preservation of an existing aquatic site (EPA, 2008).

Mitigation for impacts to the floodplain is required under Kittitas County Code (KCC). According to KCC 14.08.315, filling, grading, or other activity that reduces storage in the floodplain is allowable, granted effective floodplain compensatory storage volume (herein referred to as compensatory storage) is preserved and there are no up- or downstream floodplain impacts.

4.3.1 Wetland Buffer

The project will result in permanent impacts to 12,836 square feet (0.29 acre) of the wetland W1 buffer. Mitigation for loss of 12,836 square feet (0.29 acre) of buffer will be accomplished through buffer averaging, that is, by delineating, protecting, and enhancing an equal amount of buffer adjacent to the existing wetlands W1 buffer at a 1:1 ratio (Figure 9a). Table 5 provides a summary of the wetland buffer impacts and proposes mitigation.

ID	Impact Area (sf)	Impact Area (acres)	Replacement Ratio	Mitigation Area (acres)
W1 Buffer	12,836	0.29	1:1	0.29
Totals	12,836	0.29		0.29

4.3.2 Nonwetland Waters

The project would result in permanent impacts to 3,767 linear feet of nonwetland waters. Table 6 identifies impacts to all or portions of four potentially jurisdictional ditches associated with the project – ditches D1, D2, D4, and D12, and proposed mitigation.

Table 6. Summary of Impacts to Nonwetland Waters and Proposed Mitigation

ID	Length (ft)	Area (acres)	Mitigation	
D1	2,000	0.7	Function replacement with	
D2	288	0.04	Function replacement with 2,364 linear feet of new	
D4	76	0.01	perimeter ditch with enhancement plantings along	
D12 (partially offsite)	1,427	0.2	the length of the new ditch.	
Totals	3,767	0.95		

The proposed project diverts D1 ditch around the perimeter of the site and fill will be placed within the existing ditch D1 as part of the proposed design. The Project will also fill portions of ditched D2 and D4 as a result of the proposed Project design and all of ditch D12 as a result of the City-required collector road along the southern site boundary. Project impacts to potentially jurisdictional ditches are self-mitigating, in that mitigation for impacts to these ditches will be performed on-site as replacement of the functions and values in part at 1:0.6 in the 2,364 linear foot created diversion ditch. Additional compensation will be provided through enhancement plantings along the length of the new ditch, thereby providing significant functional enhancement compared with the existing highly degraded ditches. (This proposed mitigation for impacts to nonwetland waters will be further developed and refined in coordination with the Corps during preparation of the Section 404 permit application). As such, the compensatory mitigation will offset any impacts due to the diversion of D1 ditch and fill of ditches D2, D4, and D12.

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4.3.3 Frequently Flooded Areas

Ditches D1 and D12 are coincident with the 100-year floodplain. The proposed Project diverts flow from ditches D1 and D12 into a proposed new ditch to be constructed around the northern and eastern perimeter of the site (Figure 9b). Fill will be placed within the existing regulatory SFHA (ditches D1 and D12) as part of the proposed design. The compensatory storage mitigation provided by the diversion ditch will provide equal or greater conveyance and floodplain storage volume to offset any impacts due to the fill of ditches D1 and D12.

Table 7. Summary of Impacts to 100-Year Floodplain and Proposed Mitigation

ID	Length (ft)	Width (ft)	Area (acres)	Depth (ft)	Volume at OHWM (cy)	Mitigation	Mitigation Ditch Volume (CY)
D1	2000	15	0.7	varies	770	1:1 volume	
D12 (partially offsite)	1,427	6	0.2	varies	295	replacement with perimeter ditch	
Totals	3,767		0.95		1,105		1,065

The compensatory storage requirement is to ensure that flow attenuation remains the same during a base flood event, thus mitigating any downstream floodplain impacts. By examining the length of the existing ditches D1 and D12 and the proposed diversion ditch as well as their respective cross-sectional areas, Jacobs can approximate the net change to compensatory storage.

The length of D1 ditch impacted by the diversion is approximately 2,000 feet. Using the average cross-sectional area of the ditch (10.36 square feet), the approximate amount of compensatory storage lost is 770 cubic yards. The length of D12 ditch is about 1,000 linear feet; cross sectional area of the 100-year flow is about 10 square feet to the east and tapers down to 5 square feet to the west (near the intersection with D1). Therefore, the average volume of the 100-year floodplain in D12 is approximately 295 cubic yards. The combined amount of compensatory storage lost for both ditches D1 and D12 is approximately 1,065 cubic yards.

Comparatively, the length of the diversion ditch is approximately 2,364 linear feet and with a cross-sectional area of 12.50 square feet, the compensatory storage volume added is approximately 1,060 cubic yards. Modifications to dimensions of the diversion ditch during project design will ensure that the compensatory storage mitigation meets or exceeds the volume lost. The proposed diversion ditch will maintain hydraulic connectivity of the floodplain up- and downstream of the site. Because the proposed design is expected to provide the same or greater conveyance and compensatory storage, no up- or downstream impacts to base flood elevations are expected as a result of this project.

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5. **Proposed Mitigation**

5.1 **Environmental Goals and Objectives**

The goal of the proposed mitigation is for the project to be self-mitigating by replacing lost functions of waters of the state/U.S., the 100-year floodplain, and wetland buffers that will be permanently impacted as a result of Project activities. Objectives of the mitigation area as follows:

- Mitigate for impacts to presumed jurisdictional ditches D1, D2, D4, and D12 by diverting flow from the existing ditch D1 into a newly excavated ditch that will follow the northern and eastern perimeter of the site, reconnecting with the existing drainage at the southeast corner of the site, and provide upgraded function with enhancement plantings along the length of the ditch.
- Mitigate for impacts to the 100-year floodplain (ditches D1 and D12) by diverting flow into the newly excavated ditch that will follow the northern and eastern perimeter of the site, reconnecting with the existing drainage at the southeast corner of the site.
- Mitigate for impacts to 12,836 square feet of the buffer to wetland W1 through buffer averaging and enhancement with an area equal to the impact area immediately adjacent to the existing buffer.

5.2 Performance Standards

The proposed mitigation for impacts to the ditches and wetland buffer are is designed to provide replacement of lost functions and values of these features associated with project activities. Performance standards are as follows:

- 1:0.6 replacement of 3.767 linear feet of ditches D1, D2, D4, and D12, through construction of 2,364 linear feet of a new ditch along the northern and eastern perimeter of the site and establishment of riparian enhancement plantings along the length of the new ditch.
- 1:1 replacement or better of 1,105 cubic yards of flow volume in ditches D1, and D12 through construction of the new ditch along the northern and eastern perimeter of the site with a flow volume capacity to meet or exceed the total impacted flow volume.
- 1:1 replacement of 12,836 square feet (0.29 acre) of impacted wetland W1 buffer through buffer averaging.

5.3 **Detailed Construction Plans**

5.3.1 **Construction Methods**

5.3.1.1 **Construction Sequence, Timing, and Duration**

Construction of the Kittitas County Transfer Station at US 97 is planned to commence in 2021 and be completed with facilities operational in 2022. The existing Kittitas County Transfer Station at 1001 Industrial Way would maintain operations during construction of the new transfer station until the relocated transfer station is operational.

The general construction activities consist of:

Begin grading activities and prepare the site for construction. April 2021

Prepare the stormwater and draining facilities.

Pave the impervious surfaces.

Construct the buildings.

Obtain an Operating Permit.

June - August 2021 October - November 2021 July - December 2021

January 2022

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The Public Works Maintenance Facility will continue to operate at 505 W 14th Street, Ellensburg until generation construction activities are planned as follows:

• Begin grading activities and prepare the site for construction

• Prepare the stormwater and drainage facilities

Pave the impervious surfaces

Construct the buildings

Begin operations

March 2023 May - July 2023 August - October 2023 November - April 2023 May 2024

5.3.1.2 Grading and Excavation Specifications

Of the 50-acre parcel, the conceptual design covers approximately 23-acre area of impervious surface with 5,000 feet of roadway, 851,000 square feet of stormwater ponds, and 12 stand-alone buildings. The Transfer Building will require structural fill 15 feet above surface ground level. The Maintenance Facility will require approximately 450 cubic yards of excavation for building footings and foundations and 130,000 ft² of site fine grading to achieve paving for building, parking lots, ancillary structures, and site drainage. The stormwater infrastructure includes excavated stormwater catchment ponds, drainage channels, and a relocated floodplain ditch.

5.3.1.3 Erosion and Sediment Control Specifications

Best Management Practices would be implemented to minimize erosion. Construction would comply with applicable temporary erosion and sedimentation control provisions of the Ellensburg City Code, an NPDES Construction Stormwater General Permit Surface Water Pollution Prevention Plan, and the Stormwater Management Manual for Eastern Washington.

5.3.2 Planting Plan

Areas of temporary disturbance associated with construction of the perimeter ditch will be seeded immediately following construction with an appropriate seed mix.

5.4 Mitigation Monitoring Plan

5.4.1 Monitoring Plan

No long term monitoring is proposed. Project actions are self-mitigating.

5.4.2 Cost Estimate

Ditch excavation, which includes all work associated with excavation (such as compaction, stockpiling, and disposal) is \$36/cubic yards for quantities over 200 cubic yards. The proposed diversion ditch will be approximately 1,100 cubic yards, so cost for excavation would be approximately \$40,000. In addition, potential soil amendments may include tilling 3 inches of compost into existing soils to promote plant growth. The perimeter of the ditch is about 11.2 feet and the length is 2,300 linear feet, so a 3-inch-thick layer is about 240 cubic yards of compost. At \$66/cubic yards, that would be an additional \$16,000, including seeding. Total estimate cost is approximately \$56,000 for labor and materials, as shown in Table 8.

Table 8. Summary of Mitigation Cost Estimate

Task	Length (ft)	Width (ft)	Depth (ft)	Volume (cy)	Approximate Cost (\$ per cy) ^c	Total Cost (\$ per cy)
Ditch Excavation ^a				1,100	36	39,600
Soil Amendment ^b	2,300	11.2	0.25	239	66	15,742
Total						\$55,342

^a Includes excavation, compaction, stockpiling, disposal, and other associated work.

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^b Includes tilling, soil amendments, seeding, etc.

^c Includes cost of labor.



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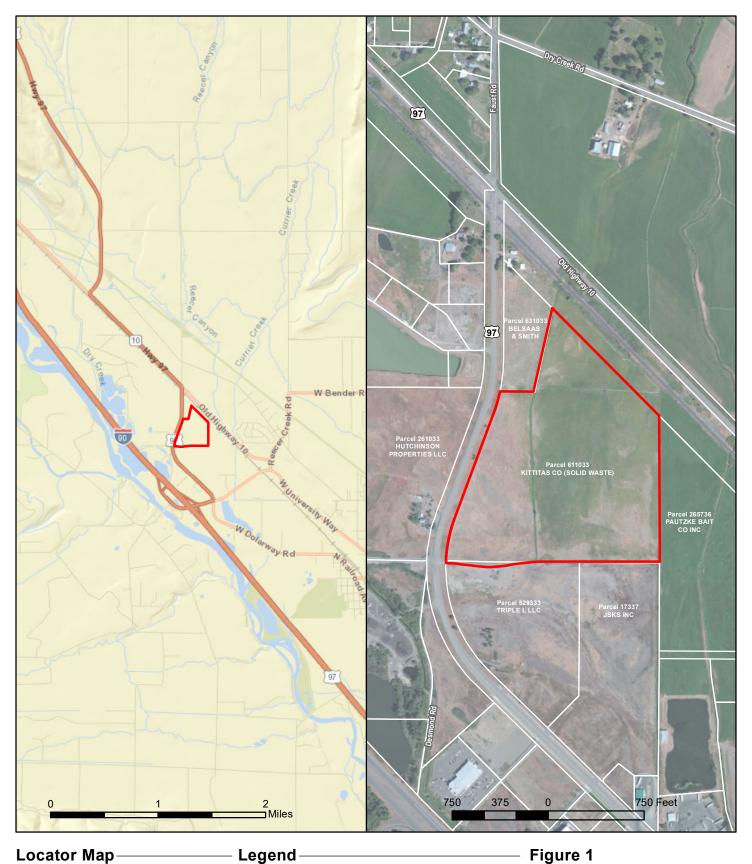
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Appendix A Figures



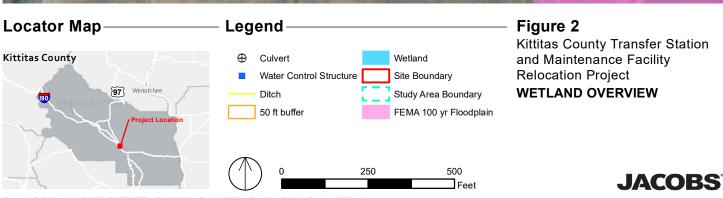
Locator Map

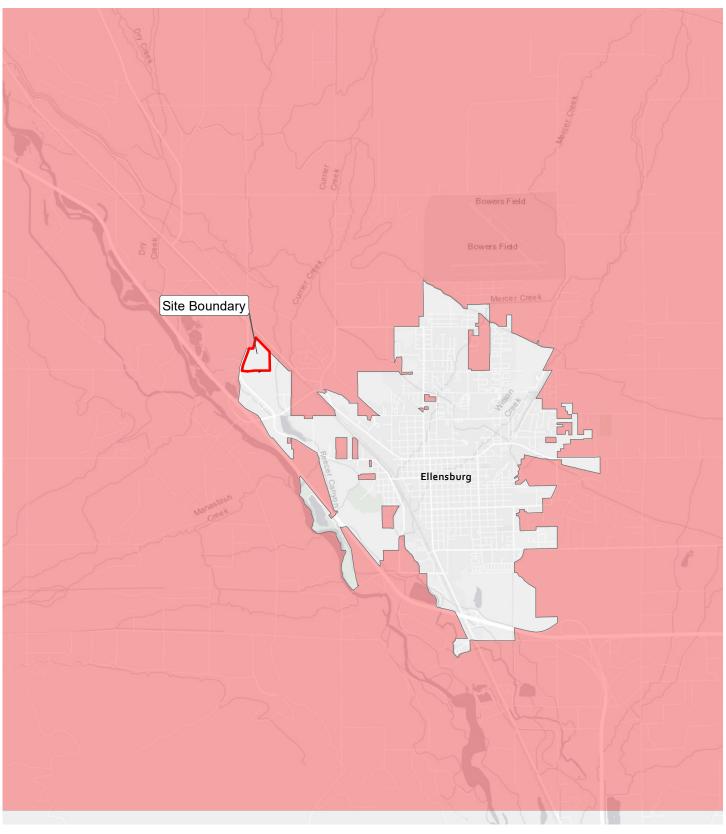
Kittitas County Site Boundary 97 Wenatchee

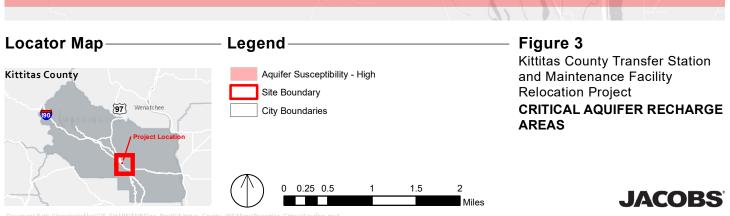
Figure 1 Kittitas County Transfer Station and Maintenance Facility
Relocation Project
SITE LOCATION



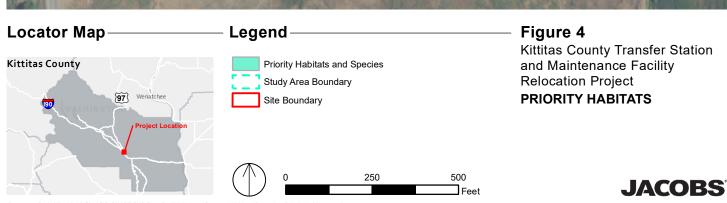


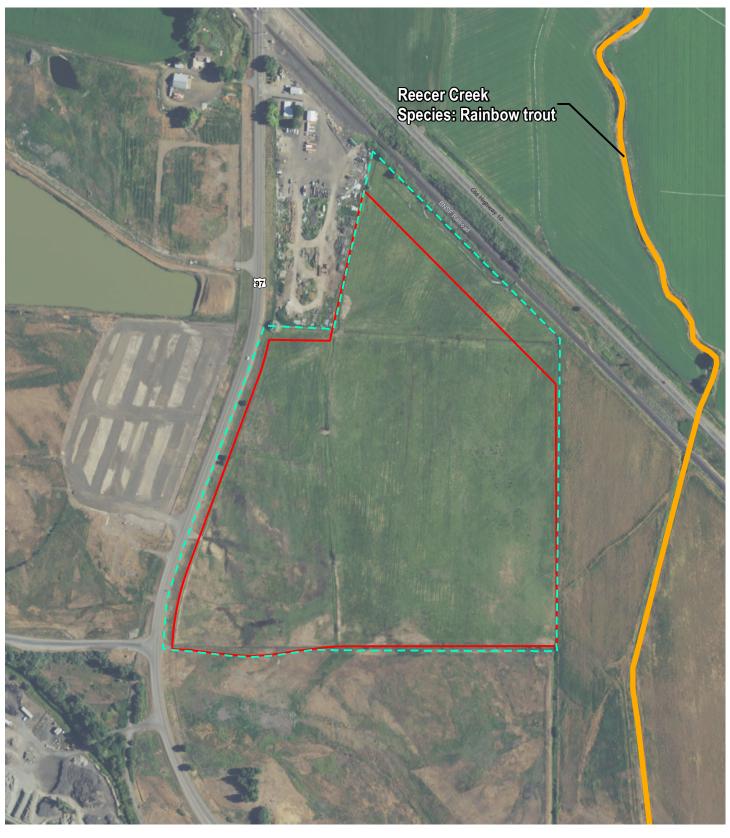








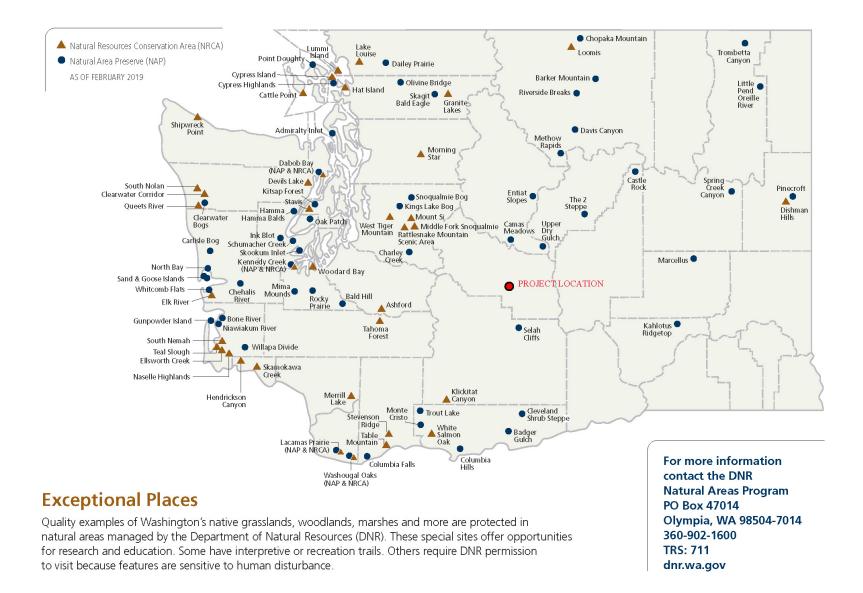




Legend Kittitas County Fish Distribution (StreamNet) Site Boundary Study Area Boundary O 250 500

Figure 5
Kittitas County Transfer Station and Maintenance Facility
Relocation Project
FISH DISTRIBUTION





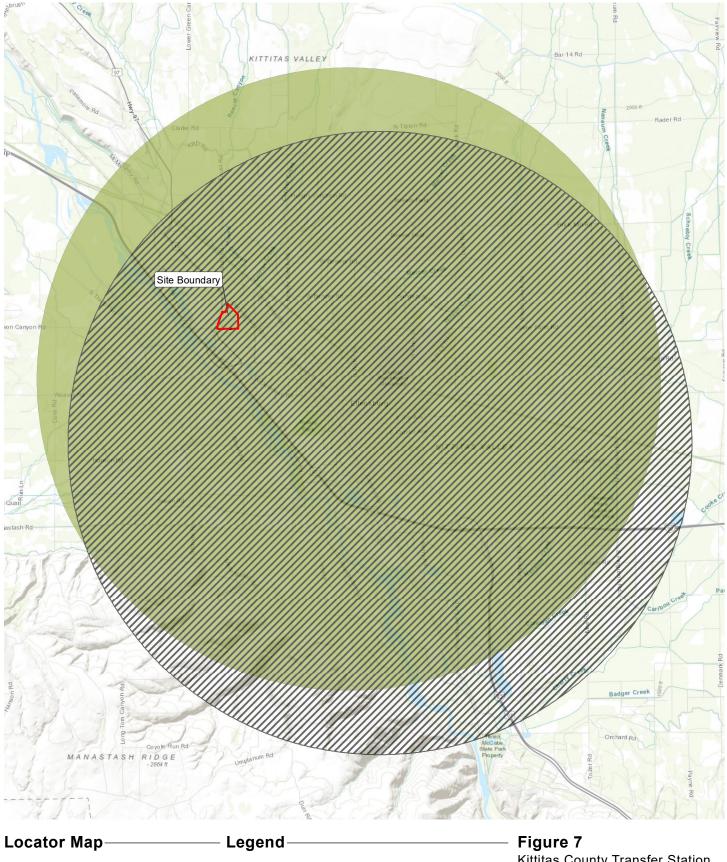
Locator Map Legend Natural Resources Conservation Areas (NRCA) Kittitas County Natural Area Preserve (NAP) **97** Wenatchee

Figure 6

Kittitas County Transfer Station and Maintenance Facility Relocation Project

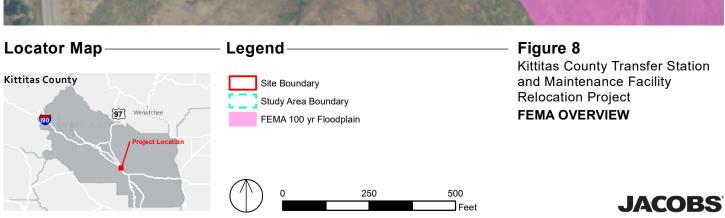
WASHINGTON NATURAL AREAS

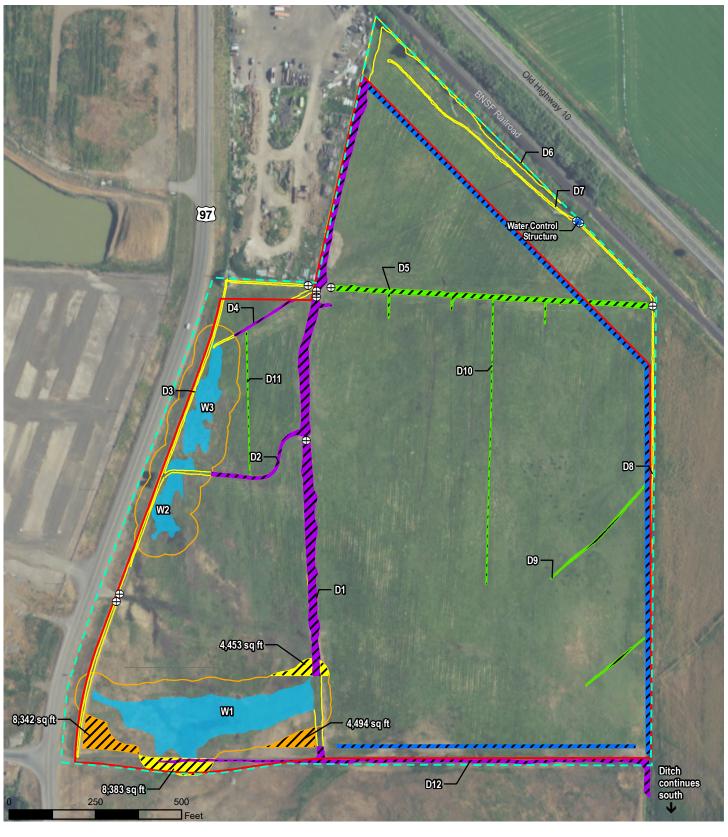




Legend Kittitas County Site Boundary Hackelia hispida var. disjuncta sagebrush stickweed Project Location Project Location Oregon goldenaster Figure 7 Kittitas County Transfer Station and Maintenance Facility Relocation Project WNHP HISTORIC RARE PLANT ELEMENT OCCURENCES Document Path: Nbrooksidefiles(GIs_SHARE]ENBG(Joo_ProjNK|Kittitas_County_WAMMapsi/Reportis_WNHP_HistoricRarePlant.mxd







Legend **Locator Map** Figure 9a Kittitas County Transfer Station Permanent Impacts to Existing Irrigation Ditches Kittitas County Culvert and Maintenance Facility Water Control Structure Relocation Project Permanent Impacts to Presumed Juristictional Ditches Ditch 97 Wenatchee **PROJECT IMPACTS AND** 50 ft buffer **MITIGATION -Wetland Buffers** Permanent Impacts to Wetland Buffer Wetland and Water of the U.S. Site Boundary Proposed Mitigation for Impacts to Presumed Jurisdictional Study Area Boundary Ditches

Proposed Mitigation for Impacts to Wetland Buffer



JACOBS

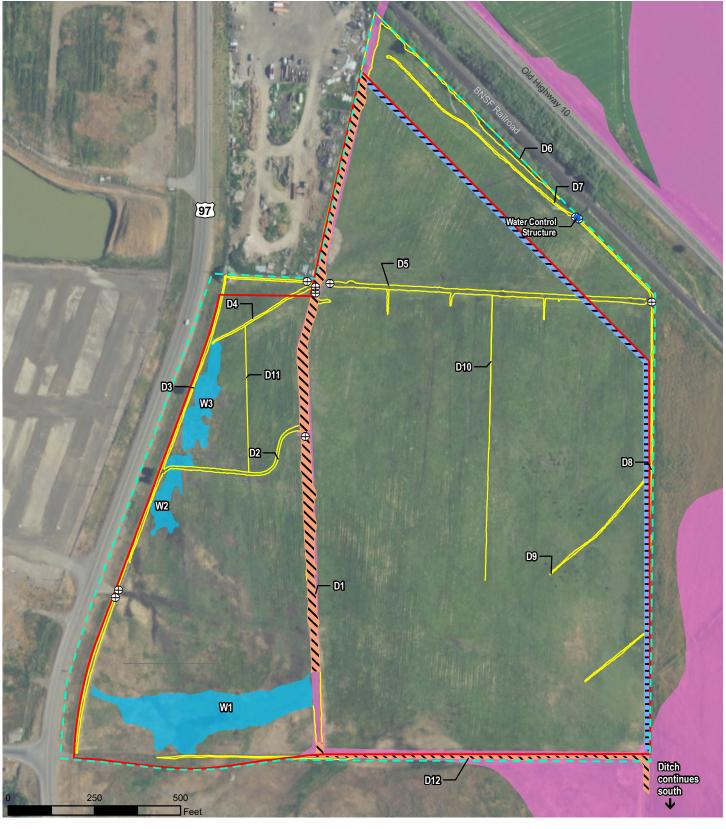


Figure 9b **Locator Map** Legend Kittitas County Transfer Station Kittitas County and Maintenance Facility Culvert Water Control Structure **Relocation Project** 97 Wenatchee Ditch **PROJECT IMPACTS AND** Wetland **MITIGATION -**FEMA 100 yr Floodplain **100-YEAR FLOODPLAIN** Site Boundary Study Area Boundary Mitigation for Impacts to 100 -Year Floodplain **JACOBS** Permanent Impacts to 100-Year Floodplain

Appendix B Wetland Delineation Report



Kittitas County Transfer Station and Maintenance Facility Relocation Project, Ellensburg, Kittitas County, Washington

Wetland Delineation Report

Revised August 2019 Kittitas County Solid Waste





Kittitas County Transfer Station and Maintenance Facility Relocation Project, Ellensburg, Kittitas County, Washington

Project No: 684127CH.03.01

Document Title: Wetland Delineation Report

Document No.: GES0829191707PDX

Revision: Draft

Date: August 2019

Client Name: Kittitas County Solid Waste

Project Manager: Tom Parker

Author: Peggy O'Neill, M.S.

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Acronyms and Abbreviations

Ecology Washington Department of Ecology
EPA Environmental Protection Agency

FAC facultative

FACU facultative upland FACW facultative wetland

HGM hydrogeomorphic [method]

HUC hydrologic unit [code]
Jacobs Engineering Group Inc.

NOAA National Oceanic and Atmospheric Administration

NRCS Natural Resources Conservation Service

NWI National Wetlands Inventory NWS National Wetland Service

OBL obligate

OHWM ordinary high water mark

PEM palustrine emergent

project Kittitas County Transfer Station and Maintenance Facility Relocation Project

PWS Professional Wetland Scientist

U.S. United States

USACE United States Army Corps of Engineers
USDA United States Department of Agriculture
USFWS United States Fish and Wildlife Service

USGS United States Geological Survey

WOUS water of the United States

WRIA Water Resource Inventory Area

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1. Introduction

1.1 Background

This report presents the findings of the wetland delineation conducted for Kittitas Solid Waste at the proposed Kittitas County Transfer Station and Maintenance Facility Relocation Project (hereafter referred to as the project) site in Ellensburg, Kittitas County, Washington. The proposed project site is located in the northwestern portion of the city of Ellensburg. Current use of the site is livestock grazing.

Kittitas County proposes to relocate its solid waste transfer station and Public Works maintenance facility to a new location. The projected population growth and solid waste management needs of Kittitas County, combined with frequent flooding events and limitations to its existing facilities, warrant construction of both new facilities. The new transfer station facility will include a transfer building, composting area, moderate-risk waste building, and recycling drop-off area as well as various administrative, parking, and other required elements. The new maintenance facility will include an administrative building, large equipment and vehicle storage, wash and maintenance bays, and salt, sand and de-icing chemical storage.

The wetland delineation survey area is composed of 56.49 acres including the 50-acre project area. The landscape surrounding the project is predominantly in agriculture.

This report identifies and describes aquatic resources in the survey area in support of Clean Water Act Sections 401 and 404 permitting. This report facilitates the following efforts:

- 1) Avoiding or minimizing impacts to aquatic resources during the design process
- 2) Documenting aquatic resource boundary determinations for review by regulatory authorities
- 3) Providing early indications of known sensitive species and historic/cultural properties within the survey area

The delineation results and conclusions presented in this report are considered preliminary, pending verification by the United States (U.S.) Army Corps of Engineers (USACE) Regulatory Branch.

1.2 Location

The project is located in the northwestern portion of the City of Ellensburg, in Kittitas County, Washington (Figure 1 in Appendix A). The project survey area is bounded to the west by State Highway 97 (US 97), to the north by the Burlington Northern railroad and Old Highway 10, and to the east and south by private, undeveloped properties. The Interstate 90 corridor is approximately 0.3 mile southwest of the survey area. The project survey area is within the U.S. Geological Survey (USGS) 7.5-minute Ellensburg North quadrangle in Section 28, Township 18 North, Range 18 East; Willamette Meridian (latitude 47.016181°, longitude -120.590401°) within the Upper Yakima watershed unit (Hydrologic Unit Code 17030001).

The survey area is in northwest Ellensburg and can be accessed from northbound Interstate 90 as follows:

- From Yakima, drive north on Interstate 90 for approximately 36 miles.
- Take exit 106 to West University Way (US 97).
- Turn right on West University Way (US 97).
- Continue about 0.1 mile on West University Way.
- At the roundabout, take the third right, continuing on US 97.
- Continue 0.7 mile north to a farm access road and gate at the southwestern end of the project site.



1.3 Delineators

The wetland delineation was conducted by Jacobs Engineering Group Inc. (Jacobs) wetland scientist Peggy O'Neill, PWS, on October 25 and 26, 2018. At the request of Lori White/Washington Department of Ecology (Ecology), additional field data were collected by Jacobs wetland scientist Jennifer Bader on May 7, 2019.

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2. Methods

The delineation was limited to the survey area (56.49 acres) that corresponds with Tax Map No. 18-18-28030008, parcel ID 611033. The following subsections describe the field sampling procedures and methods used to determine and map aquatic resources within the survey area. Site-specific information reviewed during the prefield investigation and collected during, or produced from, the field survey is provided in the appendixes. The following appendixes are provided:

- Appendix A, Figures
- Appendix B, Site Photographs
- Appendix C, Field Data Sheets
- Appendix D, Wetland Rating Forms
- Appendix E, Sensitive Species Data Search Results
- Appendix F, Plant Species Observed List

2.1 Prefield Investigation

General information on climate, vegetation, soils, hydrology, and existing wetlands was reviewed before the field survey. Data sources included USGS topographic maps; National Wetlands Inventory (NWI) (USFWS, 2018b) and National Hydrography Dataset maps (USGS, 2018); regional and local precipitation records; Web Soil Survey (USDA-NRCS, 2018); and Google Earth satellite imagery from 1990 to 2018 (Google Earth Pro, 2018).

2.2 Field Survey

2.2.1 Method for Delineating Wetlands

The survey method for identifying wetlands followed the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory, 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0* (USACE, 2008a). These methods use three criteria (vegetation, soils, and hydrology) to determine the presence of wetlands.

At each delineation sample point, the three required criteria were evaluated. Data collection included the following steps:

- Plant species were identified, and percent cover was visually estimated and recorded. Dominant species included the most abundant species whose cumulative cover accounted for at least 50 percent of the total cover, as well as any species that accounted for at least 20 percent of the total vegetative cover. The wetland indicator status for plant species was determined using the National Wetland Plant List (Lichvar et al., 2016).
- 2) Soil characterization was determined from direct observation of soils between 0 and 18 inches below ground surface.
- 3) Wetland hydrology was determined from direct observation of soil saturation and inundation or other indicators. Onsite photographs are provided in Appendix B.

Additional soil pits were dug throughout the site to document hydric/nonhydric soil conditions and provide additional detail for wetland boundary mapping. Aquatic resources within the survey area were mapped using a Trimble GeoXH global positioning system with submeter accuracy.

2.2.2 Method for Delineating Nontidal Stream Boundaries

Within nontidal waters, in the absence of adjacent wetlands, the extent of USACE jurisdiction is defined by the ordinary high water mark (OHWM). In 33 *Code of Federal Regulations* 328.3, the OHWM is defined as the "line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of



soil, destruction of terrestrial vegetation, or the presence of litter and debris" (Environmental Laboratory, 1987). Generally, USACE considers the OHWM to be the elevation to which water flows at a 2-year frequency (for example, 50 years out of 100 years). Typically, OHWM is indicated by the presence of a defined streambed with bank shelving but may also include flow lines; sediment deposition or scour; and mineral staining, salt deposits, or deep or surficial cracking.

Any delineation of nontidal stream boundaries identified is consistent with OHWM Regulatory Guidance Letter No. 05-05 (USACE, 2005). Additionally, *A Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Arid West Region of the United States* (USACE, 2008b) was used.

Within the survey area, OHWM indicators were identified and mapped in the field. OHWM indicators were recorded, and the average width and depth of OHWM channels were documented. Measured field data were compared with aerial photographs to refine and adjust OHWM boundaries. Photographs of the channel are provided in Appendix B.

2.2.3 Method for Conducting Wetland Functional Assessments

Wetland Functional Assessments were conducted according to the *Washington State Wetland Rating System for Eastern Washington. 2014 Update* (Ecology, 2014). All onsite wetlands were rated as "Slope" wetlands according to this methodology.

2.2.4 Information Sources

Before conducting the field investigation, the following documents were reviewed:

- Wetlands Mapper (USFWS, 2018b) (Figure 2)
- National Hydrography Dataset (USGS, 2018) (Figure 3)
- Web Soil Survey (USDA-NRCS, 2018b) (Figure 4)
- U.S. Geological Survey Topographic Map, North Ellensburg, Washington Quadrangle (USGS, 1983) (Figure 5)
- Color Aerial Photography (GoogleEarth Pro, 2018)
- National Weather Service Preliminary Monthly Climate Data (NOAA-NWS, 2018)
- Monthly Precipitation Data (Office of Washington Climatologist, 2018)
- WETS Table: Cle Elum, Washington Station (USDA-NRCS, 2018a)

2-2 GES0829191707PDX



3. Existing Conditions and Results

3.1 Existing Conditions

3.1.1 Landscape Setting

Kittitas County is situated in central Washington on the eastern slopes of the Cascade Mountains between the Cascade Crest and the Columbia River in the Columbia River basin. The County encompasses 2,300 square miles within three major basins or Water Resource Inventory Areas (WRIAs):

- Upper Yakima (WRIA 39)
- Alkali Squilchuck (WRIA 40)
- Naches (WRIA 38)

The greater Ellensburg area is location in the Upper Yakima WRIA 39.

The project survey area is within the Pleistocene Lake Basins Ecoregion (Level IV) within the Columbia Plateau (Level III) Ecoregion. The Pleistocene Lake Basins ecoregion is a nearly level to undulating lake plain that once contained vast Pleistocene lakes that were created by flood waters from glacial lakes Missoula and Columbia. Lake Lewis formed from the damming of the Columbia River at Wallula Gap on the southern Washington border, and covered 4,825 square kilometers (3,000 square miles) of the Quincy and Pasco basins and Walla Walla and Yakima River valleys. The Kittitas Valley, where Ellensburg is located, has been included in this subregion even though it was not part of glacial Lake Lewis because of its position within the Yakima Folds subregion and because it has a similar lacustrine history, climate, soil, and land use capability.

The lake basins are in the driest areas of the rain shadow of the Cascade Range, receiving 15.2 to 30.5 centimeters (6 to 12 inches) of precipitation per year. Where present, native vegetation consists of needle-and-thread (*Hesperostipa comata*), Indian ricegrass (*Achnatherum hymenoides*), bluebunch wheatgrass (*Pseudoroegneria spicate*), Sandberg bluegrass (*Poa secunda*), and basin big sagebrush (*Artemisia tridentata*). Non-native cheatgrass (*Bromus tectorum*) covers broad areas. The native sagebrush hydrology and plant assemblages have been degraded by disturbance from large irrigation projects that provide Columbia and Yakima River water via a system of pumps and canals.

3.1.2 Topography

The site is flat, sloping down gradually toward the southeastern corner. Elevation ranges from 1,554 feet above mean sea level in the northernmost corner of the site to approximately 1,540 feet in the southeastern corner of the site. The site is bisected by multiple interconnecting excavated ditches or ditch segments. Precipitation collects in microtopography along the northern plowed boundary of the site. At the time of the site visit, shallow flow was present in one ditch, the large north-south flowing ditch, D1. Stormwater appears to flow offsite from this ditch to an excavated ditch just south of and perpendicular to the southern site boundary.

3.1.3 Plant Communities

Vegetation on the site is characterized as heavily grazed pasture grasses in upland areas with natural vegetation confined to wetter areas and ditches (native sedges (*Carex* sp.), rushes (*Juncus* sp.), and forbs). The large central ditch (D1) is densely vegetated throughout much of its length with a mix of native and non-native wetland plant species including grasses, sedges, rushes, willow dock (*Rumex salicifolius*), and watercress (*Nasturtium officinale*).

3.1.4 Soils

Seven soil series are mapped within the survey area:



- Cleman very fine sandy loam, 0 to 2 percent slopes
- Nanum ashy loam, 0 to 2 percent slopes
- Woldale clay loam, 0 to 2 percent slopes
- Zillah silt loam, 0 to 2 percent slopes
- Brickmill gravelly ashy loam, 0 to 2 percent slopes
- Mitta ashy silt loam, 0 to 2 percent slopes
- Nack-Opnish complex, 0 to 2 percent slopes

Mapped soil series are presented on Figure 4 and summarized in Table 1.

Table 1. Soil Map Units Identified in the Survey Area

	. Son Map Office Ident		
Soil Map Unit	Map Unit Name	Hydric Soil Designation	Description
424	Cleman very fine sandy loam, 0 to 2 percent slopes	Nonhydric	The Cleman series consists of very deep, well drained soils formed in alluvium. Cleman soils are on alluvial fans and flood plains. Slopes are 0 to 15 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 50 degrees F.
			Typical soil profile:
			0 to 10 inches; grayish brown (10YR 5/2) very fine sandy loam, dark brown (10YR 3/3)
			10 to 25 inches; brown (10YR 5/3) fine sandy loam, dark brown (10YR 3/3)
			Cleman soils are well drained; very slow to medium runoff; moderately rapid permeability.
			These soils range from no flooding to rare flooding. These soils are used mainly for irrigated orchard, hay and pasture production, and some livestock grazing and dryland cropland. Native vegetation is bluebunch, wheatgrass and Wyoming big sagebrush
480	Nanum ashy loam, 0 to 2 percent slopes	Nonhydric	The Nanum series consists of very deep, somewhat poorly drained soils that formed in alluvium with an influence of volcanic ash in the surface. Nanum soils are on alluvial fans and terraces. Slopes are 0 to 5 percent. The mean annual precipitation is about 10 inches and the mean annual air temperature is about 49 degrees F.
			Typical soil profile:
			0 to 8 inches; dark gray (10YR 4/1) ashy loam, black (10YR 2/1)
			8 to 15 inches; dark grayish brown (10YR 4/2) ashy loam, black (10YR 2/1)
			15 to 21 inches; grayish brown (10YR 5/2) ashy clay loam, very dark grayish brown (10YR 3/2).
			Nanum soils are somewhat poorly drained; slow runoff; moderately slow permeability. This soil is irrigated and drained. This soil has an irrigation-induced water table with its uppermost limit occurring sometime between the mid-May to mid-October growing season. This soil typically is not subject to flooding although some areas may have occasional flooding for brief periods from January to April.
			These soils are used for irrigated cropland production and livestock grazing. When irrigated, hay, oats, wheat, corn, potatoes, and peas are among the crops grown.
580	Woldale clay loam, 0 to 2 percent slopes	Nonhydric	The Woldale series consists of very deep, somewhat poorly drained soils formed in alluvium. Woldale soils are in depressional and low lying areas on piedmont slopes grading from mountain foot slopes to basin floors. Slopes are 0 to 5 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.

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Table 1. Soil Map Units Identified in the Survey Area

Soil	. Son map onnes lucine		
Map Unit	Map Unit Name	Hydric Soil Designation	Description
			Typical soil profile:
			0 to 5 inches; dark grayish brown (10YR 4/2) clay loam, black (10YR 2/1)
			• 5 to 16 inches; very dark gray (10YR 3/1) clay, black (10YR 2/1)
			16 to 31 inches; variegated grayish brown (2.5Y 5/2) and grayish brown (10YR 5/2) clay, dark grayish brown (2.5Y 4/2).
			Woldale soils are somewhat poorly drained; slow runoff or ponded; slow permeability. This soil has an irrigation induced water table with its uppermost limit occurring sometime between the mid-May to mid-October growing season.
			This soil is used for cropland when drained and irrigated. Crops commonly grown are corn, wheat, hay, and pasture. In natural conditions the soil is used for the production of native pasture. Native vegetation consists of water-tolerant grasses.
598	Zillah silt loam, 0 to 2 percent slopes	Hydric	The Zillah series consists of very deep, poorly drained soils that formed in alluvium. These soils are on flood plains. Slopes are 0 to 5 percent. The mean annual precipitation is about 7 inches and the mean annual temperature is about 49 degrees F.
			Typical soil profile:
			0 to 2 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2)
			2 to 19 inches; grayish brown (10YR 5/2) silt loam, very dark grayish brown (10YR 3/2)
			Zillah soils are poorly drained; very slow runoff or ponded; moderate permeability. Zillah soils are subject to frequent or occasional flooding for long periods from January to March unless protected. This soil has an irrigation induced water table with its uppermost limit occurring at some time between April and November.
			These soils are used for pasture, hay, and wildlife habitat. Some areas have been drained and are used for irrigated crops. Native vegetation is willows, cottonwood, sedges, and annuals.
601	Brickmill gravelly ashy loam, 0 to 2 percent slopes	Nonhydric	The Brickmill series consists of very deep, moderately well drained soils formed in old alluvium with an influence of volcanic ash in the upper part. Brickmill soils are on piedmont slopes grading from mountain footslopes to basin floors. Slopes are 0 to 5 percent. The mean annual precipitation is about 11 inches and the mean annual temperature is about 49 degrees F.
			Typical soil profile:
			0 to 5 inches; very dark grayish brown (10YR 3/2) gravelly ashy loam, very dark brown (10YR 2/2)
			 5 to 12 inches; very dark grayish brown (10YR 3/2) gravelly ashy loam, very dark brown (10YR 2/2)
			12 to 28 inches; brown (10YR 5/3) very gravelly ashy sandy
			loam, brown (10YR 4/3)
			Brickmill soils are moderately well drained; slow runoff; permeability is moderate above the lithologic discontinuity, and rapid to very rapid below. This soil has an irrigation induced water table at 30 to 40 inches with its uppermost limit occurring at some time between during the mid-May to mid-October growing season.
			These soils are used for pasture, limited cropland, and wildlife habitat. Native vegetation is bluebunch wheatgrass, Sandberg bluegrass, and big
			sagebrush.
621	Mitta ashy silt loam, flooded, 0 to 2 percent slopes	Nonhydric	The Mitta series consists of very deep, moderately well drained soils that formed in alluvium mixed with volcanic ash in the upper part. Mitta soils are on flood plains, fan aprons, fan skirts and inset fans. Slopes are 0 to 2



Table 1. Soil Map Units Identified in the Survey Area

Soil	. Son Map Offits Ident		
Map Unit	Map Unit Name	Hydric Soil Designation	Description
Offic	map one Name	Designation	percent. The mean annual precipitation is about 10 inches and the mean
			annual temperature is about 49 degrees F.
			Typical soil profile:
			0 to 6 inches; dark gray (10YR 4/1) ashy silt loam, black (10YR 2/1)
			6 to 15 inches; dark gray (10YR 4/1) ashy silt loam, black (10YR 2/1)
			15 to 24 inches; dark gray (10YR 4/1) ashy silt loam, black (10YR 2/1)
			Mitta soils are moderately well drained; slow runoff; moderately slow permeability. This soil is irrigated and drained. This soil has an irrigation-induced water table at 30 to 60 inches during the mid-May to mid-October growing season.
			These soils are used for irrigated crop production and livestock grazing. When irrigated, hay, oats, wheat, corn, potatoes, and peas are among the crops grown.
795	Nack-Opnish complex, 0 to 2 percent slopes	Nonhydric	The Nack series consists of very deep, somewhat poorly drained soils formed in alluvium over flood deposits with an influence of volcanic ash in the surface. These soils are on alluvial fans. Slopes are 0 to 5 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.
			Typical soil profile:
			0 to 6 inches; brown (10YR 4/3) ashy loam, very dark grayish brown (10YR 3/2)
			6 to 12 inches; brown (10YR 4/3) clay loam, very dark grayish brown (10YR 3/2)
			12 to 15 inches; brown (10YR 5/3) clay loam, very dark grayish brown (10YR 3/2)
			15 to 39 inches; dark yellowish brown (10YR 4/4) extremely gravelly sandy clay; dark brown (10YR 3/3)
			Nack soils are somewhat poorly drained; slow runoff; moderately slow permeability. This soil has an irrigation-induced water table with its uppermost limit occurring sometime between the mid-May to mid-October growing season.
			These soils are used for irrigated crop production and livestock grazing. Native vegetation is greasewood and saltgrass. When irrigated, hay, oats, wheat, corn, potatoes, and peas are among the crops grown.
			The Opnish series consists of very deep, moderately well drained soils formed in alluvium with an influence of volcanic ash in the surface. These soils are on alluvial fans. Slopes are 0 to 2 percent. The mean annual precipitation is about 10 inches and the mean annual temperature is about 49 degrees F.
			Typical soil profile:
			0 to 8 inches; dark gray (10YR 4/1) ashy loam, very dark brown (10YR 2/2)
			8 to 13 inches; dark gray (10YR 4/1) ashy clay loam; very dark brown (10YR 2/2)
			13 to 19 inches; dark grayish brown (10YR 4/2) clay loam, very dark gray (10YR 3/1
			Opnish soils are moderately well drained; slow runoff; moderately slow permeability. This soil has an irrigation-induced water table with its uppermost limit occurring at some time between the mid-May to mid-October growing season.

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Table 1. Soil Map Units Identified in the Survey Area

Soil Map Hydric Soil Unit Map Unit Name Designation		Description	
		This soil is used for irrigated crop production and livestock grazing. Native vegetation is greasewood and saltgrass. When irrigated, hay, oats, wheat, corn, potatoes, and peas are among the crops grown.	

3.1.5 Hydrology

Annual precipitation in the region averages approximately 22.47 inches (Office of Washington State Climatologist, 2018). Precipitation data were reviewed for the nearest weather station, located at Station 452505, Ellensburg, Washington. Precipitation for the water year beginning October 2017 through September 2018 was 7.63 inches (Table 2a) and precipitation for the water year May 2018 through April 2019 was 8.41 inches (Table 2b). These levels are considerably below the normal range (19.71 to 25.23 inches) for these time periods in this area.

Table 2a. Monthly Precipitation Data Prior to October 2018 Field Survey

Station 452505 Ellensburg, WA

Date	Actual Precipitation ^a (inches)	Normal Range ^{b,c} (inches)	Outside Normal Range (inches)
October 2017	1.14	0.72 – 2.14	
November 2017	1.83	2.61 – 4.67	- 0.78
December 2017	0.73	3.07 – 5.02	- 2.34
January 2018	0.95	2.25 – 4.51	- 1.3
February 2018	0.35	1.56 – 3.18	-1.21
March 2018	0.65	1.14 – 2.02	- 0.49
April 2018	0.77	0.78 – 1.36	- 0.01
May 2018	0.59	0.57 – 1.12	
June 2018	0.61	0.57 – 1.17	
July 2018	0.00	0.2 – 0.55	- 0.2
August 2018	0.00	0.2 – 0.68	- 0.2
September 2018	0.01	0.31 – 1.08	-0.3
Total	7.63	19.71 – 25.23	-12.08

^a Source: Office of Washington State Climatologist, 2017.

^b Source: USDA-NRCS, 2018a.

^c "Normal Range" is the range within which precipitation for the given period has a 70 percent chance of occurring.



Table 2b. Monthly Precipitation Data Prior to May 2019 Field Survey

Station 452505 Ellensburg, WA

Date	Actual Precipitation ^a (inches)	Normal Range ^{b, c} (inches)	Outside Normal Range (inches)
May 2018	0.59	0.57 – 1.12	
June 2018	0.61	0.57 – 1.17	
July 2018	0.00	0.2 – 0.55	- 0.2
August 2018	0.00	0.2 – 0.68	- 0.2
September 2018	0.01	0.31 – 1.08	-0.3
October 2018	1.44	0.72 – 2.14	
November 2018	0.37	2.61 – 4.67	-2.24
December 2018	1.17	3.07 – 5.32	-1.90
January 2019	1.03	2.25 – 4.51	-1.22
February 2019	1.90	1.56 – 3.18	
March 2019	0.41	1.14 – 2.02	-0.73
April 2019	0.88	0.78 – 1.36	
Total	8.41	19.71 – 25.23	-11.30

^a Source: Office of Washington State Climatologist, 2017.

Daily precipitation data for the 4-week period preceding the October 2018 field investigation were also reviewed. Table 3a presents the daily precipitation recorded at the *ELLENSBURG*, *WA*, *US USC00452505* recording station. No measurable precipitation was recorded for that period.

Table 3a. Daily Precipitation Data Four Weeks Prior to October 2018 Field Survey^a

Ellensburg, WA, US USC00452505

Date	Precipitation (inch)
9/27/2018	0.0
9/28/2018	0.0
9/29/2018	0.0
9/30/2018	0.0
10/1/2018	0.0
10/2/2018	0.0
10/3/2018	0.0

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^b Source: USDA-NRCS, 2018a.

^c "Normal Range" is the range within which precipitation for the given period has a 70 percent chance of occurring.



Table 3a. Daily Precipitation Data Four Weeks Prior to October 2018 Field Survey^a

Ellensburg, WA, US USC00452505

Date	Precipitation (inch)
10/4/2018	0.0
10/5/2018	0.0
10/6/2018	0.0
10/7/2018	0.0
10/8/2018	0.0
10/9/2018	0.0
10/10/2018	0.0
10/11/2018	0.0
10/12/2018	0.0
10/13/2018	0.0
10/14/2018	0.0
10/15/2018	0.0
10/16/2018	0.0
10/17/2018	0.0
10/18/2018	0.0
10/19/2018	0.0
10/20/2018	0.0
10/21/2018	0.0
10/22/2018	0.0
10/23/2018	0.0
10/24/2018	0.0
Total:	0.0

^a Source: National Climate Data Center (NOAA, 2018).

Daily precipitation data for the 4-week period preceding the May 2019 field investigation were also reviewed. Table 3b presents the daily precipitation recorded at the *ELLENSBURG*, *WA*, *US USC00452505* recording station. No measurable precipitation was recorded for that period.

Table 3b. Daily Precipitation Data Four Weeks Prior to May 2019 Field Survey^a

Ellensburg, WA, US USC00452505

Date	Precipitation (inch)
4/9/2019	0.18
4/10/2019	Т
4/11/2019	0.0
4/12/2019	0.02
4/13/2019	0.0



Table 3b. Daily Precipitation Data Four Weeks Prior to May 2019 Field Survey^a

Ellensburg, WA, US USC00452505

Date	Precipitation (inch)
4/14/2019	0.01
4/15/2019	0.0
4/16/2019	0.0
4/17/2019	0.0
4/18/2019	0.0
4/19/2019	0.0
4/20/2019	0.0
4/21/2019	0.02
4/22/2019	0.0
4/23/2019	0.0
4/24/2019	0.0
4/25/2019	0.0
4/26/2019	0.0
4/27/2019	0.0
4/28/2019	0.0
4/29/2019	0.0
4/30/2019	0.0
5/1/2019	0.0
5/2/2019	0.0
5/3/2019	0.0
5/4/2019	0.0
5/5/2019	0.0
5/6/2019	0.0
Total:	0.23

^a Source: National Climate Data Center (NOAA, 2018)

Hydrologic conditions on the site consisted of soils saturated to the surface throughout most of the wetland areas, and in and adjacent to most of the ditches. The wetlands areas appear to derive water primarily from groundwater, along with upland runoff and direct precipitation.

3.1.6 Existing Wetland Mapping

The survey area is in the Upper Yakima watershed (Hydrologic Unit Code 17030001), Currier Creek subwatershed (hydrologic unit [HUC] 170300010510). The National Hydrography Dataset indicates no water features on or immediately adjacent to the site (USGS, 2018) (Figure 3). The NWI identifies one wetland feature within the survey area in the southwestern portion of the site (USFWS, 2018b). This mapped wetland is part of a larger wetland complex, extending offsite to the west. The NWI mapped feature is identified PEM1C (palustrine emergent, persistent, seasonal).

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3.1.7 Sensitive Plant, Fish, and Wildlife

According to USACE 2016 guidance, delineation reports should include preliminary information on known sensitive species or cultural resources that occur within the survey area (USACE, 2016). A database review was conducted of the USFWS Information for Planning and Consultation website (USFWS, 2018a) to identify federal special-status wildlife and plant species that are known or have the potential to occur in or near the survey area.

3.2 Findings

A field delineation of the entire survey area identified 2.07 acres of palustrine emergent (PEM) wetlands, and 10,433 linear feet of excavated ditches (nonwetland waters). The delineated aquatic resources are described in Section 4.2, summarized in Table 4, and mapped on Figures 6a to 6c.

Table 4. Delineated Aquatic Resources

Feature ID	Classification (Cowardin et al., 1979)	Latitude/ Longitude	Size (acres)	Size (linear feet)
Wetlands (3)				
Wetland-1	PEM	47.01443°/ -120.5926°	1.44	
Wetland-2	PEM	47.0160°/ -120.5929°	0.26	
Wetland-3	PEM	47.0169°/ -120.5924°	0.37	
	TOTAL Wetlands		2.07	
Nonwetland Waters (12)				
Ditch D1	Perennial	47.0164°/ -120.5913°	0.75	2,170
Ditch D2	Intermittent	47.0163°/ -120.5922°	0.07	473
Ditch D3	Intermittent	47.0161°/ -120.5931°	0.12	1,705
Ditch D4	Intermittent	47.0175°/ -120.5918°	0.03	340
Ditch D5	Intermittent	47.0177°/ -120.5894°	0.25	1,096
Ditch D6	Intermittent	47.0191°/ -120.5894°	0.04	760
Ditch D7	Intermittent	47.0189°/ -120.5892°	0.07	1,044
Ditch D8	Intermittent	47.0164°/ -120.5873°	0.07	1,185
Ditch D9	Intermittent	47.0158°/ -120.5878°	0.02	415
Ditch D10	Intermittent	47.01666°/ -120.5896°	0.03	825
Ditch D11	Intermittent	47.0168°/ -120.5920°	0.02	420
Ditch D12 (partially offsite)	Intermittent	47.0140°/ -120.5908°	0.20	1,427
	TOTAL Nonwetland Waters	Perennial	0.75	2,170 feet
		Intermittent	0.92	9,690 feet

3.2.1 Wetlands

Three wetlands (2.074 acres) were delineated within the survey area. Each wetland resource summarized in Table 4 is described in the following subsections. An aquatic resource delineation map



(Figures 6a to 6c) is provided in Appendix A and site photographs are provided in Appendix B. A list of plant species observed during the survey is provided in Appendix F. Field data sheets collected within and adjacent to the wetland areas are provided in Appendix C. A preliminary jurisdictional determination is provided in Table 5. In addition to the three delineated wetlands, ten additional areas were investigated as potential wetlands and were determined to not meet wetland criteria. These were documented with photos and field data sheets (also provided in Appendix B and Appendix C, respectively). Wetland Rating Forms are provided in Appendix D.

Wetland-W1, Palustrine Emergent Wetland (1.44 acres)

Wetland W1 (1.44 acres) is a PEM (Cowardin)/Slope (hydrogeomorphic [HGM]) wetland located in the southwestern portion of the survey area. Vegetation is comprised of heavily grazed planted grasses including creeping bentgrass (*Agrostis stolonifera*) (FACW) and Kentucky bluegrass (*Poa pratensis*) (FAC), willow dock (*Rumex salicifolius*) (FACW), celery leaved buttercup (*Ranunculus sceleratus*) (OBL), and common rush (*Juncus effusus*) (FACW). Soils sampled are a very dark gray (10YR 3/1) silty clay from 0 to 8 inches with 5 percent redoximorphic features (5.5YR 4/6). From 8 to 18 inches, soils continue as a very dark grayish-brown (10YR 3/2) clayey silt loam with up to 10 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W1 meets hydric soil indicator F6: Redox Dark Surface. Soil saturation was observed between eight and ten inches.

Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (*Festuca idahoensis*) (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) with no redoximorphic features typically observed. Wetland hydrology was not observed at the adjacent upland data points. Soils were not saturated in the upper 18 inches.

Wetland 1 is a Category IV wetland, requiring a 50-foot buffer (Appendix D).

Wetland-W2, Palustrine Emergent Wetland (0.26 acres)

Wetland W2 is a PEM (Cowardin)/Slope (HGM) wetland (0.26 acre) located in the north-central portion of the survey area. Vegetation is dominated and comprised of heavily grazed planted facultative species including creeping bentgrass (FACW), Kentucky bluegrass (FAC), willow dock (FACW), watercress (*Nasturtium officinale*) (OBL), and common rush (FACW). Soils sampled are a very dark gray (10YR 3/1) cobbly silt loam from 0 to 8 inches with no redoximorphic features. From 8 to 18 inches, soils continue as a very dark gray (10YR 3/1) gravelly silty clay with 5 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W2 meets hydric soil indicator F6: Redox Dark Surface. Soils were saturated below six inches.

Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) with no redoximorphic features typically observed. Wetland hydrology was not observed at the adjacent upland data points. No soil saturation was observed in the upper 18 inches.

Wetland 2 is a Category IV wetland, requiring a 50-foot buffer (Appendix D).

Wetland-W3, Palustrine Emergent Wetland (0.37 acres)

Wetland-W3 is a PEM (Cowardin)/Slope (HGM) wetland (0.37 acre) located in the north-central portion of the survey area. Vegetation is dominated by comprised of heavily grazed planted grasses including creeping bentgrass (FACW) and Kentucky bluegrass (FAC), willow dock (FACW), watercress (OBL), and celery-leaved buttercup (OBL). Soils sampled are a very dark gray (10YR 3/1) cobbly silt loam from 0 to 6 inches with no redoximorphic features. From 6 to 18 inches, soils continue as a very dark gray (10YR 3/1) gravelly silty clay with 5 percent redoximorphic features (7.5YR 4/6). Soils within Wetland W3 meets hydric soil indicator F6: Redox Dark Surface. Soils were saturated at 8 inches.

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Adjacent upland areas are dominated by pasture grasses, predominantly Idaho fescue (FACU) and Kentucky bluegrass (FAC). Soils do not meet the hydric soil indicator for F6 Redox Dark Surface because they do not contain at least 4 inches of redox within the top 12 inches of soil profile. Upland soils were very dark grayish-brown (10YR 3/2) with no redoximorphic features typically observed. Wetland hydrology was not observed at the adjacent upland data points. No soil saturation was observed in the upper 18 inches.

Wetland 3 is a Category IV wetland, requiring a 50-foot buffer (Appendix D).

Table 5. Wetlands: Preliminary Jurisdictional Determination

Wetland ID	Bordering, Contiguous with, or Neighboring a WOUS	Within 100 feet of the OHWM of a WOUS	Within the 100-Year Floodplain and Within 1,500 Feet of a WOUS	Potential Jurisdiction Notes
Wetland-W1	Yes	Yes	No	Presumed jurisdictional as it is contiguous with ditch D1, which is presumed jurisdictional
Wetland-W2	Yes	Yes	No	Potentially jurisdictional as it is contiguous with ditch D2, which is potentially jurisdictional.
Wetland-W3	Yes	Yes	No	Potentially jurisdictional as it is contiguous with ditch D4, which is potentially jurisdictional.

3.2.2 Nonwetland Waters

A system of interconnected excavated ditches (nonwetland waters) is present on the project site. The field investigation identified and delineated eleven ditches (10,433 lineal feet) within the survey area. A water control structure at the northern end of the site appears to regulate flow to the ditches from offsite, presumable for irrigation purposes. The ditches are also presumed to carry flow in response to precipitation events. All ditches show evidence of trampling by livestock.

Each ditch is described in the following subsections and summarized in Table 4. Aquatic resource delineation maps (Figures 6a to 6c) are provided in Appendix A; photographs are provided in Appendix B; watercourse or ditch characterization field data forms are provided in Appendix C. Preliminary jurisdictional determinations are provided in Table 6.

Ditch D1

Ditch D1 is an excavated ditch that traverses the site from north to south (Appendix B2, Photos 1-4 and 17-20; Appendix C2, Data Form D1). The ditch is approximately 80 percent vegetated with vegetation dominated by watercress (*Nasturtium officinale*) and willow dock (*Rumex salicifolius*). Flow was present to a depth of 6 to 8 inches with areas of ponding 1 to 1.5 feet deep. Ponding occurs up and downstream at the locations of two culvert crossings, a ford crossing, and areas of dense vegetation. Flow is assumed to be perennial due to the amount of flow present during the field visit in late October following a drier-than-normal summer and no measurable precipitation in the month prior to the field visit.

Clear bed and banks are present. Ditch D1 averages 15 feet across at top of bank. Depth from top of bank to substrate averages 3 to 4 feet. Ditch substrate consists of silty clay with some gravels. The ditch drains to another ditch offsite, appearing to eventually reach the Yakima River. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D2

Ditch D2 is an excavated ditch that traverses the site east to west. D2 connects ditches D1 and D3 (Appendix B2, Photo 7; Appendix C2, Data Form D2). No flow was present in the ditch at the time of the



field visit. Direction of flow is not clear, though based on elevation (GoogleEarth Pro, 2018), it appears to convey water east to west, from ditch D1 to ditch D3. Evidence of flow included scour marks and a predominantly unvegetated bottom. Flow is assumed to be intermittent in response to precipitation events or irrigation. Substrate is silty clay. Clear bed and shallow banks were observed. Ditch D2 averages 6 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Ditch D2 bisects wetland W2. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D3

Ditch D3 generally follows the western boundary of the site, with a short east-west segment at the northern end (Appendix B2, Photos 8-13; Appendix C2, Data Form D3). The east-west portion of the ditch is lined with concrete which continues a short way into the north-south segment. Ditch D3 is connected to ditch D5 via a culvert the crosses over ditch D1. No flow was present at the time of the field visit; however direction of flow appears to be to the west from the culvert at ditch D1 and then south along the western site boundary. Substrate is silty clay. Evidence of flow includes scour marks, lack of vegetation, and presence of clear bed and banks. Ditch D3 averages 3 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D4

Ditch D4 traverses the site diagonally from the intersection of ditches D1 and D3 southwest to the northern end of wetland W3 (Appendix B2, Photo 15; Appendix C2, Data Form D4). No flow was present at the time of the field visit. Direction of flow appears to be northeast to southwest. Flow from this ditch may provide some hydrological support for wetland W3. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and watercress. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D4 averages 4 feet across at top of bank and an average 0.75 foot from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D5

Ditch D5 traverses the site east to west, beginning at the eastern site boundary and flowing due west to its connection with ditch D3 via a culvert over ditch D1 (Appendix B2, Photo 16; Appendix C2, Data Form D5). At the eastern end ditch D5 is connected with ditch D7 from the north and ditch D8 to the south. Ditch D5 consists of two parallel channels separated by a low vegetated berm. No flow was observed at the time of the field visit, however shallow standing water was present in places. Direction of flow appears to be east to west. Evidence of flow includes scour mark, lack of vegetation, and presence of clear bed and banks in both channels. The substrate consists of silty clay. Including both channels ditch D5 averages 10 feet across at top of bank with the center berm 2 to 3 feet wide. Channel depth averages 1.5 feet from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D6

Ditch D6 traverses the site from southeast to northwest along the northern site boundary (Appendix B2, Photo 21; Appendix C2, Data Form D6). No flow was present at the time of the field visit. Evidence of flow includes scour marks, lack of vegetation, and presence of clear bed and shallow banks. Direction of flow appears to be southwest to northeast with ditch D6 draining into the northernmost segment of ditch D1. No surface connection was observed between ditch D6 and ditch D7 immediately southeast of D6. Ditch D6 averages 2.5 feet across at top of bank. Channel depth averages 0.5 feet. Substrate is silty clay. Adjacent vegetation consists of pasture grasses to the southwest and a thicket of shrubs with some trees offsite to the northeast.

Ditch D7

Ditch D7 traverses the site from northwest to southeast (Appendix B2, Photos 22-24; Appendix C2, Data Form D7). No flow was present at the time of the field investigation. The western portion of ditch D7 runs parallel to and a short distance away from ditch D6. Evidence of flow includes scour marks and presence of bed and shallow banks. The channel is mostly devoid of vegetation. This segment of ditch D7 averages

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3 feet across at top of bank and 0.5 feet from top of bank to substrate. Substrate is silty clay. Flow in this segment appears to be southeast to northwest, originating at a water control structure that connects the western and eastern segments of ditch D7. Adjacent upland vegetation is planted pasture grasses.

The eastern segment of ditch D7 originates at the water control structure and appears to flow northwest to southeast. This segment of the channel is lined in concrete and averages 3 feet across at top of bank and 1.25 feet from top of bank to substrate. Adjacent upland vegetation consists of pasture grasses to the southwest and unmaintained grasses and forbs offsite to the northeast.

Ditch D8

Ditch D8 traverses the site from north to south along the eastern boundary of the site (Appendix B2, Photo 25; Appendix C2, Data Form D8). Ditch D8 is a continuation of ditch D7 south of its intersection with ditch D5. No flow was present at the time of the field investigation, however shallow standing water was observed in some places. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and watercress. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D8 averages 2.5 feet across at top of bank and an average 0.75 foot from top of bank to substrate. Adjacent upland vegetation consists of planted pasture grasses.

Ditch D9

Ditch D9 extends diagonally from ditch D8 to the southwest site (Appendix B2, Photo 26; Appendix C2, Data Form D9). No flow was present at the time of the field investigation. Direction of flow appears to be northeast to southwest. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D9 averages 2 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D10

Ditch D10 extends due south from ditch D5 (No photo; Appendix C2, Data Form D10). No flow was present at the time of the field investigation. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D10 averages 1.5 feet across at top of bank and an average 0.3 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D11

Ditch D11 extends slightly northwest to southeast from ditch D4 to ditch D2 (No photo; Appendix C2, Data Form D11). No flow was present at the time of the field investigation. Direction of flow appears to be north to south. Substrate is silty clay. Scattered vegetation in the ditch include small clumps of grasses and occasional rushes. Evidence of flow includes scour marks and presence of clear bed and shallow banks. Ditch D11 averages 2 feet across at top of bank and an average 0.5 feet from top of bank to substrate. Adjacent upland vegetation is planted pasture grasses.

Ditch D12 (partially offsite)

Ditch D12 is located just south of and parallel to the southern boundary of the site. Description of this ditch is based on offsite observation. Ditch D12 averages 6 feet across at top of bank and is an average 2 feet from top of bank to substrate. The ditch begins approximately 300 feet east of Old Highway 10 and flows east to the eastern end of the project site boundary, then turns south where it continues for an indeterminant distance. Flow was present in the ditch at the time of the field visit.



Table 6. Nonwetland Waters: Preliminary Jurisdictional Determinations

Nonwetland Waters ID #	Length (feet)	Average Width (feet)	Flow Regime	¿MWHO	Relocates or Excavated in a Tributary?	Drains Wetlands?	Intersects a Regulated Feature?	Flows to WOUS?	Potential Jurisdiction Notes
D1	2170.0	15	perennial	Yes	No	Yes	Yes	Yes	Presumed jurisdictional due to perennial flow
D2	473.0	6	intermittent	Yes	No	Yes	Yes	No	Potentially jurisdictional as it intersects and potentially drains Wetland W2
D3	1705.0	3	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D4	340.0	4	intermittent	Yes	No	No	Yes	No	Potentially jurisdictional as it intersects and potentially drains Wetland W3
D5	1096.0	10	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D6	760.0	2.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D7	1044.0	3	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D8	1185.0	2.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D9	415.0	2	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D10	825.0	1.5	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D11	420.0	2	intermittent	Yes	No	No	No	No	Presumed not jurisdictional as it does not flow to a WOUS
D12 (partially offsite)	1,427	6	intermittent	Yes	No	No	Yes	Unknown	Potentially jurisdictional as it intersects and drains Ditch D and appears to also intersect wetlands W1

3.2.3 Sensitive Plant, Fish, Wildlife, and Cultural/Historic Properties

Results of the database searches identified six special-status species as having the potential to occur on or adjacent to the site (USFWS, 2018a; Appendix E). No designated or proposed critical habitat (USFWS, 2018a) was identified within the survey area. No state or federally listed special-status species were observed during the field evaluation. No suitable habitat to support any listed species was observed onsite. Given species habitat and range requirements, and suitable habitat observed onsite, suitable nesting habitat for birds subject to the Migratory Bird Treaty Act is present within and adjacent to the work area.

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A cultural resources assessment was conducted October 24 - 26, 2018 and will be documented and provided for agency review under separate cover as part of the permit application process for the project, as necessary.



4. Conclusions

Brief summary of total area and types of wetlands and other regulated waters:

The wetland delineation identifies three wetland features (2.07 acres), eleven nonwetland waters (constructed ditches) in the study area (10,433 linear feet; 1.47 acres), and one constructed ditch offsite immediately south of the study area (1,427 linear feet; 0.2 acre). The wetlands and nonwetland waters identified in this report are potentially subject to federal and/or state jurisdiction. Jurisdictional determinations, including the potential applicability of jurisdictional exemptions, are made on a case-by-case basis by the regulatory agencies. Wetland W1, W2, and W3 are presumed jurisdictional under local and federal regulations. Ditches D1, D2, D4, and the offsite ditch D12 are presumed jurisdictional under federal regulations (EPA, 2015). They are presumed not jurisdictional under local regulations as the city of Ellensburg does not take jurisdiction over ditches (Ellensburg City Code 15.130.230)(City of Ellensburg, 2019). The determinations in this report are preliminary and are advisory only. Final determinations are made by the regulatory agencies. Table 7 summarizes potential federal, state, and local jurisdiction.

Table 7. Summary of Potential Federal, State, and Local Jurisdiction

Feature ID	Federal	State	City of Ellensburg
Wetlands (3)			
Wetland-1	Yes	Yes	Yes
Wetland-2	Yes	Yes	Yes
Wetland-3	Yes	Yes	Yes
Nonwetland Waters (12)			
Ditch D1	Yes	No	No
Ditch D2	Yes	No	No
Ditch D3	No	No	No
Ditch D4	Yes	No	No
Ditch D5	No	No	No
Ditch D6	No	No	No
Ditch D7	No	No	No
Ditch D8	No	No	No
Ditch D9	No	No	No
Ditch D10	No	No	No
Ditch D11	No	No	No
Ditch D12 (partially offsite)	Yes	No	No



Statement regarding the need for permits

Wetlands are regulated by the USACE under Section 404 of the Clean Water Act. If any fill is to be placed in the wetland, the USACE must be notified and the appropriate permits obtained. If any proposed wetland alteration requires a federal permit, Washington Department of Ecology Individual 401 Water Quality Certification and Coastal Zone Management Consistency determination would also be required. In 2015, the Environmental Protection Agency (EPA) and the USACE published a final rule (2015 Clean Water Rule) defining the scope of waters protected under the Clean Water Act (USACE and EPA, 2015). The Rule currently applies in 22 states, including Washington. The Clean Water Rule clearly defines three jurisdictional categories of wetlands: 1) waters that are jurisdictional in all cases, 2) waters that are jurisdictional by definition, and 3) waters subject to specific analysis to determine whether they are jurisdictional.

Waters that are jurisdictional by rule include "adjacent" waters, including wetlands. Adjacent waters include 1) wetlands or waters bordering, contiguous with, or neighboring a water of the U.S., 2) waters for which any portion is within 100 feet of the OHWM of a water of the U.S. and 3) wetlands or waters within the 100-year floodplain, and within 1,500 feet of the OHWM of a water of the U.S. Most ditches are excluded from regulation under this rule. Excluded ditches include 1) ditches with ephemeral flow and not a relocated tributary or excavated in a relocated tributary, 2) ditches with intermittent flow and not a relocated tributary or excavated in a relocated tributary, and does not drain wetland, and 3) ditches that do not flow to traditionally navigable waters. Regulated ditches must meet the definition of a tributary (e.g., bed and bank, OHWM, and connection). Regulated ditches include 1) ditches with perennial flow, 2) ditches with intermittent flow that are in a relocated tributary or drain wetlands, 3) ditches, regardless of flow, that are excavated in or relocate a tributary, and 4) intermittently flowing ditches that intersect regulated features or drain wetlands.

Ecology regulates isolated wetlands under the State Clean Water Act (RCW 90.48). If any alteration of isolated wetlands is proposed, Ecology must be notified to coordinate their regulatory review. Federally permitted actions that could affect endangered species may also require a biological assessment study and consultation with the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service. These requirements are applicable to all wetlands on the project site.

Disclaimer

This report documents the investigation, best professional judgment, and conclusions of the investigator. It is correct and complete to the best of the preparer's knowledge. It should be considered a preliminary determination of potentially jurisdictional wetlands and other waters and used at one's own risk unless it has been reviewed and approved in writing by the City of Ellensburg, Washington, and accepted by the USACE.

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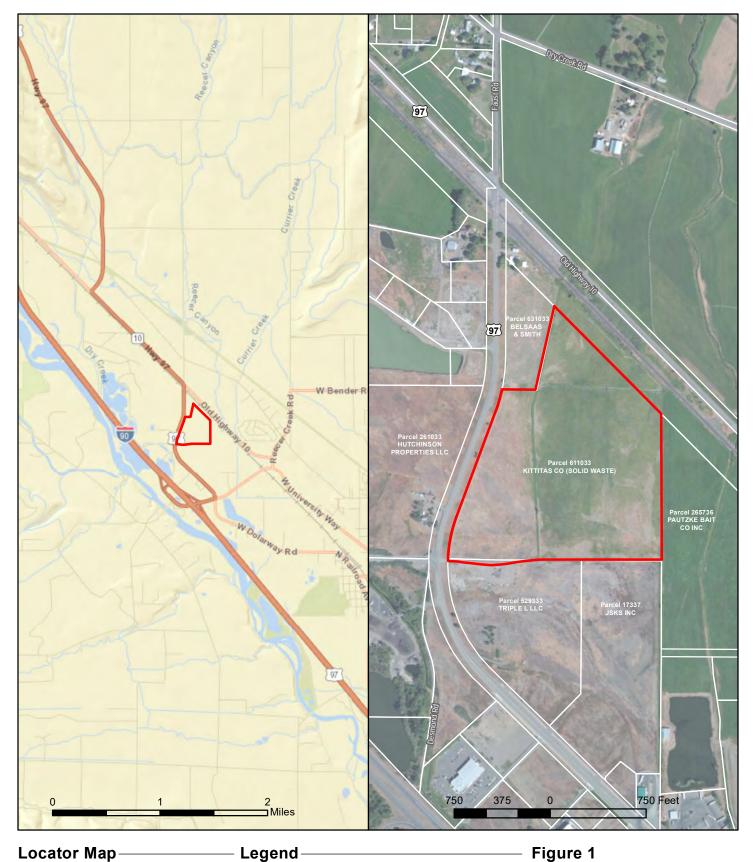
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Appendix A Figures

Figures

- 1 Project Area Map
- 2 National Wetlands Inventory
- 3 National Hydrography Dataset Map
- 4 NRCS Soils Map
- 5 USGS Topography Map
- 6a Wetland Delineation Map: Overview
- 6b Wetland Delineation Map: Photo Point Locations
- 6c Wetland Delineation Map: Sample Point Locations



Locator Map

Site Boundary

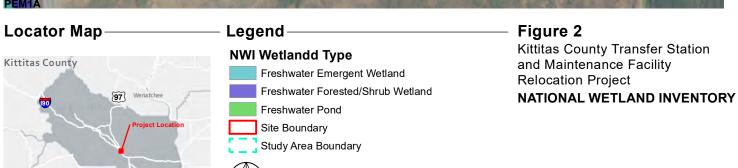
Figure 1 Kittitas County Transfer Station and Maintenance Facility
Relocation Project
SITE LOCATION







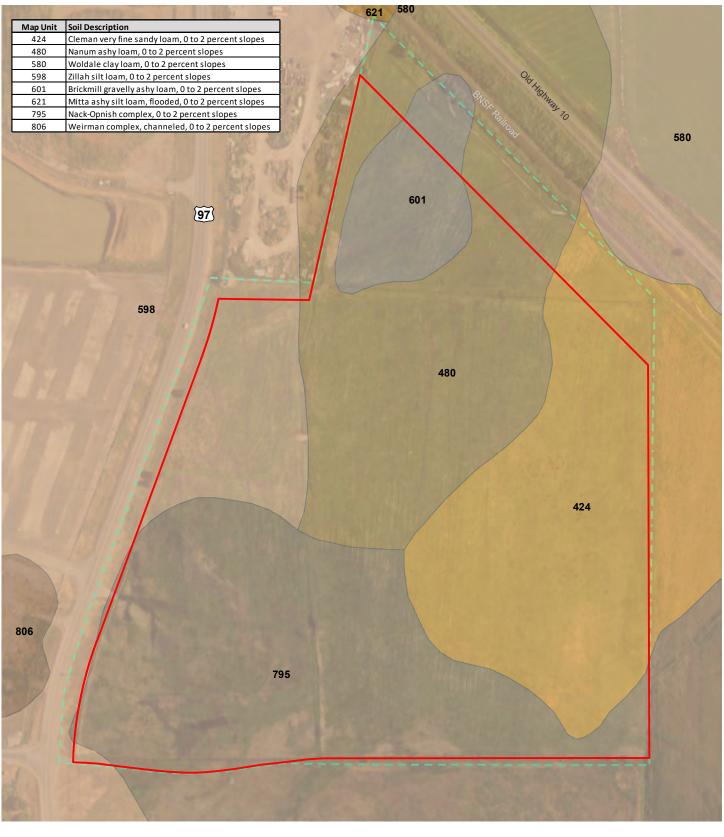


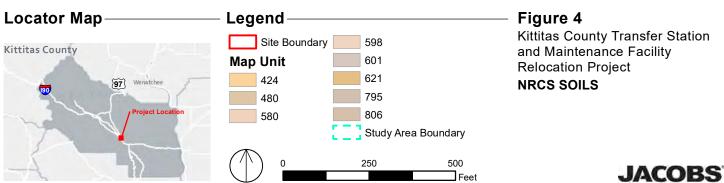


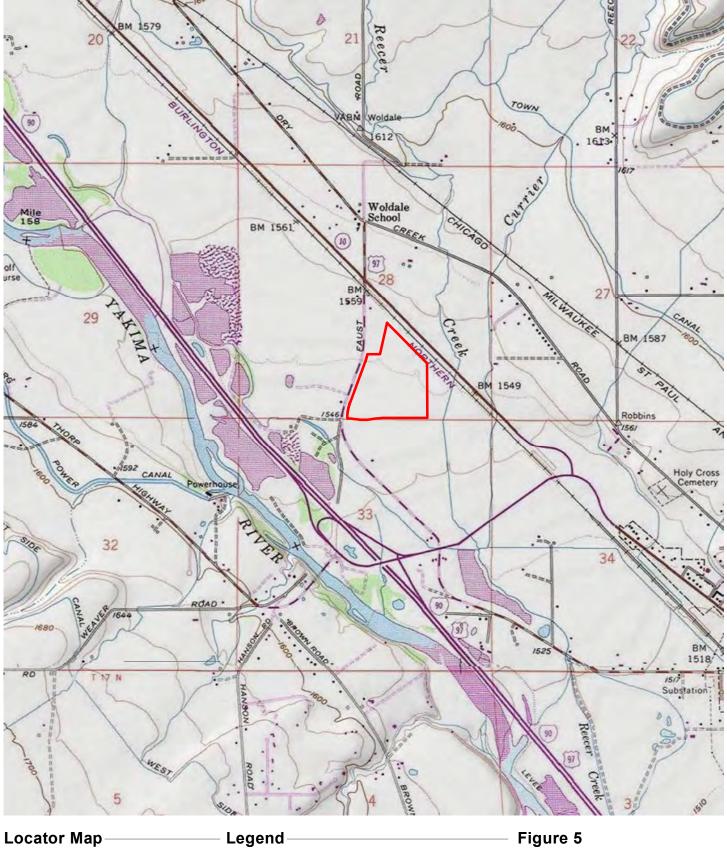


Locator Map Legend-Figure 3 Kittitas County Transfer Station and Maintenance Facility Relocation Project Kittitas County NHDFlowline LakePond NATIONAL HYDROGRAPHY 97 Wenatchee Reservoir Site Boundary Study Area Boundary 500 250







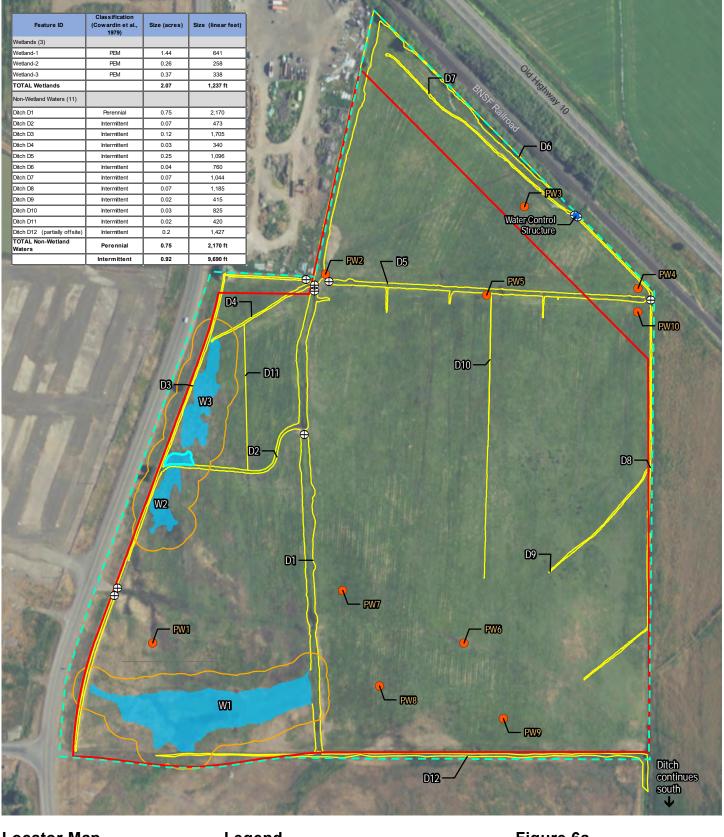


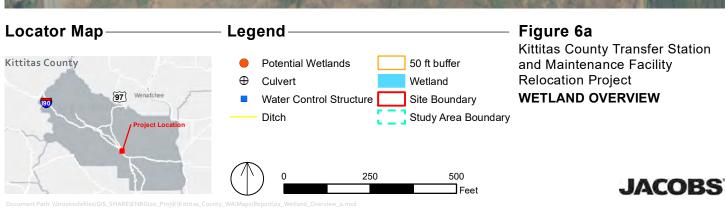
Locator Map Kittitas County Site Boundary Site Boundary Figure 5 Kittitas County Transfer Station and Maintenance Facility Relocation Project USGS Topographic Map Ellensburg North Washington

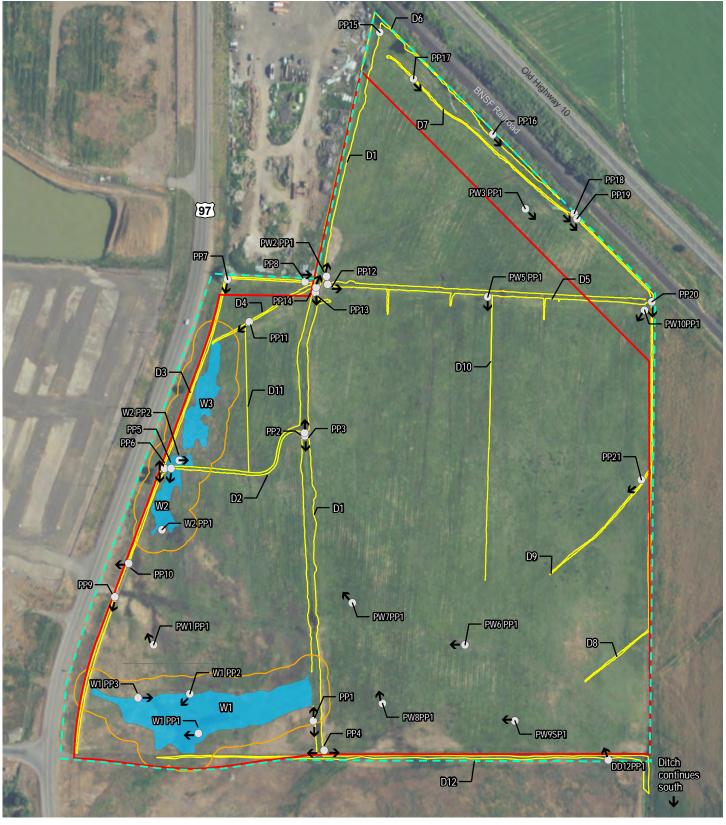
1,200

2,400

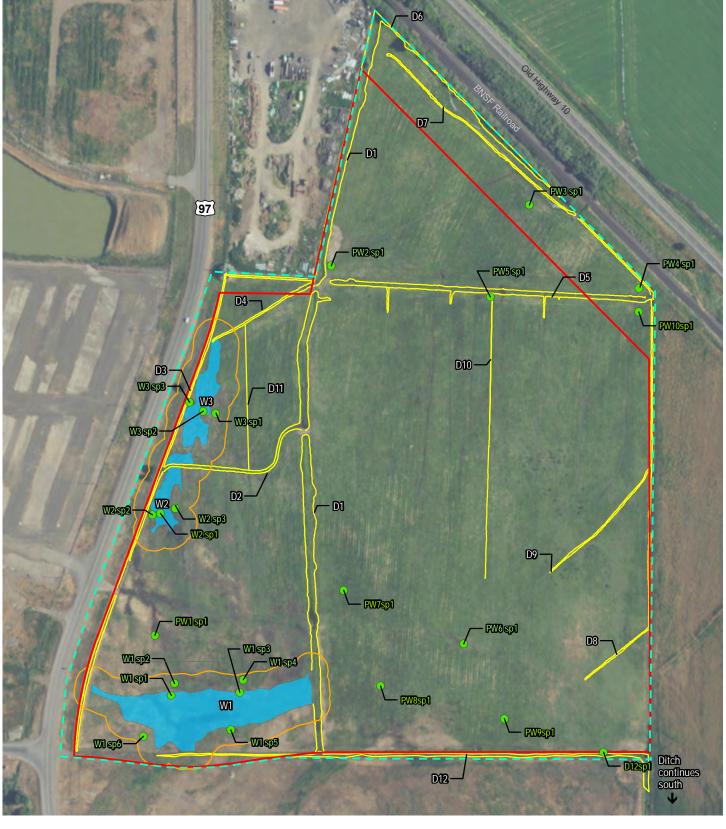


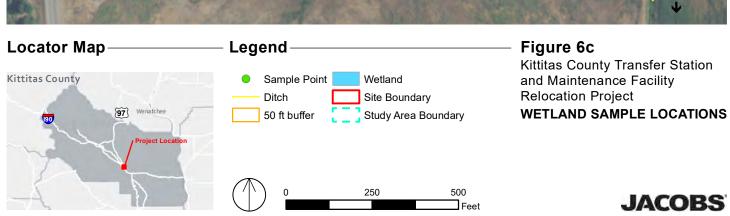






Locator Map Legend Figure 6b Kittitas County Transfer Station Kittitas County Photo Direction Wetland and Maintenance Facility **Relocation Project** Photo Point Site Boundary (97) Wenatchee **WETLAND PHOTO LOCATIONS** Ditch Study Area Boundary 50 ft buffer 250 500 **JACOBS** Feet





Appendix B Site Photographs

Site Photographs

B1 Wetlands and Potential Wetlands

B2 Nonwetland Waters (Ditches)



Photo 1 Wetland 1, view southwest from photo point WW1 PP1.

Photo 2 Wetland 1, view southwest from photo point WW1 PP2.





Photo 3 Wetland 1, view east from photo point WW1 PP3.

Photo 4 Wetland 2, view north from photo point WW2 PP1.



Photo 5 Wetland 2, view south from photo point WW2 PP2.

Photo 6 View northwest of potential wetland area PW1.



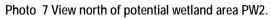


Photo 8 View northeast of potential wetland area PW3.



Photo 9 View south of potential wetland area PW 5.

Photo 10 View west of possible wetland area PW6.



Photo 11 View of potential wetland area PW7.

Photo 12 View of potential wetland area PW8.



Photo 13 View of potential wetland area PW9.



Photo 14 View of potential wetland area PW10





Photo 2 View south from Photo Point 1, ditch D1.





Photo 3 View south from Photo Point 2, ditch D1.

Photo 4 View north from Photo Point 3, ditch D1.





Photo 5 View west from Photo Point 4 of vegetated ditch south of site.

Photo 6 View east from Photo Point 4 of vegetated ditch south of site.





Photo 7 View northeast from Photo Point 5, ditch D2.

Photo 8 View south from Photo Point 2, ditch D3.





Photo 9 View north from Photo Point 6, ditch D3.

Photo 10 View south from Photo Point 7, ditch D3.



Photo 11 View east from Photo Point 7, ditch D3.

Photo 12 View east from Photo Point 8, ditch D3 crossing of ditch D1.





Photo 13 View south from Photo Point 9, ditch D3

Photo 14 View west from Photo Point 10, ditch entering site from culver under road.

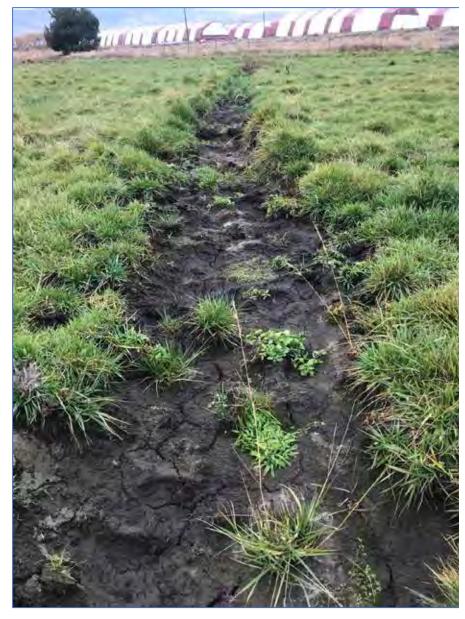


Photo 15 View southwest from Photo Point 11, ditch D4.

Phot 16 View east from Photo Point 12, ditch(es) D5.





Photo 17 View south from Photo Point 13, ditch D1.

Photo 18 View north from Photo Point 14, ditch D1.





Photo 19 View south from Photo Point 15, ditch D1.

Photo 20 View north from Photo Point 15, ditch D1.



Photo 21 View southeast from Photo Point 16, ditch D6.

Photo 22 View southeast from Photo PoInt 17, ditch D7.





Photo 23 View east from Photo Point 18, water control structure in ditch D7.

Photo 24 View east from Photo Point 19, ditch D7.





Photo 25 View south from Photo Point 20, ditch D8.

Photo 26 View southwest from Photo Point 21, ditch D9.



Photo 27 View east of ditch D12 (offsite).

Appendix C Field Datasheets

Field Datasheets

- C1 Wetland Delineation Field Datasheets
- C2 Watercourse or Ditch Characterization Field Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kittitas County Waste Transfer Station	(City/County	Ellensbu	rg/Kittitas	Sampling Date:10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point: W1 SP1
Investigator(s): P. O'Neill		Section, To	wnship, Rar	nge: T18N R18E S28	
Landform (hillslope, terrace, etc.): Flat	<u></u>	Local relief	(concave, c	convex, none): concave	Slope (%):2
Subregion (LRR): LRR B	Lat: 47.0	01447746	85	Long: -120.59287699	02 Datum:
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 perce					
Are climatic / hydrologic conditions on the site typical for this t			,		
Are Vegetation, Soil, or Hydrology sig					oresent? Yes <u>√</u> No
Are Vegetation, Soil, or Hydrology nat				eded, explain any answe	
SUMMARY OF FINDINGS – Attach site map sl					
Hydrophytic Vegetation Present? Yes _ ✓ No					
Hydric Soil Present? Yes ✓ No			e Sampled		
Wetland Hydrology Present? Yes ✓ No		with	in a Wetlan	id? Yes <u>√</u>	No
Remarks:					
VEGETATION – Use scientific names of plants					
·		Dominant	Indicator	Dominance Test work	sheet:
		Species?		Number of Dominant Sp	
1					or FAC:3 (A)
2				Total Number of Domin	
3				Species Across All Stra	ta:3 (B)
4				Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total Co	ver	That Are OBL, FACW, o	or FAC:100 (A/B)
1				Prevalence Index work	ksheet:
2				Total % Cover of:	Multiply by:
3					x 1 =
4					x 2 =
5					x 3 =
Herb Stratum (Plot size: 5 ft)		= Total Co	ver		x 4 = x 5 =
1. Agrostis stolonifera	20	X	FACW		(A) (B)
2. Poa pratensis	20	X	FAC		
3. Rumex salicifolius			OBL		= B/A =
4. Juncus effusus		X	FACW	Hydrophytic Vegetatio	
5. Ranunculus sceleratus			OBL	✓ Dominance Test is	
6				Prevalence Index is	s ≤3.0 ptations¹ (Provide supporting
7					s or on a separate sheet)
8		= Total Co		Problematic Hydror	ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)		= 10tal C0	vei		
1					l and wetland hydrology must
2				be present, unless distu	inded of problematic.
-		= Total Co	ver	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum 15 % Cover of	f Biotic Cr	rust			s No
Remarks:				<u> </u>	

US Army Corps of Engineers Arid West – Version 2.0

SOIL Sampling Point: W1 SP1

Depth	Matrix	0/	Redo			Loc ²	Tourture	Domestic
(inches)	Color (moist)	%	Color (moist)	%	Type ¹ _	Loc	<u>Texture</u>	Remarks
0-8	10YR 3/1	100				-	silty clay	
8-18	10YR 3/2	95	7.5YR 4/6	_ 5	<u></u>	M	clayey silt	
				_		-		
					_			
					_			
T		DM	Deduced Matrix O			-1010	21	office DL Dans Listen M Metric
			=Reduced Matrix, C LRRs, unless othe			ed Sand G		tation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol			Sandy Red		,			fluck (A9) (LRR C)
	pipedon (A2)		Stripped M					fluck (A10) (LRR B)
Black Hi	stic (A3)		Loamy Mu					ed Vertic (F18)
Hydroge	n Sulfide (A4)		Loamy Gle	yed Matri	x (F2)		Red Pa	arent Material (TF2)
	Layers (A5) (LRR	C)	Depleted M					Explain in Remarks)
1 cm Mu	ick (A9) (LRR D)		✓ Redox Dar	k Surface	(F6)			
Depleted	d Below Dark Surfa	ce (A11)	Depleted D		, ,			
Thick Da	ark Surface (A12)		Redox Dep	ressions	(F8)			of hydrophytic vegetation and
	lucky Mineral (S1)		Vernal Poo	ols (F9)				hydrology must be present,
	sleyed Matrix (S4)						unless d	isturbed or problematic.
	_ayer (if present):							
							11	Bureauto Ver / Ne
Depth (inc	ches):						Hydric Soil	Present? Yes √ No
Depth (inc	ches):						Hydric Soil	Present? Yes <u>√</u> No
Depth (inc	GY						Hydric Soil	Present? Yes <u>√</u> No
Depth (incomments) Remarks: YDROLOGE Wetland Hyd	GY drology Indicators	:		uh A				
Depth (income primary Indicates) Depth (income primary Indicates) Depth (income primary Indicates)	GY drology Indicators	:	d; check all that app	-			Secon	idary Indicators (2 or more required)
Depth (incomplete primary Indicates) Primary Indicates Surface	GY drology Indicators cators (minimum of	:	d; check all that app Salt Crust	t (B11)			<u>Secon</u> W	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine)
Depth (incomplete Control of the Con	GY drology Indicators eators (minimum of Water (A1) eter Table (A2)	:	d; check all that app Salt Crust Biotic Cru	t (B11) ist (B12)	(D42)		<u>Secon</u> W S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine)
Depth (incomplete property) Primary Indicomplete primary Indicate primary Indicat	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3)	: one require	d; check all that app Salt Crust Biotic Cru Aquatic Ir	t (B11) ist (B12) nvertebrat	, ,		Secon W S D	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine)
Depth (inconstruction) Remarks: YDROLOG Wetland Hyd Primary Indiconstruction Surface High Water Mater	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) (Nonrive	: one require	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen	t (B11) ist (B12) nvertebrate i Sulfide C	Odor (C1)		Secon W S D D	dary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10)
Depth (inconserved) Remarks: YDROLO Wetland Hyd Primary Indiconserved Surface High Water M Sedimer	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No	: one require rine) onriverine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized	t (B11) ust (B12) nvertebrate Sulfide C	Odor (C1) eres along	-	Secon W S D D ots (C3) D	dary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2)
Depth (inconserved) Remarks: YDROLOGIES Wetland Hyden Surface High Water Mater	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (Nonrive	: one require rine) onriverine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence	t (B11) ust (B12) uvertebrate u Sulfide C Rhizosphe of Reduc	Odor (C1) eres along ed Iron (C	4)	Secon W S D D ots (C3) C	dary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8)
Depth (inconserved) Remarks: IYDROLO Wetland Hyd Primary Indiconserved Surface High Water Management Water Management Sedimer Drift Dep	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6)	: one require rine) onriverine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ire	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct	Odor (C1) eres along ed Iron (C tion in Tille	4)	Secon W S D D Ots (C3) C S S	rdary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS
Depth (inconserved) Primary Indiconserved Surface High Water M Sedimer Drift Depter Surface Inundation	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) arks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial	: one require rine) onriverine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ird Thin Muc	t (B11) ust (B12) nvertebrate Sulfide C Rhizospho of Reduct on Reduct k Surface	Odor (C1) eres along ed Iron (C tion in Tille (C7)	4)	Secon W S D D Cots (C3) C C 6) S S	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Depth (inconserved) Primary Indiconserved Surface High Water M Sedimer Drift Dep Surface Inundation Water-Si	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9)	: one require rine) onriverine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ire	t (B11) ust (B12) nvertebrate Sulfide C Rhizospho of Reduct on Reduct k Surface	Odor (C1) eres along ed Iron (C tion in Tille (C7)	4)	Secon W S D D Cots (C3) C C 6) S S	rdary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS
Depth (inconserved) Primary Indiconserved Wetland Hyde Primary Indiconserved Surface High Water M Sediment Drift Dept Surface Inundation Water-St	GY drology Indicators eators (minimum of Water (A1) tter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations:	: one require rine) onriverine) erine)	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ird Thin Muck	t (B11) ust (B12) nvertebrate Sulfide C Rhizospho of Reduct on Reduct k Surface cplain in R	Odor (C1) eres along ed Iron (C tion in Tille (C7) emarks)	4) d Soils (C	Secon W S D D Cots (C3) C C 6) S S	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Depth (inconserved) Primary Indiconserved Surface High Water Management Surface Inundations Water-Sirield Observed Surface Water-Sirield Observed Depth (inconserved) Surface Water-Sirield Observed Surface Water-Sirield Observed)	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive on Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) evations: er Present?	: one require rine) onriverine) erine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ird Thin Mucl Other (Ex	t (B11) ust (B12) nvertebrate Sulfide C Rhizospho of Reduct on Reduct k Surface splain in R	Odor (C1) eres along ed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon W S D D Cots (C3) C C 6) S S	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Depth (inconserved) Primary Indiconserved Wetland Hyde Primary Indiconserved Surface High Water M Sediment Drift Dept Surface Inundation Water-St	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive cosits (B3) (Nonrive cosits (B6) en Visible on Aerial tained Leaves (B9) evations: er Present? Present?	: prine) priverine) erine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface cplain in R	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon W S D D Cots (C3) C S S C F	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Depth (incorrection) Primary Indicorrection Surface High Water M Sedimer Drift Dep Surface Inundation Water-Si Field Observ Surface Water Water Table Saturation Profit (includes cap	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex No ✓ Depth (ir No _ Depth (ir	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Depth (incorrection) Remarks: IYDROLO Wetland Hyd Primary Indicorrection Surface High Water M Sedimer Drift Deptor Surface Inundation Water-Si Field Observices Water Table Saturation Professional Profession	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Depth (incorrection) Remarks: IYDROLO Wetland Hyd Primary Indicorrection Surface High Water M Sediment Drift Dept Surface Inundation Water-Si Field Observ Surface Water Water Table Saturation Province (includes cape) Describe Recorrection	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex No ✓ Depth (ir No _ Depth (ir	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Depth (incorrection) Remarks: IYDROLO Wetland Hyd Primary Indicorrection Surface High Water M Sedimer Drift Deptor Surface Inundation Water-Si Field Observices Water Table Saturation Professional Profession	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex No ✓ Depth (ir No _ Depth (ir	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Depth (incorrection) Remarks: IYDROLO Wetland Hyd Primary Indicorrection Surface High Water M Sediment Drift Dept Surface Inundation Water-Si Field Observ Surface Water Water Table Saturation Province (includes cape) Describe Recorrection	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex No ✓ Depth (ir No _ Depth (ir	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Depth (incorrection) Remarks: IYDROLO Wetland Hyd Primary Indicorrection Surface High Water M Sediment Drift Dept Surface Inundation Water-Si Field Observ Surface Water Water Table Saturation Province (includes cape) Describe Recorrection	GY drology Indicators eators (minimum of Water (A1) eter Table (A2) on (A3) earks (B1) (Nonrive et Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations: er Present? Present? resent?	ine) Imagery (B	d; check all that app Salt Crust Biotic Cru Aquatic Ir Hydrogen Oxidized Presence Recent Ir Other (Ex No ✓ Depth (ir No _ Depth (ir	t (B11) ust (B12) nvertebrate Sulfide C Rhizosphe of Reduct on Reduct k Surface splain in R nches):	Odor (C1) eres along eed Iron (C tion in Tille (C7) emarks)	4) d Soils (Co	Secon	Idary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kittitas County Waste Transfer Station	(City/Coun	ty: <u>Ellensbu</u>	rg/Kittitas	_ Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W1 SP2
Investigator(s): P. O'Neill		Section, 1	Гownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local reli	ef (concave,	convex, none): none	Slop	pe (%):2
Subregion (LRR): LRR B	Lat: 47.0	0145702	113	Long: <u>-120.5928386</u>	65 Datu	m:
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 perc						
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrology sig				'Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answ		
SUMMARY OF FINDINGS – Attach site map s						atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No		<u> </u>			<u> </u>	<u> </u>
Hydric Soil Present? Yes No			the Sampled thin a Wetlar		No <u>√</u>	
Wetland Hydrology Present? Yes No		Wi	tnin a wetiar	id? fes	NO <u>*</u>	-
Remarks:						
VEGETATION – Use scientific names of plants	•					
		Domina	nt Indicator	Dominance Test wor	kshoot:	
*			? Status	Number of Dominant S		
1				That Are OBL, FACW,		(A)
2				Total Number of Domi	nant	
3				Species Across All Str	ata: <u>3</u>	(B)
4				Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: 15 ft)		= Lotal C	Cover	That Are OBL, FACW,	or FAC: 6	7 (A/B)
1				Prevalence Index wo	rksheet:	
2				Total % Cover of:	Multiply	y by:
3				OBL species		
4		-		FACW species		
5				FAC species		
Herb Stratum (Plot size: 5 ft)		= Total C	Cover	FACU species		
1. Festuca idahoensis	30	Х	FACU	UPL species Column Totals:		
2. Poa pratensis		X		Column Totals.	(A)	(Б)
3. Agrostis stolonifera	30	X	FACW	Prevalence Inde	x = B/A =	
4. Juncus effusus				Hydrophytic Vegetat		
5. Trifolium repens	10		FACU	✓ Dominance Test is		
6				Prevalence Index		
7					aptations ¹ (Provide ss or on a separate	
8				Problematic Hydro	ophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size:)	95	= Total C	over			
1		-		¹ Indicators of hydric so		
2				be present, unless dis	turbed or problema	tic.
				Hydrophytic		
% Bare Ground in Herb Stratum5	of Biotic Cr	rust		Vegetation Present? Yes	es <u>√</u> No	
Remarks:			_	1		

US Army Corps of Engineers Arid West – Version 2.0

SOIL Sampling Point: W1 SP2

Depth Matrix		0-1- /	Redox Featu		12	T (.	Develo
(inches) Color (moist)		Color (mo	<u>ist) %</u>	Type ¹	Loc ²	Texture	Remarks
0-10 10YR 3/2	100						clayey silt loam
10-18 10YR 3/2	100					gravelly 距	gravelly sandy loam
Type: C=Concentration, D=D					ed Sand G		cation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (App	licable to all			oted.)			for Problematic Hydric Soils ³ :
Histosol (A1)			ly Redox (S5)				Muck (A9) (LRR C)
Histic Epipedon (A2)			ped Matrix (S6				Muck (A10) (LRR B)
Black Histic (A3)			ny Mucky Mine				ed Vertic (F18)
Hydrogen Sulfide (A4)	D (0)		ny Gleyed Mat				arent Material (TF2)
Stratified Layers (A5) (LR	K C)		eted Matrix (F:			Other	(Explain in Remarks)
1 cm Muck (A9) (LRR D)	food (A11)	· 	ox Dark Surfac	, ,			
Depleted Below Dark SurThick Dark Surface (A12)	ace (ATT)		eted Dark Surf ox Depressions			3Indicators	of hydrophytic vegetation and
Sandy Mucky Mineral (S1	١		al Pools (F9)	s (FO)			hydrology must be present,
Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4)	•	vern	ai FUUIS (F9)				nyarology must be present, isturbed or problematic.
Restrictive Layer (if present						1	
Туре:							
Depth (inches):						Hydric Soil	Present? Yes No _ ✓
Depth (inches):Remarks:						Hydric Soil	Present? Yes No _✓
Remarks:						Hydric Soil	Present? Yes No _ ✓
Remarks:						Hydric Soil	Present? Yes No _✓
Remarks: YDROLOGY Wetland Hydrology Indicato	rs:		at apply)				
Remarks: YDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum o	rs:	d; check all th				Secon	ndary Indicators (2 or more required)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs:	d; check all th Sal	Crust (B11)			<u>Secor</u> W	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine)
IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2)	rs:	d; check all th Sal Bio	t Crust (B11)			<u>Secor</u> W S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine)
IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the control	rs: of one require	d; check all th Sal Bio Aqu	t Crust (B11) tic Crust (B12) natic Invertebra	ates (B13)		<u>Secor</u> W S D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: of one require	d; check all th Sal' Bior Aqu Hyo	t Crust (B11) tic Crust (B12) patic Invertebra drogen Sulfide	ates (B13) Odor (C1)	Living Poo	<u>Secor</u> W S D D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rrainage Patterns (B10)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: of one require verine) Nonriverine)	d; check all th Sal Bio Aqu Hyo Oxi	t Crust (B11) tic Crust (B12) latic Invertebra drogen Sulfide dized Rhizosp	ates (B13) Odor (C1) heres along	-	Secon W S D D ots (C3) D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: of one require verine) Nonriverine)	d; check all th Sal Bio Aqu Hyo Oxi Pre	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu	ates (B13) Odor (C1) heres along aced Iron (C4	1)	Secon W S D D ts (C3) D C	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: of one require verine) Nonriverine) verine)	d; check all th Sal Bio Aqu Oxi Pre Rec	t Crust (B11) tic Crust (B12) latic Invertebra frogen Sulfide dized Rhizosp sence of Redu cent Iron Redu	ates (B13) Odor (C1) heres along uced Iron (C4 ction in Tille	1)	Secor W S D D Dots (C3) D C S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) rry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS)
IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the control	rs: of one require verine) Nonriverine) verine) al Imagery (B	d; check all th Sal Bio Aqu Hyo Oxi Pre Rec 57) Thin	t Crust (B11) tic Crust (B12) latic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu n Muck Surfac	otes (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7)	1)	Secor — V — S — D — D — D — D — C — S — S — S — S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content	rs: of one require verine) Nonriverine) verine) al Imagery (B	d; check all th Sal Bio Aqu Hyo Oxi Pre Rec 57) Thin	t Crust (B11) tic Crust (B12) latic Invertebra frogen Sulfide dized Rhizosp sence of Redu cent Iron Redu	otes (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7)	1)	Secor — V — S — D — D — D — D — C — S — S — S — S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) rry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (CS)
Netland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Indicated Surface Soil Cracks (B6) Inundation Visible on Aerice Water-Stained Leaves (B5) Field Observations:	rs: verine) Nonriverine) verine) al Imagery (E	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu n Muck Surfac er (Explain in	ates (B13) Odor (C1) heres along uced Iron (C4 ction in Tille e (C7) Remarks)	t) d Soils (C6	Secor — V — S — D — D — D — D — C — S — S — S — S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonring Sediment Deposits (B2) (Indicator Surface Soil Cracks (B6) Inundation Visible on Aeric Water-Stained Leaves (B3) Field Observations: Surface Water Present?	rs: of one require verine) Nonriverine) verine) al Imagery (B	d; check all th Sal Bior Aqu Hyor Oxi Pre Rec 37) Thin Oth	t Crust (B11) tic Crust (B12) tatic Invertebra frogen Sulfide dized Rhizosp sence of Redu tent Iron Redu in Muck Surfac er (Explain in	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (Ce	Secor — V — S — D — D — D — D — C — S — S — S — S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonring Sediment Deposits (B2) (Indicate Soil Cracks (B6) Inundation Visible on Aeric Water-Stained Leaves (B5) Field Observations: Surface Water Present?	rs: verine) Nonriverine) verine) al Imagery (B	d; check all th Sal: Bio: Aqu Oxi Pre Rec Thi: Oth No _ ✓ _ De No _ ✓ _ De	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu to Muck Surfac er (Explain in tepth (inches): _ tipth (inches): _	ates (B13) Odor (C1) heres along aced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D — D — C — S — C — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Remarks: Wetland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonring Sediment Deposits (B2) (Indicated Soil Cracks (B6) Inundation Visible on Aering Water-Stained Leaves (Brield Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
Netland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Indicated Surface Soil Cracks (B6) Inundation Visible on Aerice Water-Stained Leaves (B5) Field Observations:	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Netland Hydrology Indicato Primary Indicators (minimum of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonrive Sediment Deposits (B2) (Indicated Surface Soil Cracks (B6) Inundation Visible on Aerice Water-Stained Leaves (Brield Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)
Remarks: IYDROLOGY Wetland Hydrology Indicato Primary Indicators (minimum of the content of t	rs: verine) Nonriverine) verine) al Imagery (B B) Yes Yes Yes	d; check all th	t Crust (B11) tic Crust (B12) tatic Invertebra drogen Sulfide dized Rhizosp sence of Redu tent Iron Redu th Muck Surfac er (Explain in the pth (inches): _ tenth (inches): _ tenth (inches): _ tenth (inches): _	ates (B13) Odor (C1) heres along iced Iron (C4 ction in Tille e (C7) Remarks)	4) d Soils (C6	Secor — W — S — D — D ots (C3) — D — S — S — F	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3) AC-Neutral Test (D5)

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kittitas County Waste Transfer Station		City/Count	y: <u>Ellensbu</u>	rg/Kittitas	Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W1 SP3
Investigator(s): P. O'Neill		Section, T	ownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	ef (concave,	convex, none): concave	slo	pe (%):2
Subregion (LRR): LRR B	Lat: <u>47.</u>	0145033	373	Long: <u>-120.5920805</u>	5 Datu	m:
Soil Map Unit Name: Nack-Opnish complex, 0 to 2 per						
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrologys				"Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology n				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map						eatures, etc.
Hydrophytic Vegetation Present? Yes _ ✓ N		<u> </u>	<u> </u>	,	<u></u>	<u> </u>
Hydric Soil Present? Yes ✓ N			he Sampled			
Wetland Hydrology Present? Yes ✓ N		wit	hin a Wetlar	nd? Yes <u>√</u>	/ No	-
Remarks:		I			-	
VEGETATION – Use scientific names of plan	te					
VEGETATION – Ose scientific flames of plan		Dominon	t Indicator	Dominance Test worl	kohooti	
Tree Stratum (Plot size:30 ft)			Status	Number of Dominant S		
1				That Are OBL, FACW,		(A)
2				Total Number of Domir	nant	
3				Species Across All Stra		(B)
4				Percent of Dominant S	pecies	
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total C	over	That Are OBL, FACW,		00 (A/B)
1				Prevalence Index wo	rksheet:	
2.				Total % Cover of:	Multipl	y by:
3.				OBL species	x 1 =	
4				FACW species	x 2 =	
5				FAC species		
Herb Stratum (Plot size: 5 ft)	-	= Total C	over	FACU species		
Herb Stratum (Plot size: 5 ft) 1. Agrostis stolonifera	20	Х	FACW	UPL species		
2. Juncus effusus		X		Column Totals:	(A)	(B)
3. Poa pratensis		X		Prevalence Index	x = B/A =	
4. Festuca idahoensis				Hydrophytic Vegetati	on Indicators:	
5				✓ Dominance Test is		
6				Prevalence Index		
7				Morphological Ada	aptations ¹ (Provide as or on a separate	supporting
8				Problematic Hydro	•	,
Woody Vine Stratum (Plot size:)	70	= Total C	over	r robicinatio riyare	priyas vegetation	(Explair)
1				¹ Indicators of hydric so	il and wetland hyd	rology must
2.				be present, unless dist		
		= Total C		Hydrophytic		
% Bare Ground in Herb Stratum 10 % Cover	r of Biotic C			Vegetation Present? Ye	es_√_ No	
Remarks:	ט אווטווב ני	. ust		i resent:	. <u> </u>	
Tromano.						
1						

US Army Corps of Engineers Arid West – Version 2.0

SOIL Sampling Point: W1 SP3

Profile Desc	ription: (Describe	to the de	oth needed to docu	ment the	indicator	or confirm	n the absence of indic	ators.)
Depth	Matrix			x Feature	s 1	2		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-8	10YR 3/1	95	5YR 4/6	_ 5	<u>C</u>	M	silty clay	
8-16	10YR 3/2	90	7.5YR 4/6	10	С	M	clayey sil	
						· ——		
					·			
1Tupo: C-Co	noontration D_Dan	Jotion DM		Covere	d or Coot	od Sond Cr	roing ² l coation: F	DI - Doro Lining M-Motrix
			=Reduced Matrix, CS I LRRs, unless othe			ed Sand Gr		PL=Pore Lining, M=Matrix. blematic Hydric Soils ³ :
Histosol		able to all	Sandy Red		cu.,		1 cm Muck (A9	•
	vipedon (A2)		Stripped Ma				2 cm Muck (A1	
Black His			Loamy Muc	, ,	al (F1)		Reduced Vertice	
	n Sulfide (A4)		Loamy Gle				Red Parent Ma	
	Layers (A5) (LRR (C)	Depleted M		(1 _)		Other (Explain	
	ck (A9) (LRR D)	- /	✓ Redox Darl	, ,	(F6)			,
	l Below Dark Surfac	e (A11)	Depleted D					
Thick Da	rk Surface (A12)		Redox Dep	ressions (F8)		³ Indicators of hydro	phytic vegetation and
Sandy M	lucky Mineral (S1)		Vernal Poo	ls (F9)			wetland hydrolog	yy must be present,
	leyed Matrix (S4)						unless disturbed	or problematic.
Restrictive L	ayer (if present):							
Туре:								
Depth (inc	ches):						Hydric Soil Present	t? Yes <u>√</u> No
Remarks:								
	0)/							
HYDROLO								
•	Irology Indicators:							
Primary Indic	ators (minimum of o	ne require	ed; check all that appl	y)			Secondary Inc	licators (2 or more required)
Surface	Water (A1)		Salt Crust	(B11)			Water Ma	rks (B1) (Riverine)
High Wa	ter Table (A2)		Biotic Cru	st (B12)			Sediment	Deposits (B2) (Riverine)
✓ Saturation	on (A3)		Aquatic In	vertebrate	es (B13)		Drift Depo	osits (B3) (Riverine)
Water M	arks (B1) (Nonriver	ine)	Hydrogen	Sulfide O	dor (C1)		Drainage	Patterns (B10)
Sedimen	t Deposits (B2) (No	nriverine)	Oxidized F	Rhizosphe	res along	Living Roo	ots (C3) Dry-Seaso	on Water Table (C2)
Drift Dep	osits (B3) (Nonrive	rine)	Presence	of Reduce	ed Iron (C	4)	Crayfish E	Burrows (C8)
Surface	Soil Cracks (B6)		Recent Iro	n Reducti	ion in Tille	ed Soils (C6	S) Saturation	No Visible on Aerial Imagery (C9)
Inundation	on Visible on Aerial I	lmagery (E	37) Thin Muck	Surface	(C7)		Shallow A	.quitard (D3)
Water-St	tained Leaves (B9)		Other (Ex	plain in Re	emarks)		FAC-Neut	ral Test (D5)
Field Observ	/ations:							
Surface Water	er Present? Y	es	No <u>✓</u> Depth (in	ches):				
Water Table			No ✓ Depth (in					
Saturation Pr			No Depth (in				and Hydrology Preser	nt? Yes ✓ No
(includes cap	illary fringe)							ii. 165 <u>-v</u> 165 <u></u>
		gauge, m	onitoring well, aerial	photos, pr	evious in	spections),	if available:	
Remarks:								

Project/Site: Kittitas County Waste Transfer Station	(City/Count	y: <u>Ellensbu</u>	rg/Kittitas	_ Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W1 SP4
Investigator(s): P. O'Neill	;	Section, T	ownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	ef (concave,	convex, none): none	Slop	pe (%):2
Subregion (LRR): LRR B	Lat: 47.0	0146024	8	Long: -120.5920403	16 Datu	m:
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 perc						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology signature.				'Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s					,	atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No	ı	la d	h - 0 ll			
Hydric Soil Present? Yes No			he Sampled hin a Wetlar		No <u></u> √	
Wetland Hydrology Present? Yes No		WIL	iiiii a vvetiai	iu: 165	NO <u></u>	-
Remarks:						
VEGETATION – Use scientific names of plant	<u> </u>					
		Dominar	nt Indicator	Dominance Test wor	ksheet:	
			Status	Number of Dominant S		
1				That Are OBL, FACW,		(A)
2				Total Number of Domii		
3				Species Across All Stra	ata: <u>3</u>	(B)
4				Percent of Dominant S		_
Sapling/Shrub Stratum (Plot size: 15 ft)		= rotar C	over	That Are OBL, FACW,	or FAC: 67	7 (A/B)
1				Prevalence Index wo	rksheet:	
2		-		Total % Cover of:	Multiply	y by:
3				OBL species		
4				FACW species		
5				FACULARIAN		
Herb Stratum (Plot size: 5 ft)		= Total C	over	FACU species		
1. Festuca idahoensis	20	X	FACU	Column Totals:		
2. Poa pratensis		Х	FAC	Column Totals.	(^)	(D)
3. Agrostis stolonifera	20	X	FACW	Prevalence Index	x = B/A =	
4. Juncus effusus	10		FACW	Hydrophytic Vegetati		
5				✓ Dominance Test is		
6				Prevalence Index		
7					aptations ¹ (Provide s or on a separate	
8				Problematic Hydro	ophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size:)	- 60	= Total C	over			
1		-		¹ Indicators of hydric so		
2				be present, unless dist	urbed or problema	tic.
				Hydrophytic		
% Bare Ground in Herb Stratum 10 % Cover	of Biotic Cı	rust		Vegetation Present? Ye	es <u>√</u> No	
Remarks:				1		

SOIL Sampling Point: W1 SP4

(inches) 0-8	Color (moist)		Calar (masist)	eatures	Loc ²	Tavt	Domestic
()-X			Color (moist)	% Type ¹	LOC	Texture	Remarks
	10YR 3/2	_ <u>100</u> _				<u> </u>	clayey silt loam
8-16	10YR 3/2					gravely s 	gravelly sandy loam
							
			Reduced Matrix, CS=Co		d Sand Gr		cation: PL=Pore Lining, M=Matrix.
•		cable to all L	RRs, unless otherwis	•			for Problematic Hydric Soils ³ :
Histosol	` '		Sandy Redox (S				Muck (A9) (LRR C)
	ipedon (A2)		Stripped Matrix				Muck (A10) (LRR B)
Black His	` '		Loamy Mucky N				ed Vertic (F18)
	n Sulfide (A4)	0)	Loamy Gleyed I				arent Material (TF2)
	Layers (A5) (LRR	C)	Depleted Matrix	. ,		Other	(Explain in Remarks)
	ck (A9) (LRR D)	(0.4.4)	Redox Dark Sur	. ,			
	Below Dark Surface	ce (A11)	Depleted Dark S			31	of handranks the assessed the second
	irk Surface (A12)		Redox Depress Vernal Pools (F				of hydrophytic vegetation and
	lucky Mineral (S1) leyed Matrix (S4)		vernai Poois (F	9)			hydrology must be present, isturbed or problematic.
	ayer (if present):					unicss d	istance of problematic.
	, , ,						
	ches):					Hydric Soil	Present? Yes No ✓
Depth (Inc							
						11,4	<u></u>
Remarks:	OV.					1.7	
Remarks:							
YDROLO Wetland Hyd	Irology Indicators	:	check all that apply)				
YDROLO Wetland Hyder Primary Indice	drology Indicators ators (minimum of	:	check all that apply)	1)		Secon	ndary Indicators (2 or more required)
YDROLO Wetland Hyo Primary Indic Surface	drology Indicators ators (minimum of a Water (A1)	:	Salt Crust (B1	,		<u>Seco</u> i	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine)
YDROLOG Wetland Hyd Primary Indic Surface Surface High Wa	drology Indicators ators (minimum of a Water (A1) ter Table (A2)	:	Salt Crust (B1 Biotic Crust (B	12)		Secon	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine)
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturation	drology Indicators ators (minimum of e Water (A1) ter Table (A2) on (A3)	: one required;	Salt Crust (B1 Biotic Crust (B Aquatic Inverte	.12) ebrates (B13)		<u>Seco</u> r V S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine)
YDROLOGIO Primary Indicage Surface Surface Surface Surface Surface Saturation Water M	drology Indicators ators (minimum of a Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive	: one required; rine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf	12) ebrates (B13) ide Odor (C1)		<u>Seco</u> i V S D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rrainage Patterns (B10)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen	drology Indicators ators (minimum of a Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No	: one required; rine) onriverine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize	12) ebrates (B13) ide Odor (C1) ospheres along	-	Secon V S C C ts (C3) D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) rry-Season Water Table (C2)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep	drology Indicators lators (minimum of of other (A1) ter Table (A2) on (A3) arks (B1) (Nonrive that Deposits (B2) (No	: one required; rine) onriverine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize	,12) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4)	<u>Secor</u> V S D D D	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8)
YDROLOG Wetland Hyd Surface High Wa Saturatio Water M Sedimen Drift Dep	drology Indicators lators (minimum of of other (A1) leter Table (A2) leter Table (A2) leter Table (A2) leter Table (B1) leter Table (B2) leter Table (B3) leter	: one required: rine) onriverine) erine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	12) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled)	Secon V S C Lots (C3) C S S S S S S S S S S S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9)
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundation	Arology Indicators ators (minimum of or Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No posits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial	: one required: rine) onriverine) erine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	12) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled)	Secon V S D ts (C3) D cs (C3) S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
YDROLOGIO Metland Hydrogrimary Indication Surface of High Was Saturation Water Mater Surface Material Mater Surface Material Mater Surface Mater Surface Mater Surface Mater Surface Mater Surface Material Mater Mat	drology Indicators ators (minimum of a Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial dained Leaves (B9)	: one required: rine) onriverine) erine)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	12) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled)	Secon V S D ts (C3) D cs (C3) S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rift Deposits (B3) (Riverine) rainage Patterns (B10) ry-Season Water Table (C2) rayfish Burrows (C8) aturation Visible on Aerial Imagery (C9)
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundation	drology Indicators ators (minimum of a Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive at Deposits (B2) (No cosits (B3) (Nonrive Soil Cracks (B6) on Visible on Aerial tained Leaves (B9) vations:	: one required; rine) onriverine) erine) Imagery (B7)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Thin Muck Sur Other (Explain	.12) ebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks)) I Soils (C6	Secon V S D ts (C3) D cs (C3) S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
YDROLOGIO Metland Hydrogrimary Indication Surface of High Was Saturation Water Mater Surface Material Mater Surface Material Mater Surface Mater Surface Mater Surface Mater Surface Mater Surface Material Mater Mat	drology Indicators lators (minimum of or lators (minimum of or lators (minimum of or lators (Minimum of or lators (Ma) lators	: pone required; rine) ponriverine) erine) Imagery (B7)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Thin Muck Sur Other (Explain	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks)) I Soils (C6	Secon V S D ts (C3) D cs (C3) S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
YDROLOG Wetland Hyd Surface Surface Water M Sedimen Drift Dep Surface Inundation Water-Strield Observious	drology Indicators lators (minimum of or lators (minimum of or lators (minimum of or lators (Minimum of or lators (Ma) lators	: pone required; rine) ponriverine) erine) Imagery (B7)	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re Thin Muck Sur Other (Explain	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks)) I Soils (C6	Secon V S D ts (C3) D cs (C3) S S	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundatio Water-St Field Observ Surface Water Water Table Saturation Pr Includes cap	drology Indicators ators (minimum of other trapped (A2) arks (B1) (Nonrive at Deposits (B2) (No arks (B3) (Nonrive at Deposits (B3) (Nonrive at Deposits (B6) arks (B6) arks (B6) (Nonrive at Deposits (B6) arks (B6) ar	: pone required; rine) porriverine) erine) Imagery (B7) Yes N Yes N	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Ro Thin Muck Sur Other (Explain Depth (inches Depth (inches	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks) s):	Soils (C6	Secon V S D D C S D C S D S S F S F S And Hydrolog	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (CS) hallow Aquitard (D3)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundatio Water-St Field Observ Surface Water Water Table Saturation Pr Includes cap	drology Indicators ators (minimum of other trapped (A2) arks (B1) (Nonrive at Deposits (B2) (No arks (B3) (Nonrive at Deposits (B3) (Nonrive at Deposits (B6) arks (B6) arks (B6) (Nonrive at Deposits (B6) arks (B6) ar	: pone required; rine) porriverine) erine) Imagery (B7) Yes N Yes N	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Ro Thin Muck Sur Other (Explain	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks) s):	Soils (C6	Secon V S D D C S D C S D S S F S F S And Hydrolog	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 hallow Aquitard (D3) AC-Neutral Test (D5)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundatic Water-Si Field Observ Surface Water Vater Table Saturation Princludes cap Describe Rec	drology Indicators ators (minimum of other trapped (A2) arks (B1) (Nonrive at Deposits (B2) (No arks (B3) (Nonrive at Deposits (B3) (Nonrive at Deposits (B6) arks (B6) arks (B6) (Nonrive at Deposits (B6) arks (B6) ar	: pone required; rine) porriverine) erine) Imagery (B7) Yes N Yes N	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Ro Thin Muck Sur Other (Explain Depth (inches Depth (inches	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks) s):	Soils (C6	Secon V S D D C S D C S D S S F S F S And Hydrolog	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 hallow Aquitard (D3) AC-Neutral Test (D5)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundatio Water-St Field Observ Surface Water Water Table Saturation Pr Includes cap	drology Indicators ators (minimum of other trapped (A2) arks (B1) (Nonrive at Deposits (B2) (No arks (B3) (Nonrive at Deposits (B3) (Nonrive at Deposits (B6) arks (B6) arks (B6) (Nonrive at Deposits (B6) arks (B6) ar	: pone required; rine) porriverine) erine) Imagery (B7) Yes N Yes N	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Ro Thin Muck Sur Other (Explain Depth (inches Depth (inches	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks) s):	Soils (C6	Secon V S D D C S D C S D S S F S F S And Hydrolog	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 hallow Aquitard (D3) AC-Neutral Test (D5)
YDROLOG Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimen Drift Dep Surface Inundatic Water-Si Field Observ Surface Water Vater Table Saturation Princludes cap Describe Rec	drology Indicators ators (minimum of other trapped (A2) arks (B1) (Nonrive other trapped (B2) (Nonrive other trapped (B3) (Nonrive other trapped (B3) (Nonrive other trapped (B4) (Nonrive other trapp	: pone required; rine) porriverine) erine) Imagery (B7) Yes N Yes N	Salt Crust (B1 Biotic Crust (B Aquatic Inverte Hydrogen Sulf Oxidized Rhizo Presence of R Recent Iron Ro Thin Muck Sur Other (Explain Depth (inches Depth (inches	pebrates (B13) ide Odor (C1) ospheres along educed Iron (C4) eduction in Tilled face (C7) in Remarks) s):	Soils (C6	Secon V S D D C S D C S D S S F S F S And Hydrolog	ndary Indicators (2 or more required) /ater Marks (B1) (Riverine) ediment Deposits (B2) (Riverine) rrift Deposits (B3) (Riverine) rrainage Patterns (B10) rry-Season Water Table (C2) rrayfish Burrows (C8) aturation Visible on Aerial Imagery (C9 hallow Aquitard (D3) AC-Neutral Test (D5)

Project/Site: Kittitas County Waste Transfer Station	Cit	y/County:	Ellensbur	g/Kittitas	Sa	ampling Date:	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State:	WA Sa	ampling Point:	W1 SP5
Investigator(s): P. O'Neill	Se	ection, Tov	vnship, Rar	nge: <u>T18N R18E</u>	S28		
Landform (hillslope, terrace, etc.): Flat	Lo	ocal relief	(concave, c	convex, none): <u>no</u>	one	Slo	pe (%):2
Subregion (LRR): LRR B	Lat: 47.01	.4202302	25	Long: -120.59	2185554	Datu	ım:
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 percentage							
Are climatic / hydrologic conditions on the site typical for this			,				
Are Vegetation, Soil, or Hydrology sig				Normal Circumsta			✓ No
Are Vegetation, Soil, or Hydrology na				eded, explain any			
SUMMARY OF FINDINGS – Attach site map s							eatures, etc.
Hydrophytic Vegetation Present? Yes ✓ No					<u> </u>	•	<u> </u>
Hydric Soil Present? Yes No			Sampled			/	
Wetland Hydrology Present? Yes No		withi	n a Wetlan	d? Ye	es	No <u>√</u>	_
Remarks:							
VEGETATION – Use scientific names of plants	•						
	Absolute [Ominant	Indicator	Dominance Te	et workeh	not:	
	% Cover S			Number of Dom			
1				That Are OBL, I			(A)
2				Total Number o	f Dominant		
3				Species Across			<u>2</u> (B)
4				Percent of Dom	inant Spec	ies	
Sapling/Shrub Stratum (Plot size: 15 ft)	=	Total Cov	/er	That Are OBL, I	FACW, or F	FAC: <u>5</u>	<u>0</u> (A/B)
1				Prevalence Ind	ex worksh	neet:	
2.				Total % Co	ver of:	Multipl	y by:
3				OBL species		x 1 =	
4				FACW species			
5				FAC species			
Herb Stratum (Plot size: 5 ft)	=	Total Cov	/er	FACU species			
Festuca idahoensis	30	Х	FACU	UPL species			220 (B)
2. Agrostis stolonifera		X		Column Totals:		(A)	<u>ZZU</u> (B)
3.				Prevalenc	e Index =	B/A =2	.75
4				Hydrophytic V	egetation I	Indicators:	
5				Dominance			
6				✓ Prevalence			
7						tions ¹ (Provide · on a separate	
8				Problemation			,
Woody Vine Stratum (Plot size:)	=	Total Cov	/er				
1				¹ Indicators of hy			
2				be present, unle	ess disturbe	ed or problema	itic.
	=			Hydrophytic			
% Bare Ground in Herb Stratum 10 % Cover of	of Biotic Crus	st		Vegetation Present?	Yes _	✓ No_	
Remarks:				1	_		

SOIL Sampling Point: W1 SP5

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

Depth	Matrix	0/	Redox	Feature		1.22	Tautuma	Damada			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹ _	Loc ²	<u>Texture</u>	Remarks			
0-18	10YR 3/2	99	10YR 3/6	1	<u>C</u>	<u>M</u>	clayey sil	clayey silt loam			
				-							
	-						·				
			=Reduced Matrix, CS			ed Sand G		cation: PL=Pore Lining, M=Matrix.			
-		cable to all	LRRs, unless other		ted.)			for Problematic Hydric Soils ³ :			
Histosol	` '		Sandy Redo					Muck (A9) (LRR C)			
	pipedon (A2)		Stripped Mar		-L (E4)			Muck (A10) (LRR B)			
	istic (A3) en Sulfide (A4)		Loamy Muck	-	. ,			ed Vertic (F18) arent Material (TF2)			
	Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3)							(Explain in Remarks)			
	uck (A9) (LRR D)	-,	Redox Dark					(
Deplete	d Below Dark Surfac	ce (A11)	Depleted Da	rk Surfa	ce (F7)						
	ark Surface (A12)		Redox Depre		(F8)			of hydrophytic vegetation and			
	Mucky Mineral (S1)		Vernal Pools	(F9)			wetland hydrology must be present,				
	Gleyed Matrix (S4)						unless disturbed or problematic.				
	Layer (if present):										
Type:	ohoo):						Hydric Soil	Present? Yes No ✓			
Depth (in Remarks:	cnes):						Hydric Soil	Present? Yes No _ ✓			
HYDROLO	GY										
	drology Indicators	:									
-			ed; check all that apply)			Secor	ndary Indicators (2 or more required)			
	Water (A1)	ono roquire	Salt Crust (Vater Marks (B1) (Riverine)			
	ater Table (A2)		Biotic Crus					sediment Deposits (B2) (Riverine)			
Saturati	` '		Aquatic Inv		es (B13)			prift Deposits (B3) (Riverine)			
·	Marks (B1) (Nonrive	rine)	Hydrogen S					Prainage Patterns (B10)			
	nt Deposits (B2) (No				. ,	Living Roo		Pry-Season Water Table (C2)			
	posits (B3) (Nonrive		Presence of	f Reduc	ed Iron (C	4)	_ c	rayfish Burrows (C8)			
Surface	Soil Cracks (B6)		Recent Iron	Reduct	tion in Tille	d Soils (Co	6) S	aturation Visible on Aerial Imagery (C9)			
Inundati	ion Visible on Aerial	Imagery (E	37) Thin Muck	Surface	(C7)		s	hallow Aquitard (D3)			
Water-S	Stained Leaves (B9)		Other (Exp	ain in R	emarks)		F	AC-Neutral Test (D5)			
Field Obser	vations:										
Surface Wat	ter Present?	res	No <u>✓</u> Depth (inc	hes):							
Water Table	Present?	Yes	No <u>✓</u> Depth (inc	hes):							
Saturation P		Yes	No <u>✓</u> Depth (inc	hes):		Wetl	land Hydrolog	y Present? Yes No✓_			
	pillary fringe)	n dalide m	onitoring well, aerial p	hotos n	rovious in	enections)	if available:				
Describe ive	colded Data (Stream	ii gauge, iii	oriitoring well, aerial p	ποιος, ρ	revious iris	spections),	, ii avaliable.				
Domorko:											
Remarks:											

Project/Site: Kittitas County Waste Transfer Station	c	ity/County:	Ellensbur	rg/Kittitas	Sampling Date: 10)/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W1 SP6
Investigator(s): P. O'Neill	S	Section, Tov	wnship, Rar	nge: T18N R18E S28		
Landform (hillslope, terrace, etc.): Flat	[ocal relief	(concave, c	convex, none): none	Slope ((%):2
Subregion (LRR): LRR B	Lat: 47.0	14151022	24	Long: -120.59319891	Datum:	
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 perce						
Are climatic / hydrologic conditions on the site typical for this t						
Are Vegetation, Soil, or Hydrology sig				Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology nat				eded, explain any answe		-
SUMMARY OF FINDINGS – Attach site map sl						ures, etc.
Hydrophytic Vegetation Present? Yes _ ✓ No						
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No			e Sampled			
Wetland Hydrology Present? Yes No	_	withi	in a Wetlan	id? Yes	No <u>√</u>	
Remarks:		<u> </u>				
VEGETATION – Use scientific names of plants						
<u> </u>	Absolute	Dominant	Indicator	Dominance Test work	sheet:	
	% Cover			Number of Dominant Sp		
1				That Are OBL, FACW, o		(A)
2				Total Number of Domina		
3				Species Across All Stra	ta: <u>2</u>	(B)
4	:			Percent of Dominant Sp		(4 (5)
Sapling/Shrub Stratum (Plot size: 15 ft)	·	= Total Cov	vei	That Are OBL, FACW, o	or FAC:50	(A/B)
1				Prevalence Index worl		
2				Total % Cover of:		
3				OBL species		
4				FACW species 50 FAC species		
5	:			FAC species 50		
Herb Stratum (Plot size: 5 ft)		= Total Cov	vei	UPL species		
1. Festuca idahoensis	40	X	FACU	Column Totals: 10		
2. Agrostis stolonifera						
3. <u>Hypochaeris radicata</u>			DACU		= B/A =3.0	
4				Hydrophytic Vegetation Dominance Test is		
5				✓ Prevalence Index is		
6 7					ptations¹ (Provide sup	porting
8				data in Remarks	s or on a separate she	eet)
		= Total Cov	ver	Problematic Hydrop	phytic Vegetation ¹ (Ex	(plain)
Woody Vine Stratum (Plot size:)				11	l and one the address lands	
1				¹ Indicators of hydric soil be present, unless distu		gy must
2				Hydrophytic		
				Vegetation	,	
	of Biotic Cru	ust		Present? Yes	s√_ No	
Remarks:						

SOIL Sampling Point: W1 SP6

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

Depth	Matrix		Redox	x Feature:		. 2	_				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-18	10YR 3/2	99	10YR 3/6	1	С	<u>M</u>	clayey sil	clayey silt loam			
							·				
		_			-						
		_									
		_									
¹ Type: C=C	oncentration, D=Der	oletion, RM	I=Reduced Matrix, CS	=Covered	d or Coate	ed Sand Gr	rains. ² l oc	cation: PL=Pore Lining, M=Matrix.			
			I LRRs, unless other					for Problematic Hydric Soils ³ :			
Histosol	(A1)		Sandy Redo	x (S5)			1 cm N	Muck (A9) (LRR C)			
	pipedon (A2)		Stripped Ma					Muck (A10) (LRR B)			
Black Hi	istic (A3)		Loamy Mucl	ky Minera	l (F1)		Reduc	ed Vertic (F18)			
	en Sulfide (A4)		Loamy Gley		(F2)		·	arent Material (TF2)			
	d Layers (A5) (LRR	C)	Depleted Ma				Other	(Explain in Remarks)			
	uck (A9) (LRR D)	- (0.4.4)	Redox Dark	,	` '						
	d Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Da Redox Depr		. ,		3Indicators	of hydrophytic vegetation and			
	Mucky Mineral (S1)		Vernal Pools		го)			hydrology must be present,			
	Gleyed Matrix (S4)		vernar r eek	3 (1 0)				isturbed or problematic.			
	Layer (if present):										
Type:											
Depth (in	ches):						Hydric Soil	Present? Yes No ✓			
Remarks:	,										
11)/DD01.0	0 1/										
HYDROLO											
_	drology Indicators						_				
-		one require	ed; check all that apply					ndary Indicators (2 or more required)			
	Water (A1)		Salt Crust				Water Marks (B1) (Riverine)				
<u> </u>	ater Table (A2)		Biotic Crus	. ,			· 	ediment Deposits (B2) (Riverine)			
Saturati			Aquatic Inv				Drift Deposits (B3) (Riverine)				
	larks (B1) (Nonrive		Hydrogen					rainage Patterns (B10)			
	nt Deposits (B2) (No				_	-		ry-Season Water Table (C2)			
	posits (B3) (Nonrive	rine)	Presence o					rayfish Burrows (C8)			
	Soil Cracks (B6)	l / [Recent Iro			a Solis (Co	· —	aturation Visible on Aerial Imagery (C9)			
	on Visible on Aerial	imagery (E						hallow Aquitard (D3)			
Field Obser	tained Leaves (B9)		Other (Exp	nam in Ke	marks)		<u> </u>	AC-Neutral Test (D5)			
Surface Wat		/oc	No ✓ Depth (inc	shoc):							
			No <u>✓</u> Depth (inc								
Water Table								Proceed 2 Vee			
Saturation P (includes cap		'es	No <u>✓</u> Depth (inc	cnes):		weti	and Hydrolog	y Present? Yes No _✓			
		n gauge, m	onitoring well, aerial p	hotos, pr	evious ins	spections),	if available:				
Remarks:											

Project/Site: Kittitas County Waste Transfer Station		City/County:	Ellensbu	rg/Kittitas	Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point: _	W2 SP1
Investigator(s): P. O'Neill		Section, To	wnship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relief	(concave,	convex, none): none	Slop	oe (%):1_
Subregion (LRR): LRR B	at: 47.0	015922942	26	Long: -120.59300430)8 Datur	m:
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slopes						
Are climatic / hydrologic conditions on the site typical for this tim			,			
Are Vegetation, Soil, or Hydrology signi				"Normal Circumstances" p		/ No
Are Vegetation, Soil, or Hydrology natur				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map sho						atures, etc.
			5 Po		,	
Hydrophytic Vegetation Present? Yes _ ✓ No _ Hydric Soil Present? Yes _ ✓ No _			e Sampled		,	
Wetland Hydrology Present? Yes ✓ No		with	in a Wetlar	nd? Yes <u>√</u>	No	•
Remarks:						
VEGETATION – Use scientific names of plants.						
		Dominant Species?		Dominance Test work		
1				Number of Dominant Sport That Are OBL, FACW, or		(A)
2.						(* ')
3				Total Number of Domin Species Across All Stra		(B)
4						(/
		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of		0 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index wor		
1				Total % Cover of:		, by:
2				OBL species		
4				FACW species		
5				FAC species		
		= Total Cov		FACU species		
Herb Stratum (Plot size: 5 ft)				UPL species	x 5 =	
1. Poa pratensis	20	X	FAC	Column Totals:	(A)	(B)
2. Juncus effusus	40		FACW	Prevalence Index	= B/A =	
Rumex salicifolius Nasturtium occidentale		X	FACW OBL	Hydrophytic Vegetation		
				✓ Dominance Test is		
5				Prevalence Index is		
7				Morphological Ada		supporting
8.					s or on a separate	,
		= Total Cov	ver	Problematic Hydro	phytic Vegetation	(Explain)
Woody Vine Stratum (Plot size:)				1		
1				¹ Indicators of hydric soi be present, unless distu		
2				, ,		
		= Total Cov	ver	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum 10	Biotic Cr	ust		Present? Yes	sNo	
Remarks:	_					

SOIL Sampling Point: W2 SP1

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	Remarks				
Sale					
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. **Quartic Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A1) Sandy Redox (S5) 1 cm Muck Histic Epipedon (A2) Stripped Matrix (S6) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced V Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Paren Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Exp 1 cm Muck (A9) (LRR D) Depleted Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) **Indicators of h wetland hydr sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Gleyed Matrix (S4) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Salt Crust (B11) Water Marks (B1) (Nonriverine) Hydric Soil Pre **Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sadiment Deposits (B2) (Nonriverine) Dyrk Secondan Aquatic Invertebrates (B13) Dyrk Souriace (S6) Recent Iron Reduction in Tilled Soils (C6) Saturation Present? Yes No Y Depth (inches): Saturation Present? Yes No Y Depth (inches): Saturation Present? Yes No Y Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Princludes capillary fringe) Wetland Hydrology Princludes capillary fringe)					
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) — Sandy Redox (S5) — 1 cm Muck Histic Epipedon (A2) — Stripped Matrix (S6) — 2 cm Muck Black Histic (A3) — Loamy Mucky Mineral (F1) — Reduced V Hydrogen Sulfide (A4) — Loamy Gleyed Matrix (F2) — Red Paren Stratified Layers (A5) (LRR C) — Depleted Matrix (F3) — Other (Exp — 1 cm Muck (A9) (LRR D) — Redox Dark Surface (F6) — Depleted Below Dark Surface (A11) — Depleted Delox Dark Surface (A12) — Redox Depressions (F8) — Sandy Mucky Mineral (S1) — Sandy Mucky Mineral (S1) — Sandy Gleyed Matrix (S4) — Redox Depressions (F8) — Sandy Gleyed Matrix (S4) — Redox Depressions (F8) — Sandy Gleyed Matrix (S4) — Saturictive Layer (if present): — Type: — Depth (inches): — Depth (inches): — Depth (inches): — Biotic Crust (B12) — Saturation (A3) — Water Table (A2) — Biotic Crust (B12) — Sediment Deposits (B2) (Nonriverine) — Drift ID — Sediment Deposits (B2) (Nonriverine) — Drift Deposits (B3) (Nonriverine) — Presence of Reduced Iron (C4) — Crayfi — Surface Soil Cracks (B6) — Recent Iron Reduction in Tilled Soils (C6) — Saturation Visible on Aerial Imagery (B7) — Thin Muck Surface (C7) — Shalic — Water Present? — Yes — No — Depth (inches): — Wetland Hydrology Princludes capillary fringe) — Wetland Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (inches): — Saturation Present? — Yes — No — Depth (in	avelly silty clay				
Indicators (Applicable to all LRRs, unless otherwise noted.)					
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Sandy Redox (S5) 1 nm dicators for Histosol (A2) Stripped Matrix (S6) 2 cm Muck Black Histic (A3) Loamy Mucky Mineral (F1) Reduced V Hydrogen Sulfide (A4) Depleted Matrix (F2) Red Paren Stratified Layers (A5) (LRR C) Depleted Matrix (F2) Red Paren Stratified Layers (A5) (LRR D) Pepleted Matrix (F3) Other (Exp 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Perental (S1) Restrictive Layer (if present): Type: Depth (inches): Perental (S1) Preemarks: ###################################					
Indicators (Applicable to all LRRs, unless otherwise noted.)					
Indicators Ind					
Histosol (A1) Sandy Redox (S5) 1 cm Muck Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck Black Histic (A3) Loamy Mucky Mineral (F1) Reduced N Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Paren Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Exp 1 cm Muck (A9) (LRR D) Redox Dark Surface (F7) Thick Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Sandy Mucky Mineral (S1) Vernal Pools (F9) Wetland hydr Sandy Gleyed Matrix (S4) Uniforms (S1) Wernal Pools (F9) Wetland hydr Restrictive Layer (if present): Type: Depth (inches): Bernarks: YDROLOGY Vetland Hydrology Indicators: Virinary Indicators (minimum of one required; check all that apply) Secondan Surface Water (A1) Salt Crust (B11) Water High Water Table (A2) Biotic Crust (B12) Sedim Saturation (A3) Aquatic Invertebrates (B13) Drift II Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drain: Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-S Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfi Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation (A3) Restriction (A3) Recent Iron Reduction in Tilled Soils (C6) Saturation (A3) Thin Muck Surface (C7) Shallo Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallo Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-I Relator (B4) Wetland Hydrology Princludes capillary fringe) Vater Table Present? Yes No Depth (inches):	n: PL=Pore Lining, M=Matrix. Problematic Hydric Soils ³ :				
Histic Epipedon (A2) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced V Hydrogen Sulfide (A4) Stratified Layers (A5) (LRR C) Depleted Matrix (F2) 1 cm Muck (A9) (LRR D) Depleted Dark Surface (F6) Depleted Blow Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (F3) Other (Exp. 1) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Restrictive Layer (if present): Type: Depleted Dark Surface (A12) Popleted Dark Surface (F7) Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Semarks: YPROLOGY Netland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Semarks: YPROLOGY Netland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondan Surface Water (A1) High Water Table (A2) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Monriverine) Depth (inches): Drift Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallc Water-Stained Leaves (B9) Other (Exp. Other (Exp. Activation (A2) Wetland Hydrology Principulate (F1) Wetland Hydrology Principulate (F1) Wetland Hydrology Principulate (F1) Wetland Hydrology Principulate (F1) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	•				
Black Histic (A3)	(A10) (LRR B)				
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Paren Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Exp 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of hywetland hydrology (September 199) Wetland Hydrology (Indicators of Indicators (Indicators (Indica					
Stratified Layers (A5) (LRR C)	t Material (TF2)				
	lain in Remarks)				
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Indicators of he standy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology and Gleyed Matrix (S4) unless distured to the strictive Layer (if present): Type: Depth (inches): Hydric Soil Presents: Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondan Surface Water (A1) Salt Crust (B11) Water Table (A2) Seding Aquatic Invertebrates (B13) Drift Legistration (A3) Aquatic Invertebrates (B13) Drift Legistration (A3) Hydrogen Sulfide Odor (C1) Drain: Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Sediment Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfil Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Satura Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallic Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-I Field Observations: Surface Water Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): General Provious inspections), if available:	,				
Thick Dark Surface (A12)					
Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrounless distured and the process of the process	ydrophytic vegetation and				
	wetland hydrology must be present,				
Type:	bed or problematic.				
Present Pres					
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondan Surface Water (A1) Salt Crust (B11) Water High Water Table (A2) Biotic Crust (B12) Sedim Saturation (A3) Aquatic Invertebrates (B13) Drift L Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Draint Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-S Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfin Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallc Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-I Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation P					
YDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondam Surface Water (A1) Salt Crust (B11) Water High Water Table (A2) Biotic Crust (B12) Sedim Saturation (A3) Aquatic Invertebrates (B13) Drift Dri	sent? Yes <u>√</u> No				
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Surface Water (A1) High Water Table (A2) Salt Crust (B12) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Secondany Secondany Secondany Secondany Secondany Secondany Water Secondany Secondany Secondany Water Secondany Secondany Secondany Secondany Secondany Water Sediment Deposits (B12) Drift Deposits (B12) Drift Deposits (B13) Drift Deposit					
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Surface Water (A1) High Water Table (A2) Salt Crust (B12) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Secondany Secondany Secondany Secondany Secondany Secondany Water Secondany Secondany Secondany Water Secondany Secondany Secondany Secondany Secondany Water Sediment Deposits (B12) Drift Deposits (B12) Drift Deposits (B13) Drift Deposit					
Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Water Saturation Present? Yes No _ ✓ Depth (inches): Saturation Present? Yes No _ Present Present Present? Yes No _ Present Prese					
Surface Water (A1) Salt Crust (B11) Water High Water Table (A2) Biotic Crust (B12) Sedine Aquatic Invertebrates (B13) Drift Deposits (B2) (Nonriverine) Hydrogen Sulfide Odor (C1) Draine Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-S Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfi Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Sature Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shalled Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-I Surface Water Present? Yes No ✓ Depth (inches): Surface Water Present? Yes No ✓ Depth (inches): Saturation Present? Yes No ✓ Depth (inches): Saturation Present? Yes No Depth (inches): Saturation Presen	. In diagram (2 an annual annuing d)				
High Water Table (A2) Biotic Crust (B12) Sedim ✓ Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B1) (Nonriverine) Presence of Reduced Iron (C4) Crayfic Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Shallow Depth (inches): Other (Explain in Remarks) FAC-Isturation Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Presence of Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	y Indicators (2 or more required)				
✓ Saturation (A3)	r Marks (B1) (Riverine)				
Water Marks (B1) (Nonriverine)	nent Deposits (B2) (Riverine)				
Sediment Deposits (B2) (Nonriverine)	Deposits (B3) (Riverine)				
Drift Deposits (B3) (Nonriverine)	age Patterns (B10)				
Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shallow Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Interior Field Observations: Surface Water Present? Yes No _ ✓ Depth (inches): Water Table Present? Yes No _ ✓ Depth (inches): Saturation Present? Yes No _ Depth (inches): Wetland Hydrology Profile (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	eason Water Table (C2)				
Inundation Visible on Aerial Imagery (B7) Thin Muck Surface (C7) Shalld Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-IFIELD Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Preservible Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ish Burrows (C8)				
Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-I 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) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ation Visible on Aerial Imagery (C				
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) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	ow Aquitard (D3)				
Surface Water 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:	Neutral Test (D5)				
Water Table Present? Yes No ✓ Depth (inches): Saturation Present? Yes ✓ No Depth (inches): Wetland Hydrology Present (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Water Table Present? Yes No ✓ Depth (inches): Saturation Present? Yes ✓ No Depth (inches): Wetland Hydrology Present (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Saturation Present? Yes No Depth (inches): 6 Wetland Hydrology Profinction (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
	esent? Yes √ No				
Remarks:	esent? Yes <u>√</u> No				
	esent? Yes <u>√</u> No				
	esent? Yes <u>√</u> No				
	esent? Yes <u>√</u> No				
	esent? Yes <u>√</u> No				

Project/Site: Kittitas County Waste Transfer Station	(City/Count	ty: Ellensbu	rg/Kittitas	_ Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	_ Sampling Point:	W2 SP2
Investigator(s): P. O'Neill	;	Section, T	ownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	ef (concave,	convex, none): none	Slo	pe (%):1
Subregion (LRR): LRR B	Lat: 47.0	0159097	548	Long: <u>-120.5930993</u>	25 Datu	m:
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slop						
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrology signature.				'Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answ		
SUMMARY OF FINDINGS – Attach site map s			,		,	atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No					<u> </u>	<u> </u>
Hydric Soil Present? Yes No			the Sampled thin a Wetlar		No <u>√</u>	
Wetland Hydrology Present? Yes No		WIL	min a wetiar	id? fes	NO <u>*</u>	-
Remarks:						
VECETATION Lies esigntific names of plant	•					
VEGETATION – Use scientific names of plant		Damina		Daminanaa Taataa	lank a at	
			nt Indicator Status	Dominance Test wor Number of Dominant S		
1				That Are OBL, FACW		(A)
2				Total Number of Domi	nant	
3				Species Across All Str		(B)
4				Percent of Dominant S	Species	
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total C	Cover	That Are OBL, FACW		7(A/B)
1				Prevalence Index wo	rksheet:	
2.				Total % Cover of:		v bv:
3.				OBL species		
4.				FACW species		
5				FAC species	x 3 =	
- 0		= Total C	Cover	FACU species	x 4 =	
Herb Stratum (Plot size: 5 ft)	40	V	FAC	UPL species	x 5 =	
1. Poa pratensis		X	FAC	Column Totals:	(A)	(B)
Festuca idahoensis Agrostis stolonifera		X	FACU FACW	Prevalence Inde	x = B/A =	
				Hydrophytic Vegetat		
4. 5.				✓ Dominance Test i		
6				Prevalence Index		
7				Morphological Ad	aptations ¹ (Provide	
8.					ks or on a separate	,
		= Total C		Problematic Hydro	ophytic Vegetation'	(Explain)
Woody Vine Stratum (Plot size:)				No disease of building	-:	
1				¹ Indicators of hydric so be present, unless dis		
2				Hydrophytic	·	
				Vegetation		
% Bare Ground in Herb Stratum5	of Biotic Cr	rust		Present? Y	es <u>√</u> No	
Remarks:						<u> </u>

SOIL Sampling Point: W2 SP2

Depth	cription: (Describe Matrix	•		ox Features				,
(inches)	Color (moist)	%	Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-18	10YR 3/2	100					silt loam	gravelly
	· ·	·						_
		· ——— —						
	-							
	<u> </u>	<u> </u>						
¹ Type: C=C	Concentration, D=Dep	letion, RM=Re	duced Matrix. C	S=Covered	or Coate	d Sand Gr	ains. ² L	ocation: PL=Pore Lining, M=Matrix.
	Indicators: (Applic					a cana ch		rs for Problematic Hydric Soils ³ :
Histoso			Sandy Rec		,			Muck (A9) (LRR C)
	Epipedon (A2)		Stripped M					Muck (A10) (LRR B)
	Histic (A3)			cky Mineral	(F1)			uced Vertic (F18)
_	en Sulfide (A4)			yed Matrix (. ,			Parent Material (TF2)
	ed Layers (A5) (LRR (<u>-</u>)	Depleted N		(1 2)			r (Explain in Remarks)
	luck (A9) (LRR D)	J)		k Surface (F	- 6)		Ouie	(Explain in Nemarks)
	ed Below Dark Surfac	e (A11)		ark Surface	,			
	Dark Surface (A12)	0 (/////		ressions (F	. ,		3Indicator	rs of hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Poo		0)			d hydrology must be present,
	Gleyed Matrix (S4)		vernari ee	10 (1 0)				disturbed or problematic.
	Layer (if present):						111000	alotation of problematic.
			_				Unadala Ca	SI Brassant 2 Vac No /
Remarks:	nches):		=				Hydric 50	oil Present? Yes No _✓
HYDROLO								
Wetland Hy	ydrology Indicators:							
Primary Indi	icators (minimum of o	ne required; ch	neck all that app	ly)			Sec	ondary Indicators (2 or more required)
Surface	e Water (A1)		Salt Crus	t (B11)				Water Marks (B1) (Riverine)
High W	ater Table (A2)		Biotic Cru	st (B12)				Sediment Deposits (B2) (Riverine)
Saturat	, ,		Aquatic Ir		(B13)			Drift Deposits (B3) (Riverine)
	Marks (B1) (Nonriver	ine)	Hydrogen					Drainage Patterns (B10)
	ent Deposits (B2) (No	,				Living Root		Dry-Season Water Table (C2)
	eposits (B3) (Nonrive		Presence		_	_		Crayfish Burrows (C8)
	e Soil Cracks (B6)	ille)	Recent Ire					Saturation Visible on Aerial Imagery (C9)
	,	magan, (D7)				a Solis (Co		
Inundat	tion Visible on Aerial I	magery (B7)	Thin Muc					Shallow Aquitard (D3)
14/-1	Stained Leaves (B9)		Other (Ex	plain in Ren	narks)			FAC-Neutral Test (D5)
Field Obse			,					
Field Obse	iter Present? Y		✓ Depth (ir					
Field Obse	iter Present? Y		✓ Depth (ir					
Field Obse	ater Present? Y e Present? Y	es No _		nches):		_	and Hydrolo	gy Present? Yes No✓_
Field Obse Surface Wa Water Table Saturation F (includes ca	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obse Surface Wa Water Table Saturation F (includes ca	ter Present? Y e Present? Y Present? Y	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obse Surface Wa Water Table Saturation F (includes ca	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obse Surface Wa Water Table Saturation F (includes ca Describe Re	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓
Field Obser Surface Wa Water Table Saturation F (includes ca Describe Re	tter Present? Y e Present? Y Present? Y apillary fringe)	es No _ es No _	✓ Depth (ir	nches): nches):		Wetla		gy Present? Yes No _ ✓

Project/Site: Kittitas County Waste Transfer Station	C	ity/County	r: Ellensbu	rg/Kittitas	s	Sampling Date:	10/26/2016		
Applicant/Owner: Kittitas Solid Waste				State:	WA S	ampling Point:	W2 SP3		
Investigator(s): P. O'Neill	S	ection, To	wnship, Ra	nge: <u>T18N R18E</u>	S28				
Landform (hillslope, terrace, etc.): Flat	L	ocal relie	f (concave,	concave, convex, none): <u>none</u> Slope (%): <u>1</u>					
Subregion (LRR): LRR B	Lat: 47.0	1596337	75	Long: -120.59	2829769	Datu	ım:		
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slop									
Are climatic / hydrologic conditions on the site typical for this			,						
Are Vegetation, Soil, or Hydrology signature.				'Normal Circumsta			✓ No		
Are Vegetation, Soil, or Hydrology na				eded, explain any					
SUMMARY OF FINDINGS – Attach site map s							eatures, etc.		
Hydrophytic Vegetation Present? Yes No		T.		· · · · · · · · · · · · · · · · · · ·		-			
Hydric Soil Present? Yes No			ne Sampled			No.			
Wetland Hydrology Present? Yes No		With	nin a Wetlar	10? Y	es	_ No <u>√</u>	-		
Remarks:		•							
VEGETATION – Use scientific names of plant	S.								
-	Absolute	Dominant	Indicator	Dominance Te	st worksh	neet:			
	% Cover			Number of Dom					
1				That Are OBL, I	FACW, or	FAC:1	(A)		
2				Total Number o) (D)		
3				Species Across	All Strata	: <u> </u>	<u>2</u> (B)		
4	:			Percent of Dom That Are OBL, I			.Ω (Λ/D)		
Sapling/Shrub Stratum (Plot size: 15 ft)		- rotar oc	,,,,,	That Are OBL, I	FACVV, OI	FAC:	<u>U</u> (A/b)		
1				Prevalence Inc					
2				Total % Co					
3				OBL species					
4				FACW species FAC species					
5				FACU species					
Herb Stratum (Plot size: 5 ft)		- rotar oc	,,,,,	UPL species					
1. Poa pratensis		Х	FAC	Column Totals:	90	(A)	300 (B)		
2. <u>Festuca idahoensis</u>				Dravalana		D/A 2	22		
3				Hydrophytic V		B/A = <u>3</u>	.33		
4				Dominance	_				
5 6				Prevalence					
7						ations ¹ (Provide	supporting		
8.				data in I	Remarks c	or on a separate	e sheet)		
		= Total Co		Problemati	c Hydroph	ytic Vegetation	(Explain)		
Woody Vine Stratum (Plot size:)				1 Indicators of by	رطعنم ممنا م	and westleand build	Irology, mysot		
1				¹ Indicators of hybe present, unle					
2				Hydrophytic					
				Vegetation			,		
% Bare Ground in Herb Stratum5	of Biotic Cru	ust		Present?	Yes	No	✓		
Remarks:									

SOIL Sampling Point: W2 SP3

Profile Desc	ription: (Describe	to the depti	needed to docur	ment the i	ndicator	or confirm	n the absence of in	ndicators.)	
Depth	Matrix			x Feature	S	2			
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-18	10YR 3/2	100					silt loam		
									_
	oncentration, D=Dep					ed Sand Gr		n: PL=Pore Lining, M=	
•	ndicators: (Applic	able to all L			ed.)			Problematic Hydric S	oils":
Histosol	,		Sandy Red					(A9) (LRR C)	
	pipedon (A2)		Stripped Ma	` ,	1 (54)			(A10) (LRR B)	
Black His	, ,		Loamy Muc				Reduced V		
	n Sulfide (A4) I Layers (A5) (LRR (C)	Loamy Gley Depleted M		(FZ)			t Material (TF2) lain in Remarks)	
	ck (A9) (LRR D)	()	Redox Dark	. ,	(E6)		Other (Exp	iaiii iii Keiliaiks)	
	Below Dark Surfac	- (Δ11)	Depleted D		,				
	rk Surface (A12)	0 (7111)	Redox Dep				³ Indicators of h	ydrophytic vegetation a	and
	lucky Mineral (S1)		Vernal Pool		. • ,			ology must be present	
	leyed Matrix (S4)		<u> </u>	- (- /				bed or problematic.	,
	ayer (if present):							· · · · · · · · · · · · · · · · · · ·	
Type:									
	ches):		<u></u>				Hydric Soil Pre	sent? Yes	No ✓
Remarks:							1.,,		
rtomanto.									
HYDROLO	GY								
Wetland Hyd	Irology Indicators:								
•	ators (minimum of o		check all that appl	v)			Secondary	/ Indicators (2 or more	required)
Surface '		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Salt Crust					Marks (B1) (Riverine	
	ter Table (A2)		Biotic Crus	` '			·	nent Deposits (B2) (Riv	•
Saturation			Aquatic In		c (B13)			Deposits (B3) (Rivering	
	()	ino)	Hydrogen						-)
	arks (B1) (Nonriver				` '	Living Dog		age Patterns (B10)	2)
	t Deposits (B2) (No				_	_		eason Water Table (C	2)
	osits (B3) (Nonrive	rine)	Presence					sh Burrows (C8)	(00)
	Soil Cracks (B6)	(0.7)	Recent Iro			a Solis (Co	· —	ation Visible on Aerial	magery (C9)
	on Visible on Aerial	Imagery (B7)					· 	ow Aquitard (D3)	
· <u> </u>	tained Leaves (B9)		Other (Exp	plain in Re	marks)		FAC-I	Neutral Test (D5)	
Field Observ			,						
Surface Water			o <u>✓</u> Depth (in						
Water Table	Present? Y	'es N	o <u>√</u> Depth (in	ches):					
Saturation Pr		'es N	o 🗸 Depth (in	ches):		Wetl	and Hydrology Pro	esent? Yes	No <u>√</u>
(includes cap			itoring wall assists	nhotos ==	ovious is:	nootio:==)	if available:		
Describe Red	corded Data (stream	i gauge, mor	litoring well, aerial	pnotos, pr	evious ins	spections),	if available:		
Remarks:									

Project/Site: Kittitas County Waste Transfer Station	C	City/County:	Ellensbur	rg/Kittitas	Sampling Date: 1	0/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W3 SP1
Investigator(s): P. O'Neill		Section, To	wnship, Rar	nge: T18N R18E S28		
Landform (hillslope, terrace, etc.): Flat	l	Local relief	(concave, c	convex, none): none	Slope	(%):1
Subregion (LRR): LRR B	Lat: <u>47.0</u>	1671924	47	Long: -120.59236271	17 Datum:	·
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slope						
Are climatic / hydrologic conditions on the site typical for this tir			,			
Are Vegetation, Soil, or Hydrology sign				Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology natu				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map sh						ures, etc.
Hydrophytic Vegetation Present? Yes ✓ No _						
Hydric Soil Present? Yes No _			e Sampled		/	
Wetland Hydrology Present? Yes No _	_	with	in a Wetlan	d? Yes	No <u>√</u>	
Remarks:		L			-	
VEGETATION – Use scientific names of plants.						
·		Dominant	Indicator	Dominance Test work	sheet:	
6		Species?		Number of Dominant Sp		
1				That Are OBL, FACW, o		(A)
2				Total Number of Domina		
3				Species Across All Stra	ıta: <u>3</u>	(B)
4				Percent of Dominant Sp		
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total Co	ver	That Are OBL, FACW, o	or FAC: <u>67</u>	(A/B)
1				Prevalence Index work	ksheet:	
2				Total % Cover of:	Multiply b	oy:
3				OBL species		
4				FACW species		
5				FACIL species		
Herb Stratum (Plot size: 5 ft)		= Total Co	ver	FACU species UPL species		
1. Poa pratensis	40	X	FAC	Column Totals:		
2. <u>Festuca idahoensis</u>	20	X	FACU			
3. Agrostis stolonifera	20	X	FACW		= B/A =	
4				Hydrophytic Vegetatio		
5				✓ Dominance Test is		
6				Prevalence Index is	s ≤3.0 ptations¹ (Provide su	innorting
7					s or on a separate sh	
8		= Total Co	····	Problematic Hydror	phytic Vegetation ¹ (E	explain)
Woody Vine Stratum (Plot size:)		= Total Co	vei			
1				¹ Indicators of hydric soil be present, unless distu		
2				•	Tibed of problematic.	
_	:	= Total Co	ver	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum5 % Cover of	Biotic Cr	ust			s <u> </u>	_
Remarks:						

SOIL Sampling Point: W3 SP1

Profile Desc	ription: (Describ	oe to the dep	th needed to do	cument the i	indicator	or confirm	n the absence of inc	licators.)
Depth	Matrix	[edox Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-18	10YR 3/2	100					silt loam	
								_
				 -				
					· -			
	_							
1- 0.0							. 21	Di Di ilii Mara
	ncentration, D=D					ed Sand Gr		PL=Pore Lining, M=Matrix. roblematic Hydric Soils ³ :
-	ndicators: (App	licable to all			ea.)			•
Histosol			Sandy R	. ,			1 cm Muck (
	ipedon (A2)			Matrix (S6)				A10) (LRR B)
Black His				Mucky Minera			Reduced Ve	
	n Sulfide (A4)			Bleyed Matrix	(F2)			Material (TF2)
	Layers (A5) (LR	R C)		d Matrix (F3)			Other (Expla	in in Remarks)
	ck (A9) (LRR D)	/***		ark Surface				
	Below Dark Surf	ace (A11)		Dark Surfac	. ,		3	
	rk Surface (A12)			epressions (F8)			Irophytic vegetation and
	ucky Mineral (S1		Vernal P	ools (F9)				ogy must be present,
	leyed Matrix (S4)						unless disturbe	ed or problematic.
Restrictive L	.ayer (if present)	:						
Type:								
Depth (inc	ches):						Hydric Soil Prese	ent? Yes No <u>√</u>
Remarks:							1	
HYDROLOG	GY							
	Irology Indicator	re·						
_			lahada Hubata				0	- 1'1 (O)
	ators (minimum c	or one required						ndicators (2 or more required)
Surface \	Water (A1)		Salt Cr	ust (B11)				Marks (B1) (Riverine)
High Wa	ter Table (A2)		Biotic C	Crust (B12)			Sedime	nt Deposits (B2) (Riverine)
Saturatio	n (A3)		Aquatio	Invertebrate	es (B13)		Drift De	posits (B3) (Riverine)
Water Ma	arks (B1) (Nonri v	verine)	Hydrog	en Sulfide O	dor (C1)		Drainag	je Patterns (B10)
Sedimen	t Deposits (B2) (I	Nonriverine)	Oxidize	ed Rhizosphe	res along	Living Roc	ots (C3) Dry-Sea	ason Water Table (C2)
	osits (B3) (Nonri			ce of Reduce	_	_		n Burrows (C8)
	Soil Cracks (B6)	,	·	Iron Reducti	•	•		ion Visible on Aerial Imagery (C9)
	on Visible on Aeria	al Imageny (Bi		uck Surface (a 00110 (00	· —	Aquitard (D3)
· 		• • •	,					
	ained Leaves (B9	9)	Other (Explain in Re	emarks)		FAC-NE	eutral Test (D5)
Field Observ			,					
Surface Water	er Present?	· · · · · · · · · · · · · · · · · · ·	No <u>✓</u> Depth					
Water Table	Present?	Yes I	No <u>✓</u> Depth	(inches):		_		
Saturation Pr	esent?	Yes I	No <u>✓</u> Depth	(inches): _		Wetl	and Hydrology Pres	sent? Yes No✓
(includes cap								
Describe Rec	corded Data (stream	am gauge, mo	nitoring well, aer	ial photos, pr	evious ins	pections),	if available:	
Remarks:								

Project/Site: Kittitas County Waste Transfer Station	(City/County	y: <u>Ellensbu</u>	rg/Kittitas	Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampling Point:	W3 SP2
Investigator(s): P. O'Neill		Section, To	ownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	f (concave,	convex, none): none	Slo	pe (%):1
Subregion (LRR): LRR B	Lat: 47.0	01673439	972	Long: -120.5925106	81 Datu	m:
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slop						
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrology sig				'Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map s						atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No				<u> </u>	<u>·</u>	· · · · · · · · · · · · · · · · · · ·
Hydric Soil Present? Yes ✓ No			he Sampled		/ Na	
Wetland Hydrology Present? Yes ✓ No		Witi	hin a Wetlar	1d? Yes <u>√</u>	No	-
Remarks:						
VEGETATION – Use scientific names of plants	•					
<u></u>		Dominan	t Indicator	Dominance Test work	kshoot:	
			Status	Number of Dominant S		
1				That Are OBL, FACW,		(A)
2				Total Number of Domir	nant	
3				Species Across All Stra	ata: <u>3</u>	(B)
4				Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: 15 ft)		= Total Co	over	That Are OBL, FACW,	or FAC:10	00 (A/B)
1				Prevalence Index wor	rksheet:	
2				Total % Cover of:	Multipl	y by:
3				OBL species	x 1 =	
4				FACW species		
5				FAC species		
Herb Stratum (Plot size: 5 ft)		= Total Co	over	FACU species		
1. Poa pratensis	30	Х	FAC	UPL species		
2. Juncus effusus		Х		Column Totals:	(A)	(Б)
3. Rumex salicifolius	30	X	FACW	Prevalence Index	< = B/A =	
4. Agrostis stolonifera	5		FACW	Hydrophytic Vegetati	on Indicators:	
5. Nasturtium occidentale	5		OBL	✓ Dominance Test is		
6				Prevalence Index		
7				Morphological Ada data in Remark	aptations" (Provide as or on a separate	
8				Problematic Hydro	·	*
Woody Vine Stratum (Plot size:)	90	= Total Co	over			
1				¹ Indicators of hydric so		
2				be present, unless dist	urbed or problema	tic.
		= Total Co		Hydrophytic		
% Bare Ground in Herb Stratum 10 % Cover of	of Biotic C	rust		Vegetation Present? Ye	es <u>√</u> No	
Remarks:				1		

SOIL Sampling Point: W3 SP2

(inches) 0-6 6-18	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
	10YR 3/1	100			.,,,,,			cobbly silt loam
0-18			7. FVD. 4./C	- 				
	10YR 3/1	95	7.5YR 4/6	<u>5</u> - ——	<u>C</u>	M	gravelly s	gravelly silty clay
				_				
			=Reduced Matrix, C			d Sand G		cation: PL=Pore Lining, M=Matrix.
		cable to al	I LRRs, unless other		ted.)			for Problematic Hydric Soils ³ :
Histosol	` '		Sandy Red					Muck (A9) (LRR C)
	pipedon (A2)		Stripped M		-I (- 4)			Muck (A10) (LRR B)
Black His	` '		Loamy Mu					red Vertic (F18)
	n Sulfide (A4)	C \	Loamy Gle					arent Material (TF2)
	l Layers (A5) (LRR ck (A9) (LRR D)	C)	Depleted N _✓ Redox Dar				Otner	(Explain in Remarks)
	ck (A9) (LRR D) I Below Dark Surfa	co (A11)	Depleted D		. ,			
	irk Surface (A12)	Ce (ATT)	Redox Dep				3Indicators	of hydrophytic vegetation and
	lucky Mineral (S1)		Vernal Poo		(i U)			hydrology must be present,
	leyed Matrix (S4)		70111411 00	(1 0)				listurbed or problematic.
	ayer (if present):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes No
Remarks:								
YDROLO	GY Irology Indicators							
Netland Hyd		•						
-			ad: check all that ann	dv)			Secon	adary Indicators (2 or more required)
Primary Indic	ators (minimum of		ed; check all that app	•				ndary Indicators (2 or more required)
Primary Indic Surface \	ators (minimum of Water (A1)		Salt Crus	t (B11)			V	Vater Marks (B1) (Riverine)
Primary Indic Surface \ High Wa	water (A1) ter Table (A2)		Salt Crus Biotic Cru	t (B11) ist (B12)	oo (P42)		v	Vater Marks (B1) (Riverine) deciment Deposits (B2) (Riverine)
Primary Indic Surface \ High Wa Saturatio	ators (minimum of Water (A1) ter Table (A2) on (A3)	one require	Salt Crus Biotic Cru Aquatic Ir	t (B11) ist (B12) nvertebrate	, ,		v s d	Vater Marks (B1) (Riverine) sediment Deposits (B2) (Riverine) brift Deposits (B3) (Riverine)
Primary Indic Surface \ High Wa ✓ Saturatio Water Ma	ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive	one require	Salt Crus Biotic Cru Aquatic Ir Hydroger	t (B11) ust (B12) nvertebrate n Sulfide O	dor (C1)	Lining Do	v s d	Vater Marks (B1) (Riverine) sediment Deposits (B2) (Riverine) Prift Deposits (B3) (Riverine) Prainage Patterns (B10)
Primary Indic Surface \ High Wa ✓ Saturatio Water Ma Sedimen	ators (minimum of Water (A1) ter Table (A2) on (A3) arks (B1) (Nonrive tt Deposits (B2) (No	one require erine) onriverine)	Salt Crus Biotic Cru Aquatic Ir Hydroger Oxidized	t (B11) ust (B12) nvertebrate Sulfide O Rhizosphe	dor (C1) eres along	_	V S D ots (C3) D	Vater Marks (B1) (Riverine) sediment Deposits (B2) (Riverine) brift Deposits (B3) (Riverine) brainage Patterns (B10) bry-Season Water Table (C2)
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Project/Site: Kittitas County Waste Transfer Station	c	City/Cour	nty: <u>Ellensk</u>	ourg/Kittitas	§	Sampling Date:	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State:	WA S	Sampling Point:	W3 SP3
Investigator(s): P. O'Neill		Section,	Township, F	Range: T18N R18E	S28		
Landform (hillslope, terrace, etc.): Flat		Local rel	ief (concave	e, convex, none): <u>no</u>	one	Slo	pe (%):1
Subregion (LRR): LRR B	_ Lat: <u>47.0</u>	168033	3206	Long: -120.59	2670338	Datu	ım:
Soil Map Unit Name: Zillah silt loam, 0 to 2 percent slo							
Are climatic / hydrologic conditions on the site typical for this			,				
Are Vegetation, Soil, or Hydrologysi				e "Normal Circumsta			✓ No
Are Vegetation, Soil, or Hydrology na				needed, explain any			
SUMMARY OF FINDINGS – Attach site map							atures, etc.
-			9		,		
Hydrophytic Vegetation Present? Yes No			the Sample			,	
Wetland Hydrology Present? Yes No		w	ithin a Wetl	land? Ye	es	_ No <u>√</u>	-
Remarks:							
VEGETATION II : ('C' C'							
VEGETATION – Use scientific names of plant							
Tree Stratum (Plot size: 30 ft)	Absolute % Cover		int Indicato s? Status				
1				 Number of Dom That Are OBL, I 			(A)
2.				Total Number o			
3							<u>2</u> (B)
4				Percent of Dom	inant Sne	ries	
Copling/Chruh Ctratum (Diet size) 15 ft		= Total (Cover	That Are OBL, I			0 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft) 1				Prevalence Inc	lex works	heet:	
2.				-			v bv:
3.				OBL species			
4.							
5				_ FAC species	50	x 3 =	150
50		= Total (Cover	FACU species	30	x 4 =	120
Herb Stratum (Plot size: 5 ft)	Ε0	V	FAC	UPL species			
Poa pratensis Festuca idahoensis			FACU	Column Totals:	80	(A)	270 (B)
3					e Index =	B/A = 3.	375
4.				Hydrophytic V			
5.				Dominance	Test is >	50%	
6				Prevalence			
7						ations ¹ (Provide	
8				Problematic		or on a separate	,
Woody Vine Stratum (Plot size:)	80	= Total (Cover	i iobiemati	гтушорп	ylic vegetation	(Explain)
1				¹ Indicators of hy	/dric soil a	and wetland hyd	rology must
2.				be present, unle			
				Hydrophytic			
% Bare Ground in Herb Stratum5				Vegetation Present?	Vas	No	1
Remarks:	OI DIOUG OI	uoi	_	i iesent!	169	NO	
Tromatro.							
1							

SOIL Sampling Point: W3 SP3

Profile Description: (Describe to the dept Depth Matrix	Redox Fea				
(inches) Color (moist) %	Color (moist) %	1	Loc ²	Texture	Remarks
0-18 10YR 3/2 100				silt loam	
					
¹ Type: C=Concentration, D=Depletion, RM=	Reduced Matrix, CS=Cov	ered or Coate	ed Sand Gr	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable to all I	LRRs, unless otherwise	noted.)		Indicators	for Problematic Hydric Soils ³ :
Histosol (A1)	Sandy Redox (S5)		1 cm l	Muck (A9) (LRR C)
Histic Epipedon (A2)	Stripped Matrix (S	66)		2 cm l	Muck (A10) (LRR B)
Black Histic (A3)	Loamy Mucky Mir	neral (F1)		Reduc	ced Vertic (F18)
Hydrogen Sulfide (A4)	Loamy Gleyed Ma	atrix (F2)		Red P	Parent Material (TF2)
Stratified Layers (A5) (LRR C)	Depleted Matrix (F3)		Other	(Explain in Remarks)
1 cm Muck (A9) (LRR D)	Redox Dark Surfa	ice (F6)			
Depleted Below Dark Surface (A11)	Depleted Dark Su				
Thick Dark Surface (A12)	Redox Depressio				of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Vernal Pools (F9)				hydrology must be present,
Sandy Gleyed Matrix (S4)				unless o	disturbed or problematic.
Restrictive Layer (if present):					
Туре:					
Type: Depth (inches):	<u> </u>			Hydric Soil	I Present? Yes No _√_
,,	<u> </u>			Hydric Soi	I Present? Yes No✓
Depth (inches):	<u> </u>			Hydric Soil	I Present? Yes No✓
Depth (inches):Remarks:				Hydric Soil	I Present? Yes No✓
Depth (inches):Remarks:				Hydric Soil	I Present? Yes No _✓
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators:					
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required	; check all that apply)			Seco	ndary Indicators (2 or more required)
Depth (inches):	; check all that apply) Salt Crust (B11)			Seco	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2)	; check all that apply) Salt Crust (B11) Biotic Crust (B12)	2)		<u>Seco</u> V \$	ndary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3)	; check all that apply) Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb	2) rates (B13)		Seco V S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine)	; check all that apply) Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb Hydrogen Sulfid	2) rates (B13) e Odor (C1)		Seco V S C	ndary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10)
Depth (inches):	; check all that apply) Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos	2) rates (B13) e Odor (C1) pheres along	_	<u>Seco</u> V C C	ndary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2)
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Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6)	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec	rates (B13) e Odor (C1) pheres along duced Iron (C-	1)	Seco V S C L ts (C3) C C5) S	ndary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
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Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6)	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec	rates (B13) e Odor (C1) pheres along duced Iron (C4 luction in Tille ce (C7)	1)	Seco V S C S C S C S S S S	ndary Indicators (2 or more required) Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
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Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	; check all that apply) Salt Crust (B11) Biotic Crust (B12 Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa	rates (B13) e Odor (C1) pheres along duced Iron (C- luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S C S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C- luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S C S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	: check all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Recent Iron Rec Thin Muck Surfa Other (Explain in the solution of the solution o	rates (B13) e Odor (C1) pheres along duced Iron (C4 luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and sequence water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes Notes	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and and and and and and and and and an	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No saturation P	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No saturation P	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Depth (inches): Remarks: HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required and surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No saturation P	Scheck all that apply) Salt Crust (B11) Biotic Crust (B12) Aquatic Inverteb Hydrogen Sulfid Oxidized Rhizos Presence of Rec Recent Iron Rec Thin Muck Surfa Other (Explain in	rates (B13) e Odor (C1) pheres along duced Iron (C4) luction in Tille ce (C7) n Remarks)	4) d Soils (C6	Seco V S C S C S S S S F	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5)

Project/Site: Kittitas County Waste Transfer Station	(City/Count	y: <u>Ellensbu</u>	rg/Kittitas	_ Sampling Date:	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	_ Sampling Point:	PW1 SP1
Investigator(s): P. O'Neill	;	Section, T	ownship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	ef (concave,	convex, none): none	Slo	ppe (%):1
Subregion (LRR): LRR B	Lat: 47.0	0149538	5	Long: -120.5930689	Datı	ım:
Soil Map Unit Name: Nack-Opnish, 0 to 2 percent slope						
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrology sig				'Normal Circumstances"		√ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answ		
SUMMARY OF FINDINGS – Attach site map s						eatures, etc.
Hydrophytic Vegetation Present? Yes ✓ No					<u> </u>	
Hydric Soil Present? Yes No			he Sampled hin a Wetlar		No <u></u> ✓	
Wetland Hydrology Present? Yes No		WIL	iiii a vvetiai	iu: Tes	NO	_
Remarks:						
VEGETATION – Use scientific names of plants	<u> </u>					
<u> </u>		Dominar	nt Indicator	Dominance Test wor	·ksheet·	
			Status	Number of Dominant		
1				That Are OBL, FACW		(A)
2				Total Number of Domi		
3				Species Across All Str	:ata:	1 (B)
4				Percent of Dominant S		_
Sapling/Shrub Stratum (Plot size:15)		= rotarC	over	That Are OBL, FACW	, or FAC:(0 (A/B)
1				Prevalence Index wo	rksheet:	
2				Total % Cover of:	<u>Multip</u>	ly by:
3				OBL species		
4				FACW species 15		
5				FACULTURE 30		
Herb Stratum (Plot size: 5		= Total C	over	FACU species 20 UPL species		
1. Poa pratensis	5		FAC	Column Totals:		125 (B)
2. Juncus effusus	10		FACW	Column Totals.	<u>10</u> (A)	<u>123</u> (B)
3. Rumex salicifolius	5		FACW		ex = B/A =3.	125
4. <u>Trifolium repens</u>	20	X	FACU	Hydrophytic Vegetat		
5				Dominance Test i		
6				✓ Prevalence Index	ris ≤3.0° aptations¹ (Provide	aupporting
7					ks or on a separate	
8		= Total C		Problematic Hydr	ophytic Vegetation	¹ (Explain)
Woody Vine Stratum (Plot size:)	40	= rotar C	over			
1				¹ Indicators of hydric so		
2				be present, unless dis	turbed or problema	ATIC.
		= Total C	over	Hydrophytic Vegetation		
% Bare Ground in Herb Stratum30	of Biotic Cr	rust			es <u>√</u> No _	
Remarks:				1		

SOIL Sampling Point: PW1 SP1

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

Depth	Matrix			x Feature:		. 2	_	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	98	10YR 3/6	2	С	<u>M</u>	clayey sil	clayey silt loam
							-	
							·	
					-			
		_						
¹ Type: C=C	oncentration D=Der	oletion RM	I=Reduced Matrix, CS	S=Covered	d or Coate	ed Sand Gi	rains ² Loc	cation: PL=Pore Lining, M=Matrix.
			I LRRs, unless other			oa cana ci		for Problematic Hydric Soils ³ :
Histosol			Sandy Redo		,			Muck (A9) (LRR C)
	pipedon (A2)		Stripped Ma					Muck (A10) (LRR B)
	istic (A3)		Loamy Muck		l (F1)			ed Vertic (F18)
Hydroge	en Sulfide (A4)		Loamy Gley	ed Matrix	(F2)		Red Pa	arent Material (TF2)
	d Layers (A5) (LRR	C)	Depleted Ma				Other	(Explain in Remarks)
	uck (A9) (LRR D)		Redox Dark	,	` '			
	d Below Dark Surfac	e (A11)	Depleted Da		. ,		31 12 1	of hardware design and the first and
	ark Surface (A12) Mucky Mineral (S1)		Redox Depr Vernal Pools		F8)			of hydrophytic vegetation and hydrology must be present,
	Gleyed Matrix (S4)		vernai Pools	5 (୮૭)				isturbed or problematic.
	Layer (if present):						1	istance of problematic.
Type:								
Depth (in	ches).						Hydric Soil	Present? Yes No ✓
Remarks:	ones)						Tiyano con	1100m. 100 140
Remarks.								
HYDROLO								
_	drology Indicators							
Primary India	cators (minimum of	one require	ed; check all that apply				<u>Secor</u>	ndary Indicators (2 or more required)
	Water (A1)		Salt Crust	(B11)				Vater Marks (B1) (Riverine)
High Wa	ater Table (A2)		Biotic Crus	t (B12)			s	ediment Deposits (B2) (Riverine)
Saturati			Aquatic Inv	ertebrate/	s (B13)		D	rift Deposits (B3) (Riverine)
	larks (B1) (Nonrive		Hydrogen S					rainage Patterns (B10)
	nt Deposits (B2) (No				_	_		ry-Season Water Table (C2)
	posits (B3) (Nonrive	rine)	Presence of					rayfish Burrows (C8)
	Soil Cracks (B6)		Recent Iron			d Soils (C6	· —	aturation Visible on Aerial Imagery (C9)
	on Visible on Aerial	Imagery (E						hallow Aquitard (D3)
	stained Leaves (B9)		Other (Exp	lain in Re	emarks)		<u></u>	AC-Neutral Test (D5)
Field Obser								
Surface Wat			No <u>✓</u> Depth (inc					
Water Table			No <u>✓</u> Depth (inc					,
Saturation P		'es	No ✓ Depth (inc	ches):		Wetl	and Hydrolog	y Present? Yes No✓
(includes cap Describe Re		n gauge, m	onitoring well, aerial p	photos, pr	evious ins	spections).	if available:	
	2000 (000000	J	g, acriai p	, pi				
Remarks:								
Nomano.								

Project/Site: Kittitas County Waste Transfer Station	(City/Cou	nty: Ellensbu	ırg/Kittitas	Sampli	ing Date: _	10/26	/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	Sampli	ng Point:	PW2	! SP1
Investigator(s): P. O'Neill		Section,	Township, Ra	inge: <u>T18N R18E S2</u>	8			
Landform (hillslope, terrace, etc.): Flat		Local re	lief (concave,	convex, none): none	<u> </u>	Slo	pe (%):	1
Subregion (LRR): LRR B	Lat: 47.0	017888	2611	_ Long: -120.59102	23754	Datu	ım:	
Soil Map Unit Name: Brickmill gravelly ashy loam, 0 to 2	percent	slopes		NWI clas	ssification: N	lone	· · · · · · · · · · · · · · · · · · ·	
Are climatic / hydrologic conditions on the site typical for this			,					
Are Vegetation, Soil, or Hydrology sig				"Normal Circumstance			✓ No)
Are Vegetation, Soil, or Hydrology na				eeded, explain any ar				
SUMMARY OF FINDINGS – Attach site map s							atures	s, etc.
Hydrophytic Vegetation Present? Yes _ ✓ No								
Hydric Soil Present? Yes No			the Sampled		N	- /		
Wetland Hydrology Present? Yes No		W	rithin a Wetlar	na? res_	N	D <u>v</u>	-	
Remarks:								
VEGETATION – Use scientific names of plants	<u> </u>							
·		Domina	ant Indicator	Dominance Test v	vorksheet:			
			s? Status	Number of Domina				
1				That Are OBL, FAC		0)	(A)
2				Total Number of Do	ominant			
3				Species Across All	Strata:	1	<u> </u>	(B)
4				Percent of Domina				
Sapling/Shrub Stratum (Plot size: 15)		= I otal	Cover	That Are OBL, FAC	CW, or FAC:)	(A/B)
1		-		Prevalence Index	worksheet:			
2				Total % Cover	of:	Multipl	y by:	_
3				OBL species 15				
4				FACW species 10				
5				FAC species				_
Herb Stratum (Plot size: 5		= Total	Cover	FACU species 20				
1. Festuca idahoensis	20	Х	FACU	UPL species Column Totals:			115	
2. Juncus effusus		•	FACW	Column Totals.	(^)	113	_ (D)
3. Veronica americana	10		OBL_	Prevalence Ir	dex = B/A =	=2	<u>5</u>	_
4. Ranunculus sceleratus	5		OBL	Hydrophytic Vege		ators:		
5				Dominance Te				
6				✓ Prevalence Inc		1 (0		
7				Morphological data in Ren	Adaptations narks or on a			ing
8				Problematic H	ydrophytic V	egetation ¹	(Explair	n)
Woody Vine Stratum (Plot size:)	45	= Total	Cover					
1				¹ Indicators of hydri				nust
2				be present, unless	disturbed or	problema	tic.	
				Hydrophytic				
% Bare Ground in Herb Stratum 30 % Cover of	of Biotic Cr	ust		Vegetation Present?	Yes <u>√</u>	No		
Remarks:		_ _	_	1				

SOIL Sampling Point: PW2 SP1

Profile Desc	cription: (Describe	to the depth ne	eded to docu	ment the i	ndicator	or confirm	the absence	e of indicators.)
Depth	Matrix			x Features	S	2		
(inches)	Color (moist)	%C	olor (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-16	10YR 3/2	100					clayey sil	clayey silt loam
ļ ———	-	· 			·			
<u> </u>								
-	-	· ——						
1							. 2	
	oncentration, D=Dep					d Sand Gr		cation: PL=Pore Lining, M=Matrix.
1 -	Indicators: (Applic				ea.)			s for Problematic Hydric Soils ³ :
Histosol	` '	_	Sandy Red					Muck (A9) (LRR C)
	pipedon (A2)	_	Stripped Ma		L (E4)			Muck (A10) (LRR B)
Black Hi	, ,	_	Loamy Muc					ced Vertic (F18)
	en Sulfide (A4) d Layers (A5) (LRR (_	Loamy Gley Depleted M		(FZ)			Parent Material (TF2) (Explain in Remarks)
	uck (A9) (LRR D)	_	Depleted M Redox Dark		(F6)		Other	(Explain in Kemarks)
	d Below Dark Surface	e (A11)	Negleted D	,	. ,			
	ark Surface (A12)	_	Redox Dep				3Indicators	of hydrophytic vegetation and
	Mucky Mineral (S1)	-	Vernal Poo		-,			hydrology must be present,
	Bleyed Matrix (S4)	_		` ,				disturbed or problematic.
Restrictive I	Layer (if present):							
Type:								
Depth (inc	ches):						Hydric Soi	I Present? Yes No ✓
Remarks:	,							
rtomanto.								
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary India	cators (minimum of o	ne required; che	eck all that appl	y)			Seco	ndary Indicators (2 or more required)
Surface	Water (A1)	•	Salt Crust	(B11)				Water Marks (B1) (Riverine)
	ater Table (A2)		Biotic Crus	` '				Sediment Deposits (B2) (Riverine)
✓ Saturation	, ,		Aquatic In		s (B13)			Orift Deposits (B3) (Riverine)
_	larks (B1) (Nonriver i	ine)	Hydrogen					Orainage Patterns (B10)
	nt Deposits (B2) (No				, ,	Living Poo		Ory-Season Water Table (C2)
	posits (B3) (Nonrive		Presence		_	_		Crayfish Burrows (C8)
		ine)	Recent Iro					
	Soil Cracks (B6)	magan, (DZ)				30115 (C0		Saturation Visible on Aerial Imagery (C9)
	on Visible on Aerial I	magery (b7)	Thin Muck					Shallow Aquitard (D3)
	tained Leaves (B9)		Other (Exp	Diain in Re	marks)			FAC-Neutral Test (D5)
Field Obser			(5 4 6					
Surface Water		es No _						
Water Table		es No						
Saturation P		es <u> </u>	Depth (in	ches): <u>10</u>		_ Wetla	and Hydrolog	yy Present? Yes No
(includes cap	oillary fringe) corded Data (stream	gauge monitori	ing well aerial	nhotos nr	aviaus ins	nections)	if available:	
Describe Net	coraca Data (strcam	gauge, monitori	ing well, aeriai	priotos, pri	CVIOUS IIIS	pections),	ii availabic.	
Damanla								
Remarks:								

Project/Site: Kittitas County Waste Transfer Station	City/County: Ellensbu	ırg/Kittitas	Sampling Date: 10/26/2016
Applicant/Owner: Kittitas Solid Waste		State: WA	Sampling Point: PW3 SP1
Investigator(s): P. O'Neill	Section, Township, Ra	ange: <u>T18N R18E S28</u>	
Landform (hillslope, terrace, etc.): Flat	Local relief (concave,	convex, none): none	Slope (%):1
Subregion (LRR): LRR B Lat:	47.0183736127	_ Long: -120.58872517	'3 Datum:
Soil Map Unit Name: Nanum ashy loam, 0 to 2 percent slope			
Are climatic / hydrologic conditions on the site typical for this time o	,		
Are Vegetation, Soil, or Hydrology significal			oresent? Yes✓ No
Are Vegetation, Soil, or Hydrology naturally		eeded, explain any answei	
SUMMARY OF FINDINGS – Attach site map showi			
Hydrophytic Vegetation Present? Yes No✓		<u> </u>	· · ·
Hydric Soil Present? Yes No ✓	is the Samplet		/
Wetland Hydrology Present? Yes ✓ No		nd? Yes	No <u> </u>
Remarks:	l .		
VECETATION . Her acjoutific names of plants			
VEGETATION – Use scientific names of plants.	Desired by Perter	T.B	alia ad
	ute Dominant Indicator ver Species? Status	Number of Dominant Sp	
1		That Are OBL, FACW, of	l .
2		Total Number of Domina	ant
3		Species Across All Stra	
4		Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size:15)	= Total Cover		or FAC: <u>50</u> (A/B)
1		Prevalence Index worl	ksheet:
2.		Total % Cover of:	Multiply by:
3.		OBL species	x 1 =
4		FACW species	x 2 =
5		-	x 3 = <u>150</u>
	= Total Cover	FACU species 30	
	X FACU	*	X 5 =
	X FAC	Column Totals: 80	0 (A) <u>270</u> (B)
3.		Prevalence Index	= B/A = <u>3.375</u>
4		Hydrophytic Vegetation	on Indicators:
5		Dominance Test is	
6		Prevalence Index is	
7		Morphological Adap	ptations ¹ (Provide supporting s or on a separate sheet)
8			ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)) = Total Cover		
1			l and wetland hydrology must
2		be present, unless distu	ırbed or problematic.
	= Total Cover	Hydrophytic	
% Bare Ground in Herb Stratum5	ic Crust	Vegetation Yes	s No_ <u>√</u> _
Remarks:		1	_

SOIL Sampling Point: PW3 SP1

Depth	Matrix			ox Features	/pe ¹ Loc ²		Dawnste
(inches)	Color (moist)		Color (moist)	%Ty	/pe ¹ Loc ²		Remarks
0-8 1	0YR 3/2	100				clayey sil	clayey silt loam
<u>8-16</u> <u>1</u>	0YR 3/2	100				sandy, gr <u>∓</u>	sandy, gravelly silt loam
			Reduced Matrix, C		Coated Sand		cation: PL=Pore Lining, M=Matrix.
•		able to all Li	RRs, unless othe	•			for Problematic Hydric Soils ³ :
Histosol (A	,		Sandy Red				Muck (A9) (LRR C)
Histic Epipe			Stripped M				Muck (A10) (LRR B)
Black Histic	` '			cky Mineral (F1	,		eed Vertic (F18)
Hydrogen S				yed Matrix (F2))		arent Material (TF2)
	ayers (A5) (LRR (;)	Depleted M	, ,		Other	(Explain in Remarks)
	(A9) (LRR D)	(0.4.4)		k Surface (F6)	- \		
	elow Dark Surface	e (A11)		ark Surface (F	7)	31 11 1	
	Surface (A12)			ressions (F8)			of hydrophytic vegetation and
	ky Mineral (S1) ved Matrix (S4)		Vernal Poo	ols (F9)			hydrology must be present, listurbed or problematic.
	ver (if present):					dilicos d	instance of problematic.
_	,						
Depth (inche	es):					Hydric Soil	Present? Yes No ✓
Depth (inche	es):		<u> </u>			Hydric Soil	Present? Yes No _✓
Remarks:			_			Hydric Soil	Present? Yes No _✓
Remarks:	1					Hydric Soil	Present? Yes No _✓
YDROLOGY Wetland Hydro	Y ology Indicators:			lv)			
YDROLOGY Wetland Hydro Primary Indicato	f logy Indicators: ors (minimum of o		check all that app	• •		Secon	ndary Indicators (2 or more required)
YDROLOGY Wetland Hydro Primary Indicato Surface Wa	ology Indicators: ors (minimum of o		check all that app	t (B11)		SeconV	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine)
YDROLOGY Wetland Hydro Primary Indicato Surface Wa	ology Indicators: ors (minimum of oater (A1) Table (A2)		check all that app Salt Crust Biotic Cru	t (B11) est (B12)	42)	Secon	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)
YDROLOGY Wetland Hydro Primary Indicato Surface Wa High Water Saturation	ology Indicators: ors (minimum of oater (A1) Table (A2) (A3)	ne required;	check all that app Salt Crust Biotic Cru Aquatic In	t (B11) est (B12) evertebrates (B	•	Secon	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation of Water Mark	logy Indicators: ors (minimum of oater (A1) Table (A2) (A3) (A3) (A3)	ne required;	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen	t (B11) st (B12) overtebrates (B ² Sulfide Odor (C1)	Secon V S D D D	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation (Water Mark	ology Indicators: ors (minimum of oater (A1) Table (A2) (A3) (A3) (A5) (A6) (A6) (A6) (A6) (A6) (A6) (A6) (A6	ne required; ne) nriverine)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I	t (B11) st (B12) overtebrates (B' Sulfide Odor (I Rhizospheres a	C1) along Living R	Secon V S C C C oots (C3) D	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Gediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation (Water Mark Sediment D Drift Depos	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A9) (A9) (A9) (A9) (A9) (A9) (A9) (A9	ne required; ne) nriverine)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I	t (B11) st (B12) evertebrates (B ² Sulfide Odor (General Research Rhizospheres are of Reduced Iro	C1) along Living R on (C4)	Secon V S C C cots (C3) C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Orayfish Burrows (C8)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation (Water Mark Sediment D Drift Depos Surface So	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) ss (B1) (Nonriverible posits (B2) (Nonriverible (B3) (Nonriveribl	ne required; ne) nriverine)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I	t (B11) st (B12) nvertebrates (B ² Sulfide Odor (General Reduced Iron Reduction in	C1) along Living R on (C4)	Secor V S D D D C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Gediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Gaturation Visible on Aerial Imagery (C8)
YDROLOGY Wetland Hydro Primary Indicato Surface Wa High Water ✓ Saturation Water Mark Sediment D Drift Depos Surface So Inundation	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (S (B1) (Nonriverial (B2) (Nonriverial (B3) (Nonriverial (ne required; ne) nriverine)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc	t (B11) st (B12) evertebrates (B2 Sulfide Odor (CR) Rhizospheres a of Reduced Iro on Reduction in k Surface (C7)	C1) along Living R on (C4) n Tilled Soils (Secon V S C S C C C C C C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair	Plogy Indicators: ors (minimum of oater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A8) (A8) (A9) (A9) (A9) (A9) (A9) (A9) (A9) (A9	ne required; ne) nriverine)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc	t (B11) st (B12) nvertebrates (B ² Sulfide Odor (General Reduced Iron Reduction in	C1) along Living R on (C4) n Tilled Soils (Secon V S C S C C C C C C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Gediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Gaturation Visible on Aerial Imagery (C8)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation of Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair	logy Indicators: ors (minimum of oater (A1) Table (A2) (A3) (A3) (A3) (A3) (A3) (A3) (A4) (A4) (A5) (A5) (A6) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck	t (B11) st (B12) evertebrates (B2 Sulfide Odor (CR) Rhizospheres a of Reduced Iro on Reduction in ck Surface (C7) plain in Remark	C1) along Living R on (C4) Tilled Soils (Secon V S C S C C C C C C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3)
YDROLOGY Wetland Hydro Primary Indicato Surface Wa High Water ✓ Saturation Water Mark Sediment D Drift Depos Surface So Inundation	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) Opposits (B2) (Nonriverial (A2) (Nonriverial (A3) (No	ne required; ne) nriverine) rine) magery (B7)	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	it (B11) ist (B12) invertebrates (B2 Sulfide Odor (Ganisospheres and Ganisospheres and Ganisospheres and Ganisospheres and Ganisospheres (C7) plain in Remarkanches):	C1) Along Living R on (C4) Tilled Soils (Secon V S C S C C C C C C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation of Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair	Ilogy Indicators: ors (minimum of orater (A1) Table (A2) (A3) (S (B1) (Nonriverial Deposits (B2) (Nonriverial Cracks (B6) Visible on Aerial Inded Leaves (B9) ions: Present? Y	ne required; ne) nriverine) rine) magery (B7) es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres a of Reduced Iro on Reduction in k Surface (C7) plain in Remark nches):	C1) Along Living R on (C4) Tilled Soils (Secon V S C S C C C C C C C C C C	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capilla	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capilla	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) (AC-Neutral Test (D5)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation of Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capillat Describe Recor	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) (AC-Neutral Test (D5)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water ✓ Saturation Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capilla	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) (AC-Neutral Test (D5)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation of Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capillat Describe Recor	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) (AC-Neutral Test (D5)
YDROLOGY Wetland Hydro Primary Indicate Surface Wa High Water Saturation of Water Mark Sediment D Drift Depos Surface So Inundation Water-Stair Field Observat Surface Water F Water Table Pre Saturation Pres (includes capillat Describe Recor	ology Indicators: ors (minimum of olater (A1) Table (A2) (A3) (A3) (A5) (A5) (A6) (A6) (A6) (A7) (A7) (A7) (A7) (A7) (A7) (A7) (A7	ne required; ne) nriverine) rine) magery (B7) es No es No	check all that app Salt Crust Biotic Cru Aquatic In Hydrogen Oxidized I Presence Recent Irc Thin Muck Other (Ex	t (B11) st (B12) nvertebrates (B2 Sulfide Odor (Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres and Ganizospheres (C7) plain in Remarkanches): anches): anches):	C1) Along Living R on (C4) Tilled Soils (ks) Wa	Secor V S S S S S S S S S	ndary Indicators (2 or more required) Vater Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine) Orift Deposits (B3) (Riverine) Orainage Patterns (B10) Ory-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C8) Shallow Aquitard (D3) (AC-Neutral Test (D5)

Project/Site: Kittitas County Waste Transfer Station	City/County: Ellensbu	rg/Kittitas	Sampling Date:10/26/2016
Applicant/Owner: Kittitas Solid Waste		State: WA	Sampling Point: PW4 SP1
Investigator(s): P. O'Neill	Section, Township, Rai	nge: <u>T18N R18E S28</u>	
Landform (hillslope, terrace, etc.): Flat	Local relief (concave, o	convex, none): none	Slope (%):1
Subregion (LRR): LRR B Lat: 4	47.0177132276	Long: -120.58744940	9 Datum:
Soil Map Unit Name: Woldale clay loam, 0 to 2 percent slope:			
Are climatic / hydrologic conditions on the site typical for this time of	,		
Are Vegetation, Soil, or Hydrology significar			resent? Yes <u>√</u> No
Are Vegetation, Soil, or Hydrology naturally		eeded, explain any answer	
SUMMARY OF FINDINGS – Attach site map showi			
Hydrophytic Vegetation Present? Yes No _ ✓ Hydric Soil Present? Yes No _ ✓	is the Campica		,
Wetland Hydrology Present? Yes ✓ No		nd? Yes	No <u>√</u>
Remarks:			
VEGETATION – Use scientific names of plants.			
<u> </u>	sta. Dominant Indiastor	Daminanaa Taat wark	
	ute Dominant Indicator ver Species? Status	Dominance Test works Number of Dominant Sp	
1			or FAC:1 (A)
2		Total Number of Domina	ant
3		Species Across All Strat	
4		Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 15)	= Total Cover	That Are OBL, FACW, o	or FAC:50
1		Prevalence Index work	sheet:
2.		Total % Cover of:	Multiply by:
3		OBL species	x 1 =
4			x 2 =
5			x 3 = <u>150</u>
Herb Stratum (Plot size: 5)	= Total Cover		x 4 = <u>80</u>
1. Festuca idahoensis 20	X FACU	Column Totals:	x 5 = (A) 230 (B)
	X FAC	Column Totals	(A) <u>250</u> (B)
3		Prevalence Index	= B/A = <u>3.2</u>
4		Hydrophytic Vegetatio	
5		Dominance Test is :	
6		Prevalence Index is	s ≤3.0° otations¹ (Provide supporting
7			or on a separate sheet)
8	= Total Cover	Problematic Hydrop	ohytic Vegetation ¹ (Explain)
Woody Vine Stratum (Plot size:)	= Total Cover		
1			and wetland hydrology must
2		be present, unless distu	——————————————————————————————————————
	= Total Cover	Hydrophytic Vegetation	
% Bare Ground in Herb Stratum	c Crust		s No <u>√</u>
Remarks:		1	

SOIL Sampling Point: PW4 SP1

Profile Desc	ription: (Describe	to the de	pth neede	ed to docun	nent the ii	ndicator o	or confirm	the absence	of indicators.)
Depth	Matrix (Section 1)	0/	0.1		x Features		1 2	Tantona	Describe
(inches)	Color (moist)	%	Color	(moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks
0-10	10YR 3/2	100				-	-		clayey silt loam
10-16	10YR 3/2	100						sandy, gr ±	sandy, gravelly silt loam
		_							
1									
	oncentration, D=De Indicators: (Appli						d Sand Gr		cation: PL=Pore Lining, M=Matrix. for Problematic Hydric Soils ³ :
Histosol		cable to al				;u.)			•
_	pipedon (A2)			Sandy Redo Stripped Ma	. ,				Muck (A9) (LRR C) Muck (A10) (LRR B)
Black Hi				Loamy Muc		(F1)			ed Vertic (F18)
	en Sulfide (A4)			Loamy Gley					arent Material (TF2)
Stratified	d Layers (A5) (LRR	C)		Depleted Ma				Other	(Explain in Remarks)
1 cm Mu	ıck (A9) (LRR D)		ا	Redox Dark	Surface (F6)			
	d Below Dark Surfa	ce (A11)		Depleted Da				2	
	ark Surface (A12)			Redox Depr		-8)			of hydrophytic vegetation and
	Mucky Mineral (S1) Bleyed Matrix (S4)			Vernal Pool	s (F9)				hydrology must be present, isturbed or problematic.
	Layer (if present):							dilicas d	istarbed of problematic.
Type:	, (,-								
	ches):							Hydric Soil	Present? Yes No ✓
Remarks:								,	
HYDROLO	_								
	drology Indicators								
	cators (minimum of	one require	ed; check a		•				ndary Indicators (2 or more required)
Surface	()			Salt Crust	` '				/ater Marks (B1) (Riverine)
	ater Table (A2)			Biotic Crus		(D40)			ediment Deposits (B2) (Riverine)
✓ Saturation	` '	rino\		Aquatic Inv					rift Deposits (B3) (Riverine)
	larks (B1) (Nonrive nt Deposits (B2) (N o			Hydrogen Oxidized R			Livina Poo		rainage Patterns (B10) ry-Season Water Table (C2)
	posits (B3) (Nonrive			Presence of		_	-		rayfish Burrows (C8)
	Soil Cracks (B6)	erric)		Recent Iro					aturation Visible on Aerial Imagery (C9)
	on Visible on Aerial	Imagery (F	37)	Thin Muck			2 00110 (00		hallow Aquitard (D3)
	tained Leaves (B9)		,	Other (Exp				·	AC-Neutral Test (D5)
Field Obser						,			. ,
Surface Water	er Present?	Yes	No <u></u> ✓	_ Depth (ind	ches):		_		
Water Table				Depth (inc			l l		
Saturation P	resent?	Yes ✓	No	_ Depth (ind	ches): 6		Wetla	and Hydrolog	y Present? Yes No
(includes cap	oillary fringe)							if available:	
Describe Ke	corded Data (strear	ıı gauge, m	ioriitoring \	weii, aeriai p	niolos, pre	evious ins	pections),	ıı avalladie:	
Remarks:									

Project/Site: Kittitas County Waste Transfer Station	City/	County: <u>El</u>	llensbur	g/Kittitas	Sa	ampling Date:	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State:	WA Sa	ampling Point:	PW5 SP1
Investigator(s): P. O'Neill	Sect	ion, Towns	ship, Ran	ge: <u>T18N R18E</u>	S28		
Landform (hillslope, terrace, etc.): Flat	Loca	al relief (co	oncave, c	onvex, none): <u>no</u>	one	Slo	pe (%):1
Subregion (LRR): LRR B	_at: <u>47.017</u>	6430626		Long: -120.58	9179537	Datu	m:
Soil Map Unit Name: Nanum ashy loam, 0 to 2 percent sl							
Are climatic / hydrologic conditions on the site typical for this tir		,					
Are Vegetation, Soil, or Hydrology sign				lormal Circumsta			/ No
Are Vegetation, Soil, or Hydrology natu				eded, explain any			
SUMMARY OF FINDINGS – Attach site map sh							atures, etc.
-				·	,	•	<u> </u>
Hydrophytic Vegetation Present? Yes No _ Hydric Soil Present? Yes No _			Sampled				
Wetland Hydrology Present? Yes ✓ No		within a	a Wetland	d? Ye	es	No <u>√</u>	-
Remarks:		1					
VEGETATION II : ('C')							
VEGETATION – Use scientific names of plants.							
	bsolute Do <u>Cover Sp</u>			Dominance Te			
1				Number of Dom That Are OBL, I			(A)
2.							(' ')
3.				Total Number o Species Across			(B)
4				Percent of Dom			
-	= T	otal Cover		That Are OBL, I			0 (A/B)
Sapling/Shrub Stratum (Plot size: 15			-	Prevalence Ind	lav warkel	noot:	
1				Total % Co			v hv
2			l l	OBL species			
4			l l	FACW species			
5.				FAC species			
_	= T			FACU species	40	x 4 =	160
Herb Stratum (Plot size: 5	40	., .	- 4 61 1	UPL species		x 5 =	
1. Festuca idahoensis			FACU_	Column Totals:	90	(A)	310 (B)
2. Poa pratensis				Prevalenc	e Index =	B/A =3	3.4
3				Hydrophytic V			
4				Dominance	_		
6			1	Prevalence			
7				Morphologi	cal Adapta	tions ¹ (Provide	
8.						on a separate	*
_	90 = T			Problemation	: Hydrophy	tic Vegetation	(Explain)
Woody Vine Stratum (Plot size:)				1 Indiantors of h	رطين ممنا م	al watland byd	rology mysot
1				¹ Indicators of hybe present, unle			
2				Hydrophytic			
	= T			Vegetation			,
% Bare Ground in Herb Stratum5	Biotic Crust			Present?	Yes _	No	✓
Remarks:							

SOIL Sampling Point: PW5 SP1

Profile Desc	ription: (Describe	to the depth	needed to docu	ment the i	ndicator	or confirm	the absence	e of indicators.)
Depth	Matrix			x Features		. 2		-
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type'	Loc ²	Texture	Remarks
0-18	10YR 3/2	100					clayey sil	clayey silt loam
	-							
¹Type: C=Co	oncentration, D=Dep	letion, RM=R	Reduced Matrix, C	S=Covered	d or Coate	d Sand Gr	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.
	ndicators: (Applic							s for Problematic Hydric Soils ³ :
Histosol			Sandy Red		,			Muck (A9) (LRR C)
	oipedon (A2)		Stripped Ma	. ,				Muck (A10) (LRR B)
Black Hi			Loamy Mud		l (F1)			ced Vertic (F18)
	n Sulfide (A4)		Loamy Gle	yed Matrix	(F2)		Red F	Parent Material (TF2)
	Layers (A5) (LRR (C)	Depleted M	, ,			Other	(Explain in Remarks)
	ck (A9) (LRR D)		Redox Darl	,	,			
	Below Dark Surfac	e (A11)	Depleted D				31 11 1	
	ark Surface (A12)		Redox Dep		-8)			of hydrophytic vegetation and
	lucky Mineral (S1) sleyed Matrix (S4)		Vernal Poo	IS (F9)				hydrology must be present, disturbed or problematic.
	_ayer (if present):						unicss (distarbed of problematic.
Type:	-uyo: (p. 000y.							
	ches):						Hydric Soi	I Present? Yes No✓_
Remarks:	Jiles)						Tiyunic 301	Triesent: res No
Remarks.								
HYDROLO	GY							
Wetland Hyd	drology Indicators:							
Primary Indic	ators (minimum of c	ne required;	check all that appl	y)			Seco	ndary Indicators (2 or more required)
Surface	Water (A1)		Salt Crust	(B11)			\	Vater Marks (B1) (Riverine)
High Wa	iter Table (A2)		Biotic Cru	st (B12)			8	Sediment Deposits (B2) (Riverine)
✓ Saturation	on (A3)		Aquatic In		s (B13)			Orift Deposits (B3) (Riverine)
Water M	arks (B1) (Nonriver	ine)	Hydrogen	Sulfide Od	dor (C1)		[Orainage Patterns (B10)
Sedimer	nt Deposits (B2) (No	nriverine)	Oxidized I	Rhizosphe	res along	Living Roo	ots (C3) [Dry-Season Water Table (C2)
Drift Dep	oosits (B3) (Nonrive	rine)	Presence	of Reduce	d Iron (C4	!)	(Crayfish Burrows (C8)
✓ Surface	Soil Cracks (B6)		Recent Iro	n Reduction	on in Tilled	d Soils (C6	s) s	Saturation Visible on Aerial Imagery (C9)
Inundation	on Visible on Aerial	Imagery (B7)	Thin Muck	Surface (C7)		8	Shallow Aquitard (D3)
Water-S	tained Leaves (B9)		Other (Ex	plain in Re	marks)		F	FAC-Neutral Test (D5)
Field Observ	vations:							
Surface Water	er Present? Y	'es No	o <u>√</u> Depth (in	ches):				
Water Table	Present? Y	'es No	o <u>√</u> Depth (in	ches):				
Saturation Pr			Depth (in				and Hydrolog	y Present? Yes √ No
(includes cap	oillary fringe)							
Describe Red	corded Data (stream	gauge, mon	itoring well, aerial	photos, pro	evious ins	pections),	if available:	
Remarks:								

Project/Site: Kittitas County Waste Transfer Station	(City/County	: Ellensbu	rg/Kittitas	_ Sampling Date: _	10/26/2016
Applicant/Owner: Kittitas Solid Waste				State: WA	_ Sampling Point:	PW6 SP1
Investigator(s): P. O'Neill	;	Section, To	wnship, Ra	nge: <u>T18N R18E S28</u>		
Landform (hillslope, terrace, etc.): Flat		Local relie	f (concave,	convex, none): none	Slo	pe (%):1
Subregion (LRR): LRR B	Lat: 47.0	01488774	5	Long: <u>-120.5894811</u>	.51 Datu	m:
Soil Map Unit Name: Cleman very fine sandy loam, 0 to				_		
Are climatic / hydrologic conditions on the site typical for this			,			
Are Vegetation, Soil, or Hydrology sig				'Normal Circumstances"		/ No
Are Vegetation, Soil, or Hydrology na				eeded, explain any answ		
SUMMARY OF FINDINGS – Attach site map s						atures, etc.
Hydrophytic Vegetation Present? Yes ✓ No				· · · · · · · · · · · · · · · · · · ·	<u> </u>	<u> </u>
Hydric Soil Present? Yes No			e Sampled		/ Na	
Wetland Hydrology Present? Yes ✓ No		with	in a Wetlar	nd? Yes <u>v</u>	/ No	-
Remarks:						
VEGETATION – Use scientific names of plants	•					
		Dominant	Indicator	Dominance Test wor	kshoot:	
		Species?		Number of Dominant S		
1				That Are OBL, FACW,		(A)
2				Total Number of Domi	nant	
3				Species Across All Str	ata: <u>3</u>	(B)
4				Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: 15)		= Total Co	over	That Are OBL, FACW,	, or FAC: <u>6</u>	7 (A/B)
1				Prevalence Index wo	rksheet:	
2				Total % Cover of:	Multipl	y by:
3				OBL species	x 1 =	
4			-	FACW species		
5				FAC species		
Herb Stratum (Plot size: 5		= Total Co	over	FACU species		
1. Festuca idahoensis	40	Х	FACU	UPL species Column Totals:		
2. Agrostis stolonifera		Х	FACW	Column Totals.	(^)	(D)
3. Rumex sallicifolia	20	X	FACW		x = B/A =	
4				Hydrophytic Vegetat		
5				✓ Dominance Test is		
6				Prevalence Index		
7					aptations ¹ (Provide ks or on a separate	
8				Problematic Hydro	ophytic Vegetation ¹	(Explain)
Woody Vine Stratum (Plot size:)	00	= Total Co	over			
1			-	¹ Indicators of hydric so		
2				be present, unless dis	turbed or problema	tic.
		= Total Co		Hydrophytic		
% Bare Ground in Herb Stratum 20 % Cover of	of Biotic Cr	ust		Vegetation Present? Yes	es <u>√</u> No	
Remarks:				1		

SOIL Sampling Point: PW6 SP1

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

Depth	Matrix			c Features	3			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-16	10YR 3/2	100					sandy sil	sandy silt loam
	-							
1- 0.0							. 2.	
			Reduced Matrix, CS			d Sand Gr		cation: PL=Pore Lining, M=Matrix.
-		cable to all L	RRs, unless other		ea.)			for Problematic Hydric Soils ³ :
Histosol			Sandy Redo					Muck (A9) (LRR C)
	pipedon (A2)		Stripped Ma					Muck (A10) (LRR B)
	istic (A3)		Loamy Mucl					ed Vertic (F18)
	en Sulfide (A4)		Loamy Gley		(F2)			arent Material (TF2)
	d Layers (A5) (LRR	C)	Depleted Ma				Other	(Explain in Remarks)
	uck (A9) (LRR D)		Redox Dark	,	,			
-	d Below Dark Surfa	ce (A11)	Depleted Da		. ,		3	
	ark Surface (A12)		Redox Depr		-8)			of hydrophytic vegetation and
	Mucky Mineral (S1)		Vernal Pools	s (F9)				hydrology must be present,
	Gleyed Matrix (S4)						unless d	isturbed or problematic.
	Layer (if present):							
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No _✓
Remarks:							•	
HYDROLO	GY							
Wetland Hy	drology Indicators):						
Primary India	cators (minimum of	one required:	check all that apply	()			Secor	ndary Indicators (2 or more required)
	Water (A1)		Salt Crust	•				Vater Marks (B1) (Riverine)
	ater Table (A2)		Biotic Crus					ediment Deposits (B2) (Riverine)
	` '			` ,	~ (D40)			
✓ Saturation			Aquatic Inv					rift Deposits (B3) (Riverine)
	Marks (B1) (Nonrive		Hydrogen S		, ,			rainage Patterns (B10)
	nt Deposits (B2) (Ne				_	-		ry-Season Water Table (C2)
Drift De	posits (B3) (Nonriv	erine)	Presence of	of Reduce	d Iron (C4	1)		rayfish Burrows (C8)
Surface	Soil Cracks (B6)		Recent Iron	n Reduction	on in Tilled	d Soils (C6	S) S	aturation Visible on Aerial Imagery (C9)
Inundati	ion Visible on Aerial	Imagery (B7)	Thin Muck	Surface (C7)		S	hallow Aquitard (D3)
Water-S	Stained Leaves (B9)		Other (Exp	lain in Re	marks)		F	AC-Neutral Test (D5)
Field Obser	vations:							
Surface Wat	er Present?	Yes N	o <u>√</u> Depth (inc	hes):		_		
Water Table	Present?	Yes N	o <u>√</u> Depth (inc	hes):				
Saturation P			o Depth (inc				and Hydrolog	y Present? Yes ✓ No
	pillary fringe)	163 <u> </u>	o Depti (inc	, ies). <u>10</u>		_ ****	ana myarolog	y resent: res No
		m gauge, mor	nitoring well, aerial p	hotos, pre	evious ins	pections),	if available:	
Remarks:								

Project/Site: Kittitas County Waste Transfer Station		Ci	ty/County:	Ellensburg/k	Cittitas	Sampling Date	e: <u>5/7/2019</u>
Applicant/Owner: Kittitas Solid Waste			_	Stat	te: WA	- Sampling Poir	nt: PW7sp1
Investigator(s): Jen Bader, Kevin Haydon		Se	ection, Towr	nship, Range	e: S28 T18N R18	E	
Landform (hillslope, terrace, etc.): Flat		Lo	cal relief (c	oncave, con	vex, none): none	,	Slope (%): 1
Subregion (LRR): LRR B	Lat: 47	 7.015311	•		120.590875		NAD83
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 p	ercent slope	es		_		ication: Upland	
Are climatic / hydrologic conditions on the site typical			? () Ye	es ON		olain in Remarks	
Are Vegetation , Soil , or Hydrology	significant	-	_	_	Normal Circumstan		<u></u>
Are Vegetation , Soil , or Hydrology	naturally p	-			eded, explain any a		
SUMMARY OF FINDINGS – Attach site n							•
			<u> </u>		Triono, transce	,, importa	
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	O No		Is the	Sampled A	Area		
Wetland Hydrology Present? Yes	● No		withi	n a Wetland	1?	O Yes	● No
Remarks:							
Data Plot is east of the access road in the center of	a patch of r	ushes a	nd sedges t	that is appro	ximately 100 feet	east of ditch D1	. Water is less than 1
inch deep within ditch D1.							
VECETATION Line enjoyifie names of	nlanta						
VEGETATION – Use scientific names of	piants.				D	4 l 1 4-	
Trace Otractions (Dictation 00 ft	Absolute	Dom.	Relative	Indicator	Dominance Tes		
Tree Stratum (Plot size: 30 ft)	% Cover	Sp.?	% Cover	Status	Number of Domi That Are OBL, F		1 (A)
1					,	•	1(A)
					Total Number of Species Across		3 (B)
3. 4.					Percent of Domi		(_)
		= Total	Cover		That Are OBL, F	•	33.3% (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft)							
1					Prevalence Inde	ex worksheet:	
2					Total % Cov		Multiply by:
3.					OBL species		1 = 0
5.					FACW species		2 = <u>100</u> 3 = 0
J		= Total	Cover		FAC species FACU species		4 = 104
Herb Stratum (Plot size: 5 ft)		Total	0010.		UPL species		5 = 125
1. Juncus balticus	50	Υ	49.5	FACW	Column Totals:	101 (A	
2. Carex filifolia	25	Υ	24.8	UPL	Danielana	a la dess = D/A =	2.257
3. Phleum pratense	25	Υ	24.8	FACU		e Index = B/A =	
4. Taraxacum officinale	1	N	1.0	FACU	Hydrophytic Ve	_	itors:
5						Test is >50%	
6.						Index is ≤3.0¹	(D.)
7. 8.						ai Adaptations arks or on a sep	(Provide supporting parate sheet)
o	101	= Total	Cover		_	•	egetation¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft)	101	- Total	Oover				tland hydrology must
1					be present, unles		, ,,
2.							
		= Total	Cover		Hydrophytic		
					Vegetation Present?	O Yes	No
% Bare Ground in Herb Stratum0 %	Cover of Bi	otic Cru	st 0		7 10061111		
Remarks:							
Vegetation adjacent to patch of rushes is primarily I	Phleum prat	ense.					

SOIL Sampling Point: PW7sp1

Dopptin (Inches) Color (moist) % Color (moist) % Texture Remarks	Profile Desc	ription: (De	escribe to	the depth	needed to				or confi	rm the abso	ence of i	ndicators.)		<u> </u>
0-10 10YR 3/2 100 Silty Clay Loam Faint Mottles Type: C=Concentration. D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix, Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histic Epipedon (A2) Stroped Matrix (S6) Loamy Macky Mineral (F1) Reduced Matrix (S6) Loamy Macky Mineral (F1) Reduced Matrix (S6) Reduced Matrix (S6) Loamy Macky Mineral (F1) Reduced Matrix (S6) Loamy Macky Mineral (F1) Reduced Matrix (S6) Reduced Mat	•	Color (n			Color (m				1 002	Tout			Domorke	
10-18 10/R 3/2 99 10/R 3/6 1 C M Silty Clay Loam Faint Mottles Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Matrix, CS=Covered or Coated Sand Grains. Type: C=Concentration, D=Depletion Reduced Reduced Reduced Type: C=Coated Redu					Color (II	ioist)	70	Type	LOC-			-	Remarks	•
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Historic (AD)					40V/D	0.10						Esint Mate	1	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic	10-18	10YR	3/2	99	10YR	3/6	1	<u> </u>	M	Silty Clay	Loam	Faint Mott	iles	
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														 -
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) 1 cm Muck (A9) (LRR C) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyd Matrix (F2) Reduced Vertic (F18) Reduced Vertic														
Histosol (A1)									d Sand (Grains.				
Black Histic (A3)			(Applicat	ole to all LR	_ `			ed.)			_		-	ric Soils³:
Black Histic (A3)				L	= -						=			
Hydrogen Sulfilde (A4)				L				1)			=			
Stratified Layers (A5) (LRR C)		. ,	4)	F							=			
Depleted Below Dark Surface (A11)		-			= -	_		,			=			
Thick Dark Surface (A12)			-		=		. ,							
Sandy Mucky Mineral (S1)	_			(A11) L	= '		•	7)						
Sandy Gleyed Matrix (S4) disturbed or problematic.				L	=		. ,							
Restrictive Layer (if present): Type: Depth (inches): Depth (inches): Semarks: Soil is relatively dry. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Surface Water (A1) High Water Table (A2) Surface Water (A1) Saturation (A3) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Sediment Deposits (B2) (Nonriverine) Surface Soil Cracks (B6)	_	-		_	_ vernari	0013 (1 7	,							nt, uniess
Type:	Restrictive I	_ayer (if pre	esent):									-		
Remarks: Soil is relatively dry. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Sulface Water (A1) Sulface Water (A1) Salt Crust (B11) High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) (Nonriverine) Secondary Indicators (2 or more required) Water Marks (B1) (Riverine) Drift Deposits (B3) (Riverine) Presence of Reduced Iron (C4) Sediment Deposits (B2) (Riverine) Drift Deposits (B3) (Nonriverine) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Mater -Stained Leaves (B9) Drift Deposits (B3) Water -Stained Leaves (B9) Dry-Season Water Table (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No			•											
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Saturation Deposits (B2) (Riverine) Saturation Deposits (B3) (Nonriverine) Surface Water (B1) (Nonriverine) Saturation Deposits (B3) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Sediment Deposits (B3) (Riverine) Drainage Patterns (B10)	· · · · —	ches):								Hydri	ic Soil Pr	esent?	O Yes	No
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one required: check all that apply) Surface Water (A1) Sult Crust (B11) Sult Crust (B12) Sediment Deposits (B2) (Riverine) Sediment Deposits (B2) (Riverine) Mater Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Drift Deposits (B2) (Riverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Water-Stained Leaves (B9) Other (Explain in Remarks) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No Wetland Hydrology Present? Yes No	Remarks:													
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Inundation Visible on Aerial Imagery (B7) Thick Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): W	Soil is relativ	ely dry.												
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Inundation Visible on Aerial Imagery (B7) Thick Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): W														
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Inundation Visible on Aerial Imagery (B7) Thick Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): W														
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Secondary Indicators (2 or more required) Surface Water (A1) Salt Crust (B11) Water Marks (B1) (Riverine) High Water Table (A2) Biotic Crust (B12) Sediment Deposits (B2) (Riverine) Saturation (A3) Aquatic Invertebrates (B13) Drift Deposits (B3) (Riverine) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Sediment Deposits (B2) (Nonriverine) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Drift Deposits (B3) (Nonriverine) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) Inundation Visible on Aerial Imagery (B7) Thick Muck Surface (C7) Shallow Aquitard (D3) Water-Stained Leaves (B9) Other (Explain in Remarks) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches):	HYDROLO	GY												
Primary Indicators (minimum of one required: check all that apply) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) (Riverine) Saturation (A3) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Drift Deposits (B3) (Riverine) Drift Deposits (B3) (Riverine) Drainage Patterns (B10) Drainage P			icators:											
Surface Water (A1) High Water Table (A2) Biotic Crust (B12) Saturation (A3) Aquatic Invertebrates (B13) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B2) (Nonriverine) Drainage Patterns (B10)	_			ne required:	chack all t	hat annl	v)				Secondar	ry Indicators	: (2 or more	required)
High Water Table (A2) Saturation (A3) Water Marks (B1) (Nonriverine) Hydrogen Sulfide Odor (C1) Sediment Deposits (B3) (Riverine) Drainage Patterns (B10) Dry-Season Water Table (C2) Drainage Patterns (B10) Dry-Season Water Table (C2)			num or or	ie requireu,]		-				_	-		equireu)
Water Marks (B1) (Nonriverine)	=		2)		Bio	tic Crust	(B12)				=			rine)
Sediment Deposits (B2) (Nonriverine) □ Oxidized Rhizospheres along Living Roots (C3) □ Drift Deposits (B3) (Nonriverine) □ Presence of Reduced Iron (C4) □ Surface Soil Cracks (B6) □ Recent Iron Reduction in Tilled Soils (C6) □ Inundation Visible on Aerial Imagery (B7) □ Water-Stained Leaves (B9) □ Other (Explain in Remarks) □ Presence of Reduced Iron (C4) □ Crayfish Burrows (C8) □ Saturation Visible on Aerial Imagery (C9) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Stauration Present? □ Yes □ No □ Depth (inches): □ Depth (inches): □ Saturation Present? □ Yes □ No □ Depth (inches): □ Wetland Hydrology Present? □ Yes □ No □ No □ No □ No □ No □ Depth (inches): □ No					_								, , ,	
Drift Deposits (B3) (Nonriverine) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C6) Thick Muck Surface (C7) Shallow Aquitard (D3) FAC-Neutral Test (D5) Field Observations: Surface Water Present? Yes No Depth (inches): Saturation Present? Yes No Solution Prese	_					_			toda e Da	-+- (02)	=	_		
Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Field Observations: Surface Water Present? Yes No Depth (inches): Saturation Visible on Aerial Imagery (C9) Shallow Aquitard (D3) FAC-Neutral Test (D5) Wetland Hydrology Present? Yes No (includes capillary fringe) Wetland Hydrology Present? Yes No	_				=			.,	. ,	ots (C3)	=		, ,	
Inundation Visible on Aerial Imagery (B7)				c)	=					26)				nagery (C9)
Field Observations: Surface Water Present?	_			agery (B7)	=					/				
Surface Water Present?	Water-Sta	ained Leave	s (B9)		Oth	ner (Expl	ain in Re	marks)			FAC-I	Neutral Test	(D5)	
Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Wetland Hydrology Present? Yes No	Field Obser	vations:												
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No No (includes capillary fringe)	Surface Wat	er Present?	O Yes	s 🔘 No	Dep	th (inche	es):							
(includes capillary fringe)	Water Table	Present?	=			th (inche	es):						_	_
				s 🔘 No	Dep	th (inche	es):		v	Vetland Hyd	drology P	resent?	O Yes	No
				gauge moni	oring well	aerial n	photos p	revious ins	spections	s) if availab	le·			
			, ;	J J-,e.		, P	ع		,	,,				
Remarks: Irrigated field; however, this section of the field is relatively dry compared to the Northwest corner near data plot DP-4.		l howover	thic coatio	n of the field	ie rolative	alv day or	mnarad	to the Ne	rthwoot o	orner noor :	data nlot l	DP_4		
ingated neid, nowever, this section of the held is relatively dry compared to the Northwest come! Hear data plot DF-4.	migated lield	i, nowever,	una secuo	ii oi lile lielo	is relative	ay ury cc	nipared	io iile Nol	unwest C	omernear (uata piot i	∪ Г ~4 .		

Project/Site: Kittitas County Waste Transfer Station		Ci	ty/County: _I	Ellensburg/k	(ittitas :	Sampling Date	e: <u>5/7/2019</u>
Applicant/Owner: Kittitas Solid Waste			_			Sampling Poir	nt: PW8sp1
Investigator(s): Jen Bader, Kevin Haydon		Se	ection, Towr	nship, Range	e: S28 T18N R18E		
Landform (hillslope, terrace, etc.): Relatively flat		Lo	cal relief (c	oncave, con	vex, none): conca	/e	Slope (%): 1
Subregion (LRR): LRR B	Lat: 47	.014551	l	Long: -	120.590449	Datum:	NAD83
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 po	ercent slope	s			NWI Classifica		
Are climatic / hydrologic conditions on the site typical			? () Ye	es ON		in in Remarks	
Are Vegetation , Soil , or Hydrology	significantl	-	_	_	Normal Circumstance		<u></u>
Are Vegetation , Soil , or Hydrology	naturally p	-			eded, explain any an		
SUMMARY OF FINDINGS – Attach site n				,			,
			,pg I		ttionis, transcot	- Importa	Troutures, etc.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	NoNo		Is the	Sampled A	Area	_	
Wetland Hydrology Present?	No		withi	n a Wetland	l? () Yes	No No
Remarks:							
Data Plot is south of DP-1 in the center of a patch o	f rushes and	d sedges	s that is app	oroximately 1	125 feet east of ditch	n D1. Water is	less than 1 inch deep
within ditch D1.							
VECETATION Line ecientific names of	nlanta						
VEGETATION – Use scientific names of	piants.				D		
T 01 / (D1 /) 00 ft	Absolute	Dom.	Relative	Indicator	Dominance Test		
Tree Stratum (Plot size: 30 ft)	% Cover	Sp.?	% Cover	Status	Number of Domina That Are OBL, FA	•	1 (A)
1.							1 (A)
2					Total Number of D Species Across Al		2 (B)
3. 4.					Percent of Domina		(3)
		= Total	Cover		That Are OBL, FA		50.0% (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft)							` `
1					Prevalence Index	worksheet:	
2					Total % Cove		Multiply by:
3					OBL species		1 = 0
4					FACW species		2 = 82
5		= Total	Cover		FAC species FACU species		3 = <u>15</u> 4 = 4
Herb Stratum (Plot size: 5 ft)		- Total	Covei		UPL species		5 = 215
1. Juncus balticus	40	Υ	44.4	FACW	Column Totals:	90 (A	
2. Carex filifolia	40	Y	44.4	UPL	_		
3. Poa pratensis	5	N	5.6	FAC	Prevalence I	Index = B/A =	3.511
4. Bromus tectorum	3	N	3.3	UPL	Hydrophytic Vege		itors:
5. Barbarea orthoceras	1	<u>N</u>	1.1	FACW	Dominance Te		
6. Taraxacum officinale	1	N	1.1	FACU	Prevalence Inc		
7					└─ Morphological data in Remar	•	(Provide supporting
8	90	= Total	Cover				getation¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft)	90	- TOTAL	Covei				land hydrology must
1					be present, unless		
2.					-		
		= Total	Cover		Hydrophytic	_	
					Vegetation Present?	O Yes	No
% Bare Ground in Herb Stratum0 %	Cover of Bi	otic Cru	st <u>0</u>		i i Godiil!		
Remarks:							
The remainder of ground cover is litter.							

SOIL Sampling Point: PW8sp1 Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.) Redox Features (inches) Color (moist) % Color (moist) Type¹ Loc² Texture 10YR 2/2 100 Sandy silt clay 0-6 2/1 100 6-18 10YR Sandy silt clay Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix. Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils³: Sandy Redox (S5) Histosol (A1) 1 cm Muck (A9) (LRR C) Histic Epipedon (A2) Stripped Matrix (S6) 2 cm Muck (A10) (LRR B) Black Histic (A3) Loamy Mucky Mineral (F1) Reduced Vertic (F18) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Red Parent Material (TF2) Stratified Layers (A5) (LRR C) Depleted Matrix (F3) Other (Explain in Remarks) 1 cm Muck (A9) (LRR D) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) ³Indicators of hydrophytic vegetation and Sandy Mucky Mineral (S1) Vernal Pools (F9) wetland hydrology must be present, unless Sandy Gleyed Matrix (S4) disturbed or problematic. Restrictive Layer (if present): Type: No

LIVEROL OOV

Remarks:

Depth (inches):

Soil is damp below 8 inches.

HIDROLOGI		
Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; chec	k all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Salt Crust (B11)	Water Marks (B1) (Riverine)
High Water Table (A2)	Biotic Crust (B12)	Sediment Deposits (B2) (Riverine)
Saturation (A3)	Aquatic Invertebrates (B13)	Drift Deposits (B3) (Riverine)
Water Marks (B1) (Nonriverine)	Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
Sediment Deposits (B2) (Nonriverine)	Oxidized Rhizospheres along Living	Roots (C3) Dry-Season Water Table (C2)
Drift Deposits (B3) (Nonriverine)	Presence of Reduced Iron (C4)	Crayfish Burrows (C8)
Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils	ls (C6) Saturation Visible on Aerial Imagery (C9)
Inundation Visible on Aerial Imagery (B7)	Thick Muck Surface (C7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes No	Depth (inches):	
Water Table Present? Yes No	Depth (inches):	
Saturation Present? Yes No (includes capillary fringe)	Depth (inches):	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring	g well, aerial photos, previous inspecti	tions), if available:
Remarks:		

() Yes

Hydric Soil Present?

Project/Site: Kittitas County Waste Transfer Station		Cit	y/County: E	Ellensburg/K	ittitas Sampling Date: 5/7/2019
Applicant/Owner: Kittitas Solid Waste			_		e: WA Sampling Point: PW9sp1
Investigator(s): Jen Bader, Kevin Haydon		Se	ction, Town	ship, Range	: S28 T18N R18E
Landform (hillslope, terrace, etc.): Depression		Lo	cal relief (co	oncave, conv	/ex, none): Concave Slope (%): 1
Subregion (LRR): LRR B	Lat: 47.0	 014295		Long: -1	20.589008 Datum: NAD83
Soil Map Unit Name: Nack-Opnish Complex, 0 to 2 percei					NWI Classification: Upland
Are climatic / hydrologic conditions on the site typical for t	this time	of year	? () Ye	s O No	
	nificantly	-		Are "N	ormal Circumstances" present? Yes No
	turally pro				ded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map				oint loca	tions, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No		1		, , , , , , , , , , , , , , , , , , ,
Hydric Soil Present? Yes	● No			Sampled A	
Wetland Hydrology Present? Yes	No No		withir	n a Wetland	? Yes • No
Remarks:			· ·		
Data Plot is east of DP-2 in the center of a patch of rush	nes and s	edges ı	near the so	uthern bound	dary of the property.
VEGETATION – Use scientific names of pla	nts.				
Ab	solute	Dom.	Relative	Indicator	Dominance Test worksheet:
			% Cover	Status	Number of Dominant Species
1.					That Are OBL, FACW, or FAC: 1 (A)
2					Total Number of Dominant
3.					Species Across All Strata: 3 (B)
4		T-4-1	2		Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft)		Total (Jover		That Are OBL, FACW, or FAC: 33.3% (A/B)
1					Prevalence Index worksheet:
2.					Total % Cover of: Multiply by:
3.					OBL species 0 x 1 = 0
4					FACW species 25 x 2 = 50
5					FAC species 0 x 3 = 0
Llorb Stratum (Diet size: 5 ft	=	: Total (Cover		FACU species 25 x 4 = 100 UPL species 25 x 5 = 125
Herb Stratum (Plot size: 5 ft) 1. Phleum pratense	25	Υ	33.3	FACU	UPL species <u>25</u> x 5 = <u>125</u> Column Totals: 75 (A) 275 (B)
	25	Y	33.3	FACW	
	25	Υ	33.3	UPL	Prevalence Index = B/A = 3.667
4.					Hydrophytic Vegetation Indicators:
5					Dominance Test is >50%
6					Prevalence Index is ≤3.0¹
7					Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8	75 =	Total (Cover		Problematic Hydrophytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft)	<u>73</u> -	· IOtal (Jovei		¹Indicators of hydric soil and wetland hydrology must
1					be present, unless disturbed or problematic.
2.					
		Total (Cover		Hydrophytic
					Vegetation Yes No No Present?
% Bare Ground in Herb Stratum 1	er of Bio	tic Crus	st <u> </u>	_	
Remarks:					
Vegetation adjacent to patch of rushes is primarily Phleu	um pratei	nse wit	h patchy Ca	arex filifolia.	The remainding ground cover is all litter.

SOIL Sampling Point: PW9sp1

Profile Desc	cription: (De	escribe to	the depth	needed to do	cument the	indicator	or confi	rm the absence of i	ndicators.)
Depth		Matrix			Redox Featu			_	
(inches)	Color (n		<u></u> %	Color (moist) %	Type ¹	Loc²	Texture	Remarks
0-14	10YR	3/2	100					Silty clay loam	
14-18	10YR	2/1	99	10YR 3	/6 1	<u>C</u>	M	Silty clay loam	w/ some gravels
¹Type: C=Co	oncentration,	D=Deple	tion, RM=R	educed Matrix	CS=Covered	d or Coate	ed Sand 0	Grains. ² Lo	cation: PL=Pore Lining, M=Matrix.
				RRs, unless o					ors for Problematic Hydric Soils³:
Histosol			Į	Sandy Redo				=	Muck (A9) (LRR C)
	ipedon (A2)		l	Stripped Ma		1\		=	Muck (A10) (LRR B)
Black His	stic (A3) n Sulfide (A4	1)	l I		ky Mineral (F ed Matrix (F2			=	uced Vertic (F18) Parent Material (TF2)
= ' '	Layers (A5)		ĺ	Depleted M		- /			er (Explain in Remarks)
=	ck (A9) (LRF		Į	=	Surface (F6)				
_	Below Dark		(A11) [ark Surface (F	- 7)			
	irk Surface (. ucky Minera			Vernal Pool	ressions (F8) s (F9)				ors of hydrophytic vegetation and hydrology must be present, unless
= '	leyed Matrix	. ,	·		J (1 7)				d or problematic.
Restrictive	Layer (if pre	esent):							
Type:									
Depth (in	iches):							Hydric Soil P	resent? Yes No
Remarks:								!	
Soil is damp									
HYDROLO	GY								
Wetland Hy		icatore:							
_			ne required	check all that	annly)			Seconda	ary Indicators (2 or more required)
_	Water (A1)	num or o	ne required		ust (B11)				er Marks (B1) (Riverine)
	ter Table (A2	2)			Crust (B12)			=	ment Deposits (B2) (Riverine)
Saturatio			`		Invertebrate				Deposits (B3) (Riverine)
	arks (B1) (N t Deposits (E				jen Sulfide Od ed Rhizospher		ivina Por		nage Patterns (B10) Season Water Table (C2)
	osits (B3) (N	, ,		=	ce of Reduced			· · · = ·	fish Burrows (C8)
	Soil Cracks (I		,	=	Iron Reduction			:	ration Visible on Aerial Imagery (C9)
	on Visible on		nagery (B7)	=	Muck Surface	. ,		=	low Aquitard (D3)
	ained Leave	s (B9)		Other (Explain in Re	marks)		☐ FAC-	Neutral Test (D5)
Field Obser									
Surface Wat		×	_						
Water Table Saturation P		O Yes	Ξ				— I ,,	lational Undrology	Present? Yes No
(includes ca) Ye:	5 O N	O Depth (i	nches).		— "	etland Hydrology I	Present? Yes • No
			gauge, mor	itoring well, ae	rial photos, p	revious in:	spections	s), if available:	
Remarks:									

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kittitas County Waste Transfer Station	City/0	County: Ellensburg/Ki	ttitas Sampling	Date: 5/7/2019
Applicant/Owner: Kittitas Solid Waste				Point: PW10sp1
Investigator(s): Jen Bader, Kevin Haydon	Secti	on, Township, Range:	S28 T18N R18E	<u> </u>
Landform (hillslope, terrace, etc.): Depression			ex, none): none	Slope (%): 1
Subregion (LRR): LRR B			20.587454 Dat	
Soil Map Unit Name: Naneum ashy loam, 0 to 2 percei			NWI Classification: Upl	
Are climatic / hydrologic conditions on the site typical f		Yes No		
·_ · _ · _	significantly disturbed	0	ormal Circumstances" preser	<u>'</u>
	naturally problematic		ded, explain any answers in F	
SUMMARY OF FINDINGS – Attach site m		,		,
	· ·			rtant roataros, etc.
Hydrophytic Vegetation Present? () Yes Hydric Soil Present? () Yes	No No	Is the Sampled A	rea	
Wetland Hydrology Present?	No	within a Wetland	Yes	● No
Remarks:		<u> </u>		
Data plot is in northeast corner of irrigated field. Grou	and is uneven with lots	s of depressions from	cow hooves.	
VEGETATION – Use scientific names of p	nlante			
		1	Dominance Test workshee	nt:
	Absolute Dom. R % Cover Sp.? %	Relative Indicator Cover Status		
	70 Cover Op.: 70	Otalus Otalus	Number of Dominant Species That Are OBL, FACW, or FA	
1			Total Number of Dominant	(/,/
3.			Species Across All Strata:	1 (B)
4.			Percent of Dominant Specie	es
_	= Total Co	ver	That Are OBL, FACW, or FA	
Sapling/Shrub Stratum (Plot size: 15 ft)		L		
1.			Prevalence Index workshe	
2			Total % Cover of:	Multiply by:
3			OBL species 0 FACW species 0	$ \begin{array}{c} x 1 = \underline{\qquad 0} \\ x 2 = \underline{\qquad 0} \end{array} $
5.			FAC species 0	$x = \frac{0}{0}$
	= Total Co	ver	FACU species 100	x 4 = 400
Herb Stratum (Plot size: 5 ft)			UPL species 0	x 5 = 0
Phleum pratense	100 Y	100.0 FACU	Column Totals: 100	(A) 400 (B)
2.			Prevalence Index = B/	A = 4.000
3.			Hydrophytic Vegetation In	dicators:
4 <u>-</u> 5.			Dominance Test is >509	
6.			Prevalence Index is ≤3.0	
7.			Morphological Adaptatic	ons¹ (Provide supporting
8.			data in Remarks or on a	separate sheet)
_	100 = Total Co	ver	Problematic Hydrophytic	c Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft)			¹Indicators of hydric soil and	
1.			be present, unless disturbed	or problematic.
2			Hydrophytic	
-	= Total Co	ver	_	Yes No
% Bare Ground in Herb Stratum 0 % 0	Cover of Biotic Crust	0	Present?	Ü
Remarks:				
No change in vegetation species compared to surrou	ending area but Phlou	<i>m pratense</i> is verv sh	ort (less than 6 inches) and a	already flowering indicating
	nung area but <i>Fineu</i> i			, ,
it is stressed in this location. From a distance, this loc patch of short grass.			rex; however, closer inspect	ion indicated it was a solid

SOIL Sampling Point: PW10sp1

Profile Desc	ription: (Describe	to the depth nee			or confirm th	he absence of indicators.)	
Depth	Matrix			Features	1 2	T	
(inches)	Color (moist)	<u> </u>	olor (moist)	% Type¹	Loc ²	Texture Remarks	
0-18	10YR 2/1	100			Silt	Ity clay loam	
						<u> </u>	
-							
	ncentration, D=Depl				d Sand Grains		
	ndicators: (Applica	able to all LRRs,	unless otherwis	se noted.)		Indicators for Problematic Hydric Soil	S³:
Histosol (• •		andy Redox (S5)			1 cm Muck (A9) (LRR C)	
_	pedon (A2)	=	tripped Matrix (Se	•		2 cm Muck (A10) (LRR B)	
Black His	tic (A3) n Sulfide (A4)		pamy Mucky Mine pamy Gleyed Mati			Reduced Vertic (F18) Red Parent Material (TF2)	
= '	Layers (A5) (LRR C		epleted Matrix (F			Other (Explain in Remarks)	
	ck (A9) (LRR D)		edox Dark Surfac			Girler (Explain in Remarks)	
_	Below Dark Surface	=	epleted Dark Surf	, ,			
	rk Surface (A12)	R	edox Depressions	s (F8)		³ Indicators of hydrophytic vegetation and	
_	ucky Mineral (S1)	V	ernal Pools (F9)			wetland hydrology must be present, unle	ss
Sandy Gl	eyed Matrix (S4)					disturbed or problematic.	
Restrictive I	_ayer (if present):						
Type:			_				
Depth (in	ches):		_			Hydric Soil Present? Yes Yes	0
Remarks:							
Soil is damp.							
UVDDOLO	OV						
HYDROLO							1
_	drology Indicators:						
	cators (minimum of o	one required; che		4)		Secondary Indicators (2 or more required	<u>1)</u>
	Vater (A1) er Table (A2)	L	Salt Crust (B1) Biotic Crust (B			Water Marks (B1) (Riverine) Sediment Deposits (B2) (Riverine)	
Saturation		L [Aquatic Invert			Drift Deposits (B3) (Riverine)	
	arks (B1) (Nonriverin	e) [Hydrogen Sulf	, ,		Drainage Patterns (B10)	
	Deposits (B2) (Non	=	= -	ospheres along L	iving Roots (C		
	osits (B3) (Nonriveri		Presence of Re	educed Iron (C4))	Crayfish Burrows (C8)	
_	oil Cracks (B6)	[_	eduction in Tilled	d Soils (C6)	Saturation Visible on Aerial Imagery (C9)
=	n Visible on Aerial I	magery (B7)	Thick Muck Su			Shallow Aquitard (D3)	
Water-Sta	ained Leaves (B9)	L	Other (Explain	in Remarks)		FAC-Neutral Test (D5)	
Field Obser	vations:						
Surface Water	\sim	=	Depth (inches)				
Water Table	_	_	Depth (inches)				
Saturation Pr		es No	Depth (inches):	:	Wetlai	ind Hydrology Present? Yes Yes	ИO
(includes cap Describe Red	corded Data (stream	gauge, monitorir	ng well, aerial pho	otos, previous ins	spections), if a	available:	
	(<u> </u>	, _F	,,	, ,,,,,		
Remarks:				a makani desili. S		and also amplify the state of t	£ 41= =
The main irri	gation ditch for the f	ieid, D5, is directl	y north of this dat	a plot and full of	water. There	e are also small, dry side ditches east and west o	tne tne
politi.							

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Kittitas County Waste Transfer Station		Ci	ty/County: _I	Ellensburg/k	Kittitas Sampling Date: 5/7/2019
Applicant/Owner: Kittitas Solid Waste				Stat	te: WA Sampling Point: D12sp1
Investigator(s): Jen Bader, Kevin Haydon		Se	ection, Towr	nship, Range	e: S28 T18N R18E
Landform (hillslope, terrace, etc.): Ditch		Lo	ocal relief (c	oncave, con	vex, none): Concave Slope (%): 5
Subregion (LRR): LRR B	Lat: <u>4</u> 7	.014028	3	Long: -	120.587855 Datum: NAD83
Soil Map Unit Name: Nack-Opnish complex, 0 to 2 pe	ercent slope	s			NWI Classification: Upland
Are climatic / hydrologic conditions on the site typical	for this time	e of year	? • Ye	es ON	(If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology	significantl	y disturk	ped?	Are "N	Normal Circumstances" present? Yes No
Are Vegetation , Soil , or Hydrology	naturally p	roblema	tic?	(If nee	eded, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site n	nap show	ing sa	ampling p	point loca	ations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes Yes Yes	O No)		Sampled A	
Remarks: This data plot is along the offsite ditch approximatel were sections along it that include isolated riparian sections. VEGETATION – Use scientific names of	shrubs and			oundary. The	e ditch is primarly <i>Phalaris arundinacea;</i> however, there
	•	D	Dalation	la di catan	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dom. Sp.?	Relative % Cover	Indicator Status	Number of Dominant Species
1	70 0010.	<u> </u>	70 0010.		That Are OBL, FACW, or FAC: 3 (A)
2.					Total Number of Dominant
3.					Species Across All Strata: 4 (B)
4					Percent of Dominant Species
		= Total	Cover		That Are OBL, FACW, or FAC: 75.0% (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft)	E	v	60.5	EAC)A/	Prevalence Index worksheet:
Cornus alba Rosa nutkana	<u>5</u> 3	<u>Y</u>	62.5 37.5	FACU FACU	Total % Cover of: Multiply by:
3.		<u> </u>	07.0	17100	OBL species 0 x 1 = 0
4.					FACW species 80 x 2 = 160
5.					FAC species 25 x 3 = 75
	8	= Total	Cover		FACU species 3 x 4 = 12
Herb Stratum (Plot size: 5 ft)					UPL species 0 x 5 = 0
1. Phalaris arundinacea	<u>75</u> 25	<u>Y</u>	75.0	FACW	Column Totals:108 (A)247 (B)
2. Solanum dulcamara 3.			25.0	FAC	Prevalence Index = B/A = 2.287
					Hydrophytic Vegetation Indicators:
5.					✓ Dominance Test is >50%
6.					Prevalence Index is ≤3.0¹
7					Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
8	100	= Total	Cover		Problematic Hydrophytic Vegetation¹ (Explain)
Woody Vine Stratum (Plot size: 15 ft)					¹Indicators of hydric soil and wetland hydrology must
1					be present, unless disturbed or problematic.
2 % Bare Ground in Herb Stratum 0 %	Cover of Bi	= Total			Hydrophytic Vegetation Present? No
Remarks:					
Uplands to the south of this ditch are weedy.					

SOIL Sampling Point: D12sp1

	ription: (De		the depth n	eeded to document the in Redox Feature		firm the abser	nce of indicators.)		
Depth (inches)	Color (m	Matrix noist)	<u></u> %	Color (moist) %	Type¹ Loc²	_ Textu	re	Remarks	
0-18	10YR	2/2	100		.,,,,	Silty clay			
0-10	10111	ZIZ	100			Only clay			
									
						_			
						_			
						_			
¹Type: C=Cor	ncentration	D=Denlet	ion RM=Rec	luced Matrix, CS=Covered	or Coated Sand	 I Grains	2l ocation: PI =P	ore Lining, M=Matrix.	
				s, unless otherwise noted			ndicators for Proble		
Histosol ((1 1 1 1		Sandy Redox (S5)	,	Γ	1 cm Muck (A9) (I	-	-
=	pedon (A2)			Stripped Matrix (S6)		Ţ	2 cm Muck (A10)	·	
Black Hist				Loamy Mucky Mineral (F1)		Ţ	Reduced Vertic (F		
Hydrogen	Sulfide (A4	4)		Loamy Gleyed Matrix (F2)		Ī	Red Parent Mater	ial (TF2)	
Stratified	Layers (A5)	(LRR C)		Depleted Matrix (F3)			Other (Explain in	Remarks)	
=	ck (A9) (LRF	-		Redox Dark Surface (F6)					
_	Below Dark		A11) <u> </u>	Depleted Dark Surface (F7)				
=	k Surface (A			Redox Depressions (F8)			Indicators of hydroph		
= -	ucky Mineral eyed Matrix			Vernal Pools (F9)			vetland hydrology mu listurbed or problema		3
							ilsturbed or problema	auc.	
Restrictive L	ayer (if pre	sent):							
Type:								Yes No	
Depth (inc	ches):					Hydric	Soil Present?	O res O No	
Remarks:									
Saturated to	surface								
HYDROLO									
Wetland Hyd	irology Ind	icators:							
	•	num of on	<u>e required; c</u>	heck all that apply)		§	Secondary Indicators		
Surface W				Salt Crust (B11)		Ļ	Water Marks (B1)	· ·	
	er Table (A2	2)		Biotic Crust (B12)	(D4.0)	Ļ	Sediment Deposits		
✓ Saturation	n (A3) Irks (B1) (No	anri (arina)		Aquatic Invertebrates		F	☑ Drift Deposits (B3)✓ Drainage Patterns		
=	Deposits (B			Hydrogen Sulfide OdoOxidized Rhizospheres		oots (C2) [Dry-Season Water		
	osits (B3) (N			Presence of Reduced		0013 (C3) <u>[</u>	Crayfish Burrows		
	oil Cracks (E		'/	Recent Iron Reduction		(C6)	= '	on Aerial Imagery (C	(9)
	n Visible on		agery (B7)	Thick Muck Surface (C	.7)	Ì	Shallow Aquitard		,
Water-Sta	ained Leaves	s (B9)		Other (Explain in Rem	arks)		✓ FAC-Neutral Test	(D5)	
Field Observ	/ations:								
Surface Wate	er Present?	O Yes	No	Depth (inches):					
Water Table		Yes	=	Depth (inches):	5				
Saturation Pr		Yes	○ No	Depth (inches):		Wetland Hvdr	ology Present?	Yes No)
(includes cap									
		(atroom a	auga manita	oring well, aerial photos, pre	vious inspection	ns), if available	: :		
Describe Rec	corded Data	(stream g	auge, monic						
Describe Rec	corded Data	(stream g	auge, monit						
	corded Data	(stream g	auge, monic						
Remarks:				oximatly 2 feet south of the	data plot.				
Remarks:				oximatly 2 feet south of the	data plot.				
Remarks:				oximatly 2 feet south of the	data plot.				

Appendix D Wetland Rating Forms

RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WETTAN	Date of site visit: 1926/18
Rated by P. O'NEILL	_ Trained by Ecology? Yes No Date of training
HGM Class used for rating SLOPE	Wetland has multiple HGM classes?Y X_N
NOTE: Form is not complete without Source of base aerial photo/map _	the figures requested (figures can be combined).
OVERALL WETLAND CATEGORY _	1V (based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

	_Category I — Total score = 22-27
	_Category II — Total score = 19-21
	_Category III - Total score = 16-18
14	Category IV — Total score = 9-15

FUNCTION	Improving Hydrologic Habitat Water Quality		est Liber						
		7.15	Circle	the ap	prop	riate ro	itings	5	10 P1755 . 1925
Site Potential	Н	M	(I)	Н	M	1	Н	M (L)	Walled Lab
Landscape Potential	Н	M	L	Н	М	(1)	Н	M L	
Value	Н	M	L	(H)	М	L	Н	M (L)	TOTAL
Score Based on Ratings	111	5			5			4	14

2. Category based on SPECIAL CHARACTERISTICS of wetland

CHARACTERISTIC	CATEGORY Circle the appropriate category		
Vernal Pools	ш ш		
Alkali	I		
Wetland of High Conservation Value	I I		
Bog and Calcareous Fens	i i i i i i i i i i i i i i i i i i i		
Old Growth or Mature Forest – slow growing	in the section for the last of the section of		
Aspen Forest	an explication of the sensight of		
Old Growth or Mature Forest – fast growing	and the second s		
Floodplain forest	tier war is a second of the second order.		
None of the above			

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	The Contract
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 5.3	TATION
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	Self .
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 wetland is found (website)	D 3.3	THE TANK

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	1/4
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	4.4
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	1
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
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	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	less e
Plant cover of trees, shrubs, and herbaceous plants	L 1.2	4-1-1
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	160 15
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 wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	T. L.
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	ERLAN S
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	resign.
Boundary of area within 150 ft of the wetland (can be added to another figure)	S 2.1, S 5.1	PROTECTION .
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	ALEXAGE
Screen capture ofmap of ₹03(d) is €ed waters in basin (from Ecology website)	S 3.1, S 3.2	an Expellen
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	S 3.3	1

HGM Classification of Wetland in Eastern Washington

For questions 1-4, 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 1-4 apply, and go to Question 5.

1.	Does the entire unit meet both of the following criteria? The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)
1	NO – go to 2 YES – The wetland class is Lake Fringe (Lacustrine Fringe)
2.	Does the entire wetland unit meet all of the following criteria? The wetland is on a slope (slope can be very gradual), 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; The water leaves the wetland without being impounded.
	NO - go to 3 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 foodeep).
3.	Does the entire wetland unit meet all of the following criteria? The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river; The overbank flooding occurs at least once every 10 years.
	NO - go to 4 YES – The wetland class is Riverine NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.
4.	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.

5. 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 QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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.

NO - go to 5

YES - The wetland class is Depressional

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 wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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.

\$ 1.0. Does the site have the potential to improve water quality? \$ 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance) \$ 1.0. Does the site have the potential to improve water quality? \$ 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance) \$ 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance) \$ 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorganic (use NRCS definitions): Yes = 3 No = 0 \$ 1.3. Characteristics of the plants in the wetland that trap sediments and poliutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in. Dense, uncut, herbaceous plants > % of area Dense, u	SLOPE WETLANDS		Points
S 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft vertical drop in elevation for every 100 ft of horizontal distance)	Water Quality Functions - Indicators that the site functions to i	mprove water quality	score per
horizontal distance) Slope is Yan Less Slope is 7 Yan Less Slope is 2 Yan Less Slope i	S 1.0. Does the site have the potential to improve water quality?		
S 1.3. Characteristics of the plants in the wetland that trap sediments and pollutants: Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > % of area Dense, woody, plants > % of area Dense, uncut, herbaceous plants > % of area Does not meet any of the criteria above for plants Add the points in the boxes above 2 Record the rating on the first points in the latter of the site of the wetland in land uses that generate pollutants? Yes = 1 No = 0 5 2.0. Does the landscape have the potential to support the wetland in land uses that generate pollutants? Yes = 1 No = 0 5 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question 5 2.12 Other sources GENERAL ING Total for S 2 Add the points in the boxes above Add the points in the boxes above 2 Record the rating on the first points in the boxes above 3 3.0. Is the water quality improvement provided by the site valuable to society? 5 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)? Yes = 1 No = 0 5 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0 5 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer)	horizontal distance) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5%	points = 3 points = 2 points = 1	Q
Choose the points appropriate for the description that best fits the plants in the wetland. Dense means you have trouble seeing the soil surface (>75% cover), and uncut means not grazed or mowed and plants are higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area points = 6 Dense, uncut, herbaceous plants > % of area points = 3 Dense, woody, plants > % of area points = 1 Does not meet any of the criteria above for plants Total for \$1 Add the points in the boxes above Record the rating on the first part of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0 Total for \$2 Add the points in the boxes above Record the rating on the first part of the sources of pollutants coming into the wetland that are not listed in question \$2.1? Other sources FAELDG Yes = 1 No = 0 Total for \$2 Add the points in the boxes above Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If Score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If Score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If Score is: 1-2 M O = L Record the rating on the first part of Landscape Potential If Score is: 1-2 M O = L Record the rating of Landscape	S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorga	nic (use NRCS definitions): Yes = 3 No = 0	
Record the rating on the first policy in the street of the	Choose the points appropriate for the description that best fits the phave trouble seeing the soil surface (>75% cover), and uncut means higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ½ of area Dense, uncut, herbaceous plants > ½ of area Does not meet any of the criteria above for plants	polants in the wetland. Dense means you not grazed or mowed and plants are points = 6 points = 3 points = 2 points = 1 points = 0	0
\$ 2.0. Does the landscape have the potential to support the water quality function at the site? \$ 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetland in land uses that generate pollutants? Yes = 1 No = 0 \$ 2.2. Are there other sources of pollutants coming into the wetland that are not listed in question \$ 2.12 (Yes = 1 No = 0) Total for \$ 2 Add the points in the boxes above Atting of Landscape Potential If score is: 2 1-2 (M) 0 = L Record the rating on the first pollutants on the site valuable to society? \$ 3.0. Is the water quality improvement provided by the site valuable to society? \$ 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)? Yes = 1 No = 0 \$ 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0 \$ 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer)	Total for S 1	Add the points in the boxes above	2
Other sources GFA ZIDG Total for S 2 Add the points in the boxes above Record the rating on the first parts on the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)? Yes = 1 No = 0 Record the rating on the first parts on the 303(d) list (within 1 mi)? Yes = 1 No = 0 S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer	S 2.0. Does the landscape have the potential to support the water q	uality function at the site? land uses that generate pollutants?	he first page
Add the points in the boxes above Record the rating on the first partial Signal of Landscape Potential If score is: 2 1-2 M 0 = L Record the rating on the first partial Signal of Landscape Potential If score is: 2 1-2 M 0 = L Record the rating on the first partial Signal of Landscape At least one advantage of Land		re not listed in question \$ 2.1?	(
S 3.0. Is the water quality improvement provided by the site valuable to society? S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)? Yes = 1 No = 0 S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0 S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer	Total for S 2	Add the points in the boxes above	2
S 3.1. Does the wetland discharge directly to a stream, river, or lake that is on the 303(d) list (within 1 mi)? Yes = 1 No = 0 S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0 S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer	Rating of Landscape Potential If score is: 21-2 M 0 = L	Record the rating on t	
Yes = 1 No = 0 S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue? At least one aquatic resource in the basin is on the 303(d) list. Yes = 1 No = 0 Yes = 1 No = 0 S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer	S 3.0. Is the water quality improvement provided by the site valuable	e to society?	
basin is on the 303(d) list. Yes = 1 No = 0 S 3.3. Has the site been identified in a watershed or local plan as important for maintaining water quality (answer	S 3.1. Does the wetland discharge directly to a stream, river, or lake that is		Ò
			1
	S 3.3. Has the site been identified in a watershed or local plan as important YES if there is a TMDL for the drainage or basin in which wetland is f		0
Total for S 3 Add the points in the boxes above			1

SLOPE WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
S 4.0. Does the site have the potential to reduce flooding and erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > \frac{1}{8} in), or dense enough, to remain erect during surface flows. Dense, uncut, rigid plants cover > 90% of the area of the wetland All other conditions points = 1	0
Record the rating on to	he first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff? Yes = 1 No = 0	
Rating of Landscape Potential If score is: 1 = M 0 = L Record the rating on t	he first page
S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has surface 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 points = 0	3
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above	

NOTES and FIELD OBSERVATIONS:

H 1.6. Special habitat features	*
Check the habitat features that are present in the wetland. The number of checks is the number of points. Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface	
ponding or in stream.	
Cattails or bulrushes are present within the wetland.	
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.	
Emergent or shrub vegetation in areas that are permanently inundated/ponded.	
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degreeslope) OR signs of recent beaver activity	1
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,	
herbaceous, moss/ground cover)	
Total for H 1 Add the points in the boxes above	2
ating of Site Potential If score is:15-18 = H7-14 = M0-6 = L Record the rating on the first page	
H 2.0. Does the landscape have the potential to support habitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:	
Calculate: % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 15 = 25 %	
$> \frac{1}{3}$ (33.3%) of 1 km Polygon points = 3	
20-33% of 1km Polygon points = 2	2
10-19% of 1km Polygon points = 1	
<10% of 1km Polygon points = 0	
1 2.2. Undisturbed habitat in 1 km Polygon around wetland.	11 100
Calculate: % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 15 = 25 %	
Undisturbed habitat > 50% of Polygon (30/4) points = 3	
Cundisturbed habitat 10 - 50% and in 1-3 patches points = 2	d
Undisturbed habitat 10 - 50% and > 3 patches points = 1	
Undisturbed habitat < 10% of Polygon points = 0	
1 2.3. Land use intensity in 1 km Polygon:	
> 50% of Polygon is high intensity land use points = (-2)	-2
Does not meet criterion above points = 0	
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by	
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0
reclamation areas, irrigation districts, or reservoirs Yes = 3 No = 0	
Total for H 2 Add the points in the boxes above	2
ating of Landscape Potential If score is: 4-9 = H 2 1-3 = M < 1 = L Record the rating on the first page	Time
H 3.0. Is the habitat provided by the site valuable to society?	
d 3.1. Does the site provide habitat for species valued in laws, regulations, or policies? Choose 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 Appendix B)	
It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	-
It is mapped as a location for an individual WDFW species	0
— 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 has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1	
Site does not meet any of the criteria above	

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat		(only 1 score per box)	
H 1.0. Does the wetland have the potential to provide habitat for ma	any species?		
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emecategory is >= % ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed Emergent plants 0-12 in (0-30 cm) high are the highest layer and Emergent plants >12-40 in (>30-100 cm) high are the highest layer	d have > 30% cover		
Emergent plants > 40 in (> 100 cm) high are the highest layer wiScrub-shrub (areas where shrubs have >30% cover)Forested (areas where trees have >30% cover)	th >30% cover 4 or more checks: points = 3 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	0	
H 1.2. Is one of the vegetation types Aquatic Bed?	Yes = 1 (No = 0)	0	
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emerge 10% of its area during the March to early June OR in August for Lake Fringe wetlands. Yes = 3 p H 1.3.2. Does the wetland have an intermittent or permanent, and up or along one side, over at least ½ ac or 10% of its area? Answer	to the end of September? Answer YES points & go to H 1.4 No = go to H 1.3.2 progetated stream within its boundaries,	0	
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least species can be combined to meet the size threshold. You do not have Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, I thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species	to name the species.		
H 1.5. Interspersion of habitats		Figure_	
Decide from the diagrams below whether interspersion among types and unvegetated areas (open water or mudflats) is high, moderate, ke Use map of Cowardin and emergent plant classes prepared for questing H 1.3. If you have four or more plant classes or three classes and open the None = 0 points Low = 1 point All three diagrams in this row are High = 3 points	ow, or none. ons H 1.1 and map of open water from	Ō	
Ri	parian braided channels with 2 classes	1000	

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Categor
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools	
Is the wetland less than 4000 ft ² , and does it meet at least two of the following criteria?	
 Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. 	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	
 The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as basalt or clay. 	
— Surface water is present for less than 120 days during the wet season.	10000
Yes – Go to SC 1.1 No = Not a vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II No = Category III	Cat. II Cat. III
 The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems). If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. 	
OR does the wetland unit meet two of the following three sub-criteria?	Mine
Salt encrustations around more than 75% of the edge of the wetland	407177
— More than ¾ of the plant cover consists of species listed on Table 4	0.016
 A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. 	Cat. I
Yes = Category I No= Not an alkali wetland	
SC 3.0. Wetlands of High Conservation Value (WHCV)	1 7 - 17 6 - 1
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category I No = Not a WHCV	Cat. I
SC 3.3. 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 3.4 No = Not a WHCV SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed on their website? Yes = Category No = Not a WHCV	

SC 4 0 Pers and Calcarague Fans	
SC 4.0 Bogs and Calcareous Fens Does the wetland (or any part of the wetland unit) meet both the criteria for soils and vegetation in bogs or calcareous fens? Use the key below to identify if the wetland is a bog or calcareous fen. If you answer yes you will still need to rate the wetland based on its functions.	1000000
SC 4.1. Does an area within the wetland have organic soil horizons (i.e., layers of organic soil), either peats or mucks, that compose 16 in or more of the first 32 in of the soil profile? See Appendix C for a field key-to identify organic soils. Yes — Go to SC 4.2 No — Go to SC 4.2	
SC 4.2. Does an area within the wetland have organic soils, either peats or mucks, that are less than 16 in deep ove 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 4.3. No = Is not a bog for rating	
SC 4.3. Does an area within the wetland have more than 70% cover of mosses at ground level AND at least 30% of the total plant cover consists of species in Table 5? Yes = Category I bog No - Go to SC 4.4 NOTE: If you are uncertain about the extent of mosses in the understory, you may substitute that criterion by measuring the pH of the water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 and the plant species in Table 5 are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks forested (> 30% cover) with 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 5 provide more than 30% of the cover under the canopy? Yes = Category bog No - Go to SC 4.5	Cat. I
SC 4.5. Do the species listed in Table 6 comprise at least 20% of the total plant cover within an area of peats and mucks? Yes = Is a Calcareous Fen for purpose of rating No - Go to SC 4.6. SC 4.6. Do the species listed in Table 6 comprise at least 10% of the total plant cover in an area of peats and mucks,	,
AND one of the two following conditions is met:	
 Marl deposits (calcium carbonate (CaCO₃) precipitate) occur on the soil surface or plant stems The pH of free water is ≥ 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the wetland Yes = Is a Category I calcareous fen No = Is not a calcareous fen 	Cat. I

SC 5.0. Forested Wetlands	And the second of the second o	
Does the wetland have an area of forest rooted within	its boundary that meets at least one of	
the following three criteria? (Continue only if you have in question H 1.1)	identified that a forested class is present	
 The wetland is within the 100 year floodplain of a 	river or stream	
 Aspen (Populus tremuloides) represents at least 20 	0% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands sm "old-growth" according to the definitions for these (see definitions in question H3.1)		
	forested wetland with special characteristics)
SC 5.1. Does the wetland have a forest canopy where more than 509 growing native trees (see Table 7)?	% of the tree species (by cover) are slow Yes = Category No Go to SC 5.2	Cat. I
SC 5.2. Does the wetland have areas where aspen (<i>Populus tremulo</i> of woody species?		Cat. I
6C 5.3. Does the wetland have at least ¼ acre with a forest canopy v cover) are fast growing species (see Table 7)?	where more than 50% of the tree species (by	Cat. I
SC 5.4. Is the forested component of the wetland within the 100 year	ar floodplain of a river or stream? forested wetland with special characteristics	Cat. I
Category of wetland based on Special Characteristics		10
Choose the highest rating if wetland falls into several categories	on the party of the second of	NA
If you answered No for all types, enter "Not Applicable" on Summa	ry Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

Priority habitats listed by WDFW (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/publications/00165/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: **NOTE:** This question is independent of the land use between the wetland 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).
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests 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 old west and 80-160 years old east 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.
- 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.
- 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 > 12 in (30 cm)in eastern 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.
- Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

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

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B

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RATING SUMMARY – Eastern Washington

Name of wetland (or ID #): WETLAU	02	_ Date of site visit: 10 26/18
Rated by P.O'NEILL	Trained by Ecology?	Yes No Date of training
HGM Class used for rating SLOPE	Wetland has mu	ltiple HGM classes?Y_X_N
NOTE: Form is not complete without Source of base aerial photo/map _	the figures requested (f	igures can be combined).
OVERALL WETLAND CATEGORY _	(based on function	ns or special characteristics)

1. Category of wetland based on FUNCTIONS

	_Category I — Total score = 22-27
	_Category II - Total score = 19-21
	_Category III - Total score = 16-18
14	_Category IV - Total score = 9-15

FUNCTION	1	mprov iter Q	ving uality	Ну	drol	ogic		Habit	tat	
			Circle	the ap	prop	riate r	atings	5		
Site Potential	Н	М	0	Н	M	0	Н	M	(1)	
Landscape Potential	Н	M	L	Н	M	0	Н	W	L	
Value	Н	M	L	(H)	M	L	Н	M	(1)	TOTAL
Score Based on Ratings		5			5			4		14

Score for each function based on three ratings (order of ratings is not important)

9 = H,H,H
8 = H,H,M
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	CATEGORY Circle the appropriate category
Vernal Pools	II III
Alkali	I I
Wetland of High Conservation Value	
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	at all distinct I may be a least
Aspen Forest	and the property of the property of the
Old Growth or Mature Forest – fast growing	and Angles of He application
Floodplain forest	II
None of the above	

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	HE COMMENT
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 5.3	O COLLEGE
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	Segmont.
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 wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	4 -1 -1
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
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	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	1 - 1
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	3/50
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
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 wetland is found (website)	L 3.3	

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	THE LEWIS
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	S 4.1	
Boundary of area within 150 ft of the wetland (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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	d moters
Screen capture of map of 303(d) listed_waters in basin (from Ecology website)	S 3.1, S 3.2	1 11111
Screen capture of lisbof TMDL for WRA in which wetland is found (website)	S 3.3	

HGM Classification of Wetland in Eastern Washington

For questions 1-4, the criteria described must apply to the entire unit being rated.

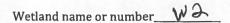
If the hydrologic criteria listed in each question do not apply to the entire unit being rated, you probably have a unit with multiple HGM classes. In this case, identify which hydrologic criteria in questions 1-4 apply, and go to Question 5.

1.	Does the entire unit meet both of the following criteria? The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in size At least 30% of the open water area is deeper than 10 ft (3 m)
	VES - The wetland class is Lake Fringe (Lacustrine Fringe)
2.	The wetland is on a slope (slope can be very gradual), 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; The water leaves the wetland without being impounded.
	YES – The wetland class is Slope IOTE: Surface water does not pond in these type of wetlands except occasionally in very small and hallow depressions or behind hummocks (depressions are usually <3 ft diameter and less than 1 foo leep).
3.	Ooes the entire wetland unit meet all of the following criteria? The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river; The overbank flooding occurs at least once every 10 years.
	IO - go to 4 YES – The wetland class is Riverine IOTE: The Riverine wetland can contain depressions that are filled with water when the river is not looding.
4.	s the entire wetland unit in a topographic depression in which water ponds, or is saturated to the urface, at some time during the year. This means that any outlet, if present, is higher than the interior f the wetland.
	IO – go to 5 YES – The wetland class is Depressional

5. 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 QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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.

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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 wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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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THE RESIDENT VENERAL TO PROCEED AND INCREMENTAL STATES OF DISCONDENSAL BALL TO HOLDHAM

SLOPE WETLANDS		Points
Water Quality Functions - Indicators that the site functions to it	mprove water quality	(only 1 score per box)
S 1.0. Does the site have the potential to improve water quality?	And the section with many and the section of	
S 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 ft ve horizontal distance) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0	J
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureorga	nic (use NRCS definitions): Yes = 3 No = 0	
S 1.3. Characteristics of the plants in the wetland that trap sediments and Choose the points appropriate for the description that best fits the phave trouble seeing the soil surface (>75% cover), and uncut means thigher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ½ of area Does not meet any of the criteria above for plants Total for S 1	plants in the wetland. Dense means you	0
		2
S 2.0. Does the landscape have the potential to support the water q		ne jirst page
S 2.2. Are there other sources of pollutants coming into the wetland that a Other sources GFAZIUG	re not listed in question $S 2.1?$ Yes = 1 No = 0	(
Total for S 2	Add the points in the boxes above	2
Rating of Landscape Potential If score is: 21-2 M 0 = L	Record the rating on t	he first page
S 3.0. Is the water quality improvement provided by the site valuable	e to society?	
S 3.1. Does the wetland discharge directly to a stream, river, or lake that is		0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an issue basin is on the 303(d) list.	? At least one aquatic resource in the Yes $=$ No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as important YES if there is a TMDL for the drainage or basin in which wetland is f		0
Total for S 3	Add the points in the boxes above	1
Rating of Value If score is: 2-4 = H 1 1 M 20 = L	Record the rating on t	he first page

SLOPE WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and	l erosion	Points (only 1 score per box)
S 4.0. Does the site have the potential to reduce flooding and erosion?		
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the appropriate for the description that best fits conditions in the wetland. Stems of plants she enough (usually > 1/8 in), or dense enough, to remain erect during surface flows. Dense, uncut, rigid plants cover > 90% of the area of the wetland All other conditions		O la first page
Rating of Site Potential If score is: 1 = M 0 0 EL	record the rating on ti	ne jirst puge
S 5.0. Does the landscape have the potential to support the hydrologic functions of the	site?	
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate crunoff?	excess surface Yes = 1 No = 0	1
Rating of Landscape Potential If score is: 1 = M 0 = L	Record the rating on ti	he first page
S 6.0. Are the hydrologic functions provided by the site valuable to society?		
S 6.1. Distance to the nearest areas downstream that have flooding problems:		- 170 feet of
The sub-basin immediately down-gradient of site has surface flooding problems that resu 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	points = 2 points = 1 points = 0	2
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a region plan?	onal flood control Yes = 2 No = 0	0
Total for S 6 Add the points in	n the boxes above	2
Rating of Value If score is: 2 2-4 = H 1 = M 0 = L	Record the rating on the	he first page

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes. HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	(only 1 score per box)
H 1.0. Does the wetland have the potential to provide habitat for many species?	K (Samuel)
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bedEmergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover	in posses in many is now a life
Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	0
H 1.2. Is one of the vegetation types Aquatic Bed?	0
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species Scoring: > 9 species: points = 2 4-9 species: points = 1 < 4 species: points = 0	>
H 1.5. Interspersion of habitats	Figure
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high. None = 0 points Low = 1 point Moderate = 2 points All three diagrams in this row are High = 3 points	
Rinarian hraided channels with 2 classes	is I alter

114.6.6			
H 1.6. Special habitat features Charlet habitat features that are present in the westland. The number of shocks in the number of points.			
Check the habitat features that are present in the wetland. The number of checks is the number of points. Loose rocks larger than 4 in OR large, downed, woody debris (> 4 in diameter) within the area of surface			
ponding or in stream.			
Cattails or bulrushes are present within the wetland.			
Standing snags (diameter at the bottom > 4 in) in the wetland or within 30 m (100 ft) of the edge.			
Emergent or shrub vegetation in areas that are permanently inundated/ponded.			
Stable steep banks of fine material that might be used by beaver or muskrat for denning (> 45 degree	1		
slope) OR signs of recent beaver activity			
Invasive species cover less than 20% in each stratum of vegetation (canopy, sub-canopy, shrubs,			
herbaceous, moss/ground cover)	ege (a l		
Total for H 1 Add the points in the boxes above	2		
ating of Site Potential If score is: 15-18 = H 7-14 = M - 0-6 = L Record the rating on the first page			
H 2.0. Does the landscape have the potential to support habitat functions of the site?			
H 2.1. Accessible habitat (only area of habitat abutting wetland). If total accessible habitat is:			
Calculate: % undisturbed habitat 10 + [(% moderate and low intensity land uses)/2] 19 = 29%			
$> \frac{1}{3}$ (33.3%) of 1 km Polygon (38/2) points = 3	7		
20-33% of 1km Polygon points = 2	7		
10-19% of 1km Polygon points = 1			
<10% of 1km Polygon points = 0	61.101		
H 2.2. Undisturbed habitat in 1 km Polygon around wetland.			
Calculate: % undisturbed habitat $10 + [(\% \text{ moderate and low intensity land uses})/2] 19 = 29 \%Undisturbed habitat > 50% of Polygon (38/4) points = 3$			
Undisturbed habitat $> 50\%$ of Polygon ($>8/4$) points = 3	2		
Undisturbed habitat 10 - 50% and in 1-3 patches points = 2			
Undisturbed habitat 10 - 50% and > 3 patches points = 1			
Undisturbed habitat < 10% of Polygon points = 0			
H 2.3. Land use intensity in 1 km Polygon:	April to		
> 50% of Polygon is high intensity land use points = (-2)	-3		
Does not meet criterion above points = 0	- L He		
H 2.4. The wetland is in an area where annual rainfall is less than 12 in, and its water regime is not influenced by			
irrigation practices, dams, or water control structures. Generally, this means outside boundaries of	0		
reclamation areas, irrigation districts, or reservoirs Yes = 3 No = 0	enember:		
Total for H 2 Add the points in the boxes above	2		
ating of Landscape Potential If score is: 4-9 = H 2 1-3 = M <1 = L Record the rating on the 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 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 Appendix B)			
It provides habitat for Threatened or Endangered species (any plant or animal on state or federal lists)	2		
— It is mapped as a location for an individual WDFW species	0		
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 has 1 or 2 priority habitats within 100 m (see Appendix B) points = 1			
Site has 1 the 2 priority habitats within 100 in Isee Appendix by			

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CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Categor
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.	
SC 1.0. Vernal pools Is the wetland less than 4000 ft ² , and does it meet at least two of the following criteria?	
 Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater input. 	
— Wetland plants are typically present only in the spring; the summer vegetation is typically upland	
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.	Till belleville
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as	
basalt or clay.	124-1486
— Surface water is present for less than 120 days during the wet season.	- 70
Yes – Go to SC 1.1 No = Not a vernal pool	
SC 1.1. Is the vernal pool relatively undisturbed in February and March?	Carry of
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics	1 3 4 5
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II No = Category III	Cat. II
	Cat. III
SC 2.0. Alkali wetlands	
Does the wetland meet one of the following criteria?	
— The wetland has a conductivity > 3.0 mS/cm.	
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the	17.315
wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).	9.14
— If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt.	1
OR does the wetland unit meet two of the following three sub-criteria?	n, 417
Salt encrustations around more than 75% of the edge of the wetland	time
— More than ¾ of the plant cover consists of species listed on Table 4	0.47
— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands.	Cat. I
Yes = Category I No= Not an alkali wetland	
2C 2 0 Market de a filish Companyation Value (MICO)	
SC 3.0. Wetlands of High Conservation Value (WHCV)	
SC 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3	1 1 To
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value?	100 m R 10
Yes = Category I No = Not a WHCV	Cat. I
C 3.3. 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 3.4 No = Not a WHCV	
SC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed	
on their website? Yes = Category No =Not a WHCV	

SC 4.0 Bogs and Calcareous Fens		
Does the wetland (or any part of	f the wetland unit) meet both the criteria for soils and vegetation in bogs or	
calcareous fens? Use the key belo	ow to identify if the wetland is a bog or calcareous fen. If you answer yes	
you will still need to rate the we	etland based on its functions.	
SC 4.1. Does an area within the wetland	have organic soil horizons (i.e., layers of organic soil), either peats or	
mucks, that compose 16 in or mo	ore of the first 32 in of the soil profile? See Appendix C for a field key to	
identify organic soils.	Yes – Go to SC 4.3 No – Go to SC 4.2	
	have organic soils, either peats or mucks, that are less than 16 in deep over dpan such as clay or volcanic ash, or that are floating on top of a lake or	
pond?	Yes – Go to SC 4.3 No = Is not a bog for rating	
SC 4.3. Does an area within the wetland	have more than 70% cover of mosses at ground level AND at least 30% of	
the total plant cover consists of s	species in Table 5? Yes = Category I bog No – Go to SC 4.4	
NOTE: If you are uncertain about	t the extent of mosses in the understory, you may substitute that criterion	
by measuring the pH of the wate	er that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0	
and the plant species in Table 5 a	are present, the wetland is a bog.	
SC 4.4. Is an area with peats or mucks fo	prested (> 30% cover) with subalpine fir, western red cedar, western	
	g aspen, Engelmann spruce, or western white pine, AND any of the species d in Table 5 provide more than 30% of the cover under the canopy?	Cat. I
	Yes = Category I bog No – Go to SC 4.5	
SC 4.5. Do the species listed in Table 6 co	omprise at least 20% of the total plant cover within an area of peats and	
mucks?	Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6	
SC 4.6. Do the species listed in Table 6 co	omprise at least 10% of the total plant cover in an area of peats and mucks,	
AND one of the two following co	inditions is met:	
 Marl deposits [calcium carbon 	nate (CaCO ₃) precipitate] occur on the soil surface or plant stems	Cat. I
— The pH of free water is ≥ 6.8 A	AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the	
wetland	Yes = is a Category I calcareous fen No = is not a calcareous fen	

SC 5.0. Forested Wetlands	
Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H 1.1)	
The wetland is within the 100 year floodplain of a river or stream	
— Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species	
— There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1)	
Yes – Go to SC 5.1 (No = Not a forested wetland with special characteristics	>
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? Yes = Category No Go to SC 5.2	Cat. I
SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = Category No – Go to SC 5.3	Cat. I
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? Yes = Category II No Go to SC 5.4	Cat. II
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = Category II (No = Not a forested wetland with special characteristics)	Cat. II
Category of wetland based on Special Characteristics Choose the highest rating if wetland falls into several categories	NA
If you answered No for all types, enter "Not Applicable" on Summary Form	

Appendix B: WDFW Priority Habitats in Eastern Washington

<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/publications/00165/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: **NOTE:** This question is independent of the land use between the wetland 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).
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests 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 old west and 80-160 years old east 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.
- 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.
- 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.
- $\begin{picture}(20,0)\put(0,0)$
- 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 > 12 in (30 cm)in eastern 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.
- Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

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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Appendix B

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RATING SUMMARY – Eastern Washington

Name of wetland (or ID #):WETLAX	Date of site visit: 10/26/18
Rated by P.O'NEILL	Trained by Ecology?YesX No Date of training
HGM Class used for rating SLOPE	Wetland has multiple HGM classes?Y X N
NOTE: Form is not complete without	t the figures requested (figures can be combined).
Source of base aerial photo/map	GOOGLE PKRTH
OVERALL WETLAND CATEGORY	(based on functions or special characteristics)

1. Category of wetland based on FUNCTIONS

_Category I — Total score = 22-27
_Category II — Total score = 19-21
_Category III - Total score = 16-18
Category IV — Total score = 9-15

FUNCTION	Improving Water Quality		Hydrologic		Habitat			me lande		
			Circle	the ap	prop	riate r	ating.	s		
Site Potential	Н	M	0	Н	M	0	Н	M	0	
Landscape Potential	Н	M	L	Н	M	0	Н	M	L	
Value	Н	M	L	H	M	L	Н	М	(1)	TOTAL
Score Based on Ratings		5			5			4	1.1	15

Score for each function based on three ratings (order of ratings is not important) 9 = H,H,H

8 = H,H,M 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	CATEGORY Circle the appropriate category
Vernal Pools	II III
Alkali	I
Wetland of High Conservation Value	
Bog and Calcareous Fens	I
Old Growth or Mature Forest – slow growing	an sto vigorata night Marijum a seria
Aspen Forest	research to the second
Old Growth or Mature Forest – fast growing	on and assistanting II class for
Floodplain forest	II
None of the above	

Maps and figures required to answer questions correctly for Eastern Washington Depressional Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	D 1.3, H 1.1, H 1.5	
Hydroperiods (including area of open water for H 1.3)	D 1.4, H 1.2, H 1.3	
Location of outlet (can be added to map of hydroperiods)	D 1.1, D 4.1	1 1 1 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 5.3	
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	
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 wetland is found (website)	D 3.3	

Riverine Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Ponded depressions	R 1.1	
Boundary of area within 150 ft of the wetland (can be added to another figure)	R 2.4	
Map of the contributing basin	R 2.2, R 2.3, R 5.2	
Plant cover of trees, shrubs, and herbaceous plants	R 1.2, R 4.2	
Width of wetland vs. width of stream (can be added to another figure)	R 4.1	
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	
Screen capture of map of 303(d) listed waters in basin (from Ecology website)	R 3.1	
Screen capture of list of TMDLs for WRIA in which wetland is found (website)	R 3.2, R 3.3	

Lake Fringe Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	L 1.1, L 4.1, H 1.1, H 1.5	
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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
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 wetland is found (website)	L 3.3	1.5

Slope Wetlands

Map of:	To answer questions:	Figure #
Cowardin plant classes and classes of emergents	H 1.1, H 1.5	
Hydroperiods	H 1.2, H 1.3	
Plant cover of dense trees, shrubs, and herbaceous plants	S 1.3	
Plant cover of dense, rigid trees, shrubs, and herbaceous plants (can be added to figure above)	5 4.1	
Boundary of area within 150 ft of the wetland (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 polygons for accessible habitat and undisturbed habitat	H 2.1, H 2.2, H 2.3	
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 wetland is found (website)	S 3.3	, X

HGM Classification of Wetland in Eastern Washington

For questions 1-4, 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 1-4 apply, and go to Question 5.

1.	Does the entire unit meet both of the following criteria?The vegetated part of the wetland is on the water side of the Ordinary High Water Mark of a body
	of permanent open water (without any plants on the surface) that is at least 20 ac (8 ha) in sizeAt least 30% of the open water area is deeper than 10 ft (3 m)
1	NO – go to 2 YES – The wetland class is Lake Fringe (Lacustrine Fringe)
2.	Does the entire wetland unit meet all of the following criteria? The wetland is on a slope (slope can be very gradual), 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; The water leaves the wetland without being impounded.
	NO - go to 3 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 foo deep).
3.	Does the entire wetland unit meet all of the following criteria? The unit is in a valley, or stream channel, where it gets inundated by overbank flooding from that stream or river; The overbank flooding occurs at least once every 10 years.
	NO - go to 4 YES – The wetland class is Riverine NOTE: The Riverine wetland can contain depressions that are filled with water when the river is not flooding.
4.	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 5 YES – The wetland class is Depressional
5.	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 QUESTIONS 1-4 APPLY TO DIFFERENT AREAS IN THE WETLAND 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 wetland unit; classify the wetland using the class that represents more than 90% of the total area.

HGM classes within the wetland unit being rated	HGM Class to use in rating
Slope + Riverine	Riverine
Slope + Depressional	Depressional
Slope + Lake Fringe	Lake Fringe
Depressional + Riverine (the riverine portion is within the boundary of depression)	Depressional
Depressional + Lake Fringe	Depressional
Riverine + Lake Fringe	Riverine

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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SLOPE WETLANDS		Points
Water Quality Functions - Indicators that the site functions to	to improve water quality	(only 1 score per box)
S 1.0. Does the site have the potential to improve water quality?	ay samusi ya waxan kubishiya ka kasa k	
S 1.1. Characteristics of average slope of wetland: (a 1% slope has a 1 f horizontal distance) Slope is 1% or less Slope is > 1% - 2% Slope is > 2% - 5% Slope is greater than 5%	points = 3 points = 2 points = 1 points = 0	2
S 1.2. The soil 2 in below the surface (or duff layer) is true clay or tureo	rganic (use NRCS definitions): Yes = 3 No = 0	
S 1.3. Characteristics of the plants in the wetland that trap sediments a Choose the points appropriate for the description that best fits thave trouble seeing the soil surface (>75% cover), and uncut med higher than 6 in. Dense, uncut, herbaceous plants > 90% of the wetland area Dense, uncut, herbaceous plants > ½ of area Dense, woody, plants > ½ of area Dense, uncut, herbaceous plants > ½ of area Does not meet any of the criteria above for plants	points = 6 points = 3 points = 2 points = 1 points = 0	0
Total for S 1	Add the points in the boxes above	2
S 2.0. Does the landscape have the potential to support the water S 2.1. Is > 10% of the area within 150 ft on the uphill side of the wetlan		he first page
S 2.2. Are there other sources of pollutants coming into the wetland the Other sources	at are not listed in question \$ 2.12 Yes = 1 No = 0	1 30
Total for S 2	Add the points in the boxes above	2
Rating of Landscape Potential If score is: 2 1-2 = M 0 = L	Record the rating on t	he first page
S 3.0. Is the water quality improvement provided by the site value	able to society?	
S 3.1. Does the wetland discharge directly to a stream, river, or lake that	It is on the 303(d) list (within 1 mi)? Yes = 1 $(No = 0)$	0
S 3.2. Is the wetland in a basin or sub-basin where water quality is an is basin is on the 303(d) list.	sue? At least one aquatic resource in the Yes = 1 No = 0	1
S 3.3. Has the site been identified in a watershed or local plan as impor YES if there is a TMDL for the drainage or basin in which wetland		0
Total for S 3	Add the points in the boxes above	1
Rating of Value If score is: 2-4 = H 1 = M 0 = L	Record the rating on t	he first page

SLOPE WETLANDS Hydrologic Functions - Indicators that the site functions to reduce flooding and erosion	Points (only 1 score per box)
S 4.0. Does the site have the potential to reduce flooding and erosion?	
S 4.1. Characteristics of plants that reduce the velocity of surface flows during storms: Choose the points appropriate for the description that best fits conditions in the wetland. Stems of plants should be thick enough (usually > 1/8 in), or dense enough, to remain erect during surface flows. Dense, uncut, rigid plants cover > 90% of the area of the wetland points = 1	0
All other conditions points = 0	
Rating of Site Potential If score is: $1 = M$ $\bigcirc 0 = L$ Record the rating of Site Potential If score is: $1 = M$ $\bigcirc 0 = L$	on the first page
S 5.0. Does the landscape have the potential to support the hydrologic functions of the site?	N DOMESTIC
S 5.1. Is more than 25% of the area within 150 ft upslope of wetland in land uses that generate excess surface runoff? Yes = 1 No = 0	1
Rating of Landscape Potential If score is: 1 0 = L Record the rating of	on the first page
S 6.0. Are the hydrologic functions provided by the site valuable to society?	
S 6.1. Distance to the nearest areas downstream that have flooding problems: The sub-basin immediately down-gradient of site has surface 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 points = 0	2
S 6.2. Has the site been identified as important for flood storage and flood conveyance in a regional flood control plan? Yes = 2 No = 0	0
Total for S 6 Add the points in the boxes above	a

Rating of Value If score is: ___2-4 = H ____1 = M ____0 = L

Record the rating on the first page

NOTES and FIELD OBSERVATIONS:

These questions apply to wetlands of all HGM classes.	(only 1 score per
HABITAT FUNCTIONS - Indicators that site functions to provide important habitat	
H 1.0. Does the wetland have the potential to provide habitat for many species?	box)
H 1.1. Structure of the plant community: Check the Cowardin vegetation classes present and categories of emergent plants. Size threshold for each category is >= ¼ ac or >= 10% of the wetland if wetland is < 2.5 ac. Aquatic bed	
Emergent plants 0-12 in (0-30 cm) high are the highest layer and have > 30% cover Emergent plants >12-40 in (>30-100 cm) high are the highest layer with >30% cover Emergent plants > 40 in (> 100 cm) high are the highest layer with >30% cover Scrub-shrub (areas where shrubs have >30% cover) Forested (areas where trees have >30% cover) 3 checks: points = 2 2 checks: points = 1 1 check: points = 0	0
H 1.2. Is one of the vegetation types Aquatic Bed? Yes = 1 No = 9	
H 1.3. Surface water H 1.3.1. Does the wetland have areas of open water (without emergent or shrub plants) over at least ¼ ac OR 10% of its area during the March to early June OR in August to the end of September? Answer YES for Lake Fringe wetlands. Yes = 3 points & go to H 1.4 No = go to H 1.3.2 H 1.3.2. Does the wetland have an intermittent or permanent, and unvegetated stream within its boundaries, or along one side, over at least ¼ ac or 10% of its area? Answer yes only if H 1.3.1 is No. Yes = 3 No = 0	0
H 1.4. Richness of plant species Count the number of plant species in the wetland that cover at least 10 ft². Different patches of the same species can be combined to meet the size threshold. You do not have to name the species. Do not include Eurasian milfoil, reed canarygrass, purple loosestrife, Russian olive, Phragmites, Canadian thistle, yellow-flag iris, and saltcedar (Tamarisk) # of species # Scoring: > 9 species: points = 2 4-9 species: points = 1 <4 species: points = 0	1
H 1.5. Interspersion of habitats	Figure
Decide from the diagrams below whether interspersion among types of plant structures (described in H 1.1), and unvegetated areas (open water or mudflats) is high, moderate, low, or none. Use map of Cowardin and emergent plant classes prepared for questions H 1.1 and map of open water from H 1.3. If you have four or more plant classes or three classes and open water, the rating is always high.	0
None = 0 points Low = 1 point Moderate = 2 points	
All three diagrams in this row are High = 3 points Riparian braided channels with 2 classes	Control of the contro

H 1.6. Special habitat features Check the habitat features that are present in the wetland. Loose rocks larger than 4 in OR large, downed, woody ponding or in stream. Cattails or bulrushes are present within the wetland. Standing snags (diameter at the bottom > 4 in) in the wetland. Emergent or shrub vegetation in areas that are permal stable steep banks of fine material that might be used slope) OR signs of recent beaver activity Invasive species cover less than 20% in each stratum of herbaceous, moss/ground cover)	vetland or within 30 m (100 ft) of the edge. nently inundated/ponded. by beaver or muskrat for denning (> 45 degree	-
Total for H 1	Add the points in the boxes above	2
Rating of Site Potential If score is:15-18 = H7-14 = M &		
H 2.0. Does the landscape have the potential to support hat	pitat functions of the site?	
H 2.1. Accessible habitat (only area of habitat abutting wetland). I Calculate: % undisturbed habitat 10 + [(% moderate > 1/3 (33.3%) of 1 km Polygon 10-19% of 1km Polygon	f total accessible habitat is: a and low intensity land uses)/2] 15 = 25 % points = 3 points = 2 points = 1	2
<10% of 1km Polygon H 2.2. Undisturbed habitat in 1 km Polygon around wetland.	points = 0	
Calculate: % undisturbed habitat + [(% moderate Undisturbed habitat > 50% of Polygon Undisturbed habitat 10 - 50% and in 1-3 patches Undisturbed habitat 10 - 50% and > 3 patches Undisturbed habitat < 10% of Polygon	e and low intensity land uses)/2] $15 = 25\%$ points = 3 points = 1 points = 0	2
+ 2.3. Land use intensity in 1 km Polygon: > 50% of Polygon is high intensity land use Does not meet criterion above	points = (-2) points = 0	-2
H 2.4. The wetland is in an area where annual rainfall is less than irrigation practices, dams, or water control structures. General reclamation areas, irrigation districts, or reservoirs	12 in, and its water regime is not influenced by	6
Total for H 2	Add the points in the boxes above	3
lating of Landscape Potential If score is: 4-9 = H 21-3 M	< 1 = L Record the rating on the 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, reg that applies to the wetland being rated Site meets ANY of the following criteria: — It has 3 or more priority habitats within 100 m (see App — It provides habitat for Threatened or Endangered speci — It is mapped as a location for an individual WDFW spec — It is a Wetland of High Conservation Value as determine — It has been categorized as an important habitat site in a Shoreline Master Plan, or in a watershed plan Site has 1 or 2 priority habitats within 100 m (see Appendix Site does not meet any of the criteria above	points = 2 pendix B) es (any plant or animal on state or federal lists) ies ed by the Department of Natural Resources a local or regional comprehensive plan, in a	0

CATEGORIZATION BASED ON SPECIAL CHARACTERISTICS

Please determine if the wetland meets the attributes described below and circle the appropriate category. NOTE: A wetland may meet the criteria for more than one set of special characteristics. Record all those that apply. NOTE: All wetlands should also be characterized based on their functions.

Wetland Type	Category			
Check off any criteria that apply to the wetland. Circle the category when the appropriate criteria are met.				
SC 1.0. Vernal pools				
Is the wetland less than 4000 ft ² , and does it meet at least two of the following criteria?				
— Its only source of water is rainfall or snowmelt from a small contributing basin and has no groundwater				
input. — Wetland plants are typically present only in the spring; the summer vegetation is typically upland				
annuals. If you find perennial, obligate, wetland plants, the wetland is probably NOT a vernal pool.				
— The soil in the wetland is shallow [< 1 ft (30 cm)deep] and is underlain by an impermeable layer such as				
basalt or clay.				
— Surface water is present for less than 120 days during the wet season.				
Yes – Go to SC 1.1 No = Not a vernal pool				
SC 1.1. Is the vernal pool relatively undisturbed in February and March?				
Yes – Go to SC 1.2 No = Not a vernal pool with special characteristics				
SC 1.2. Is the vernal pool in an area where there are at least 3 separate aquatic resources within 0.5 mi (other wetlands, rivers, lakes etc.)? Yes = Category II (No - Category III)	Cat. II			
SC 2.0. Alkali wetlands				
Does the wetland meet one of the following criteria?				
— The wetland has a conductivity > 3.0 mS/cm.				
— The wetland has a conductivity between 2.0 and 3.0 mS, and more than 50% of the plant cover in the wetland can be classified as "alkali" species (see Table 4 for list of plants found in alkali systems).				
 If the wetland is dry at the time of your field visit, the central part of the area is covered with a layer of salt. 				
OR does the wetland unit meet two of the following three sub-criteria?				
— Salt encrustations around more than 75% of the edge of the wetland				
— More than ¾ of the plant cover consists of species listed on Table 4				
— A pH above 9.0. All alkali wetlands have a high pH, but please note that some freshwater wetlands may also have a high pH. Thus, pH alone is not a good indicator of alkali wetlands. Yes = Category I No= Not an alkali wetland	Cat. I			
SC 3.0. Wetlands of High Conservation Value (WHCV)				
C 3.1. Has the WA Department of Natural Resources updated their website to include the list of Wetlands of High				
Conservation Value? Yes – Go to SC 3.2 No – Go to SC 3.3				
SC 3.2. Is the wetland listed on the WDNR database as a Wetland of High Conservation Value? Yes = Category No = Not a WHCV				
C 3.3. Is the wetland in a Section/Township/Range that contains a Natural Heritage wetland?				
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf				
http://www1.dnr.wa.gov/nhp/refdesk/datasearch/wnhpwetlands.pdf Yes - Contact WNHP/WDNR and go to SC 3.4, No = Not a WHCV iC 3.4. Has WDNR identified the wetland within the S/T/R as a Wetland of High Conservation Value and it is listed				

SC 4.0 Bogs and Calcareous Fens	
calcareous fens? Use the key	rt of the wetland unit) meet both the criteria for soils and vegetation in bogs or below to identify if the wetland is a bog or calcareous fen. If you answer yes wetland based on its functions.
	and have organic soil horizons (i.e., layers of organic soil), either peats or r more of the first 32 in of the soil profile? See Appendix C for a field key to Yes – Go to SC 4.3 No – Go to SC 4.2
	and have organic soils, either peats or mucks, that are less than 16 in deep over hardpan such as clay or volcanic ash, or that are floating on top of a lake or Yes – Go to SC 4.3 (6) = Is not a bog for rating
the total plant cover consists NOTE: If you are uncertain all by measuring the pH of the v	and have more than 70% cover of mosses at ground level AND at least 30% of species in Table 5? Yes = Category I bog (No – Go to SC 4.4) bout the extent of mosses in the understory, you may substitute that criterion water that seeps into a hole dug at least 16 in deep. If the pH is less than 5.0 e 5 are present, the wetland is a bog.
hemlock, lodgepole pine, qua	cs forested (> 30% cover) with subalpine fir, western red cedar, western aking aspen, Engelmann spruce, or western white pine, AND any of the species isted in Table 5 provide more than 30% of the cover under the canopy? Yes = Category I bog No Go to SC 4.5
mucks?	6 comprise at least 20% of the total plant cover within an area of peats and Yes = Is a Calcareous Fen for purpose of rating No – Go to SC 4.6
AND one of the two following	
	rbonate (CaCO ₃) precipitate] occur on the soil surface or plant stems 6.8 AND electrical conductivity is ≥ 200 uS/cm at multiple locations within the Yes = Is a Category I calcareous fen No € Is not a calcareous fen

SC 5.0. Forested Wetlands		
Does the wetland have an area of forest rooted within its boundary that meets at least one of the following three criteria? (Continue only if you have identified that a forested class is present in question H 1.1) — The wetland is within the 100 year floodplain of a river or stream		
 — Aspen (Populus tremuloides) represents at least 20% of the total cover of woody species — There is at least ¼ ac of trees (even in wetlands smaller than 2.5 ac) that are "mature" or "old-growth" according to the definitions for these priority habitats developed by WDFW (see definitions in question H3.1) Yes – Go to SC 5.1 No = Not a forested wetland with special characteristics 		
SC 5.1. Does the wetland have a forest canopy where more than 50% of the tree species (by cover) are slow growing native trees (see Table 7)? Yes = Category I No – Go to SC 5.2	Cat. I	
SC 5.2. Does the wetland have areas where aspen (<i>Populus tremuloides</i>) represents at least 20% of the total cover of woody species? Yes = Category No – Go to SC 5.3	Cat. I	
SC 5.3. Does the wetland have at least ¼ acre with a forest canopy where more than 50% of the tree species (by cover) are fast growing species (see Table 7)? Yes = Category II No - Go to SC 5.4		
SC 5.4. Is the forested component of the wetland within the 100 year floodplain of a river or stream? Yes = Category II No = Not a forested wetland with special characteristics	Cat. II	
Category of wetland based on Special Characteristics Choose the highest rating if wetland falls into several categories	NA	

Appendix B: WDFW Priority Habitats in Eastern Washington

<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/publications/00165/wdfw00165.pdf or access the list from here: http://wdfw.wa.gov/conservation/phs/list/)

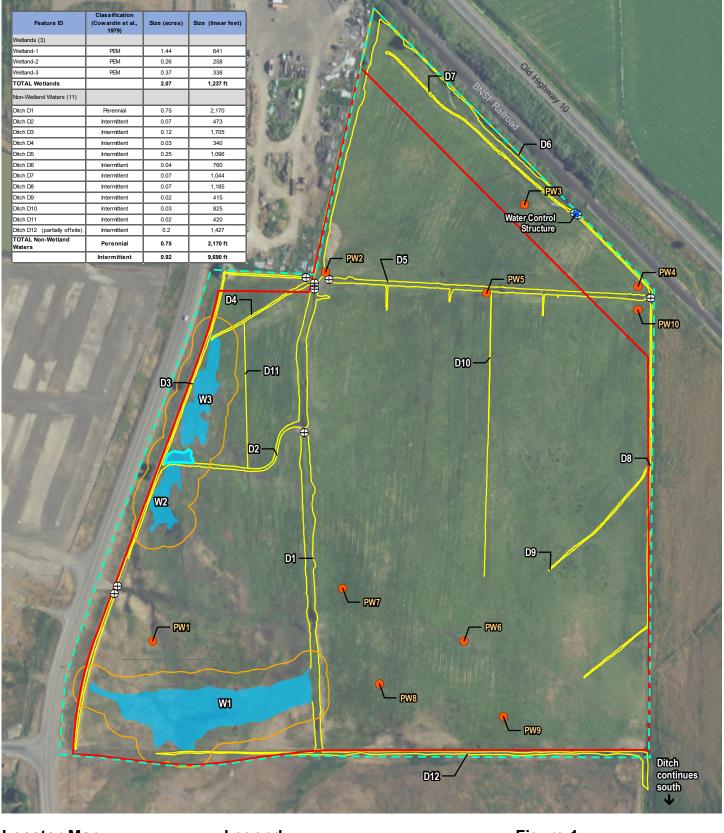
Count how many of the following priority habitats are within 330 ft (100 m) of the wetland: **NOTE:** This question is independent of the land use between the wetland and the priority habitat.

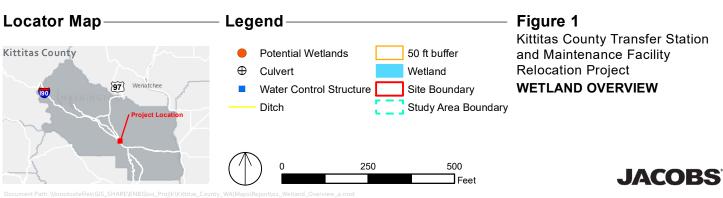
Aspen Stands: Pure or mixed stands of aspen greater than 1 ac (0.4 ha).

- **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).
- Old-growth/Mature forests: Old-growth east of Cascade crest Stands are highly variable in tree species composition and structural characteristics due to the influence of fire, climate, and soils. In general, stands will be >150 years of age, with 10 trees/ac (25 trees/ha) that are > 21 in (53 cm) dbh, and 1-3 snags/ac (2.5-7.5 snags/ha) that are > 12-14 in (30-35 cm) diameter. Downed logs may vary from abundant to absent. Canopies may be single or multi-layered. Evidence of human-caused alterations to the stand will be absent or so slight as to not affect the ecosystem's essential structures and functions. Mature forests 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 old west and 80-160 years old east 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.
- 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.
- 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.
- \mathcal{L}_0 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 > 12 in (30 cm)in eastern 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.
- Shrub-steppe: A nonforested vegetation type consisting of one or more layers of perennial bunchgrasses and a conspicuous but discontinuous layer of shrubs (see Eastside Steppe for sites with little or no shrub cover).
- Eastside Steppe: Nonforested vegetation type dominated by broadleaf herbaceous flora (i.e., forbs), perennial bunchgrasses, or a combination of both. Bluebunch wheatgrass (*Pseudoroegneria spicata*) is often the prevailing cover component along with Idaho fescue (*Festuca idahoensis*), Sandberg bluegrass (*Poa secunda*), rough fescue (*F. campestris*), or needlegrasses (*Achnatherum* spp.).
- Juniper Savannah: All juniper woodlands.

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

Wetland Rating System for Eastern WA: 2014 Update Effective January 1, 2015 Appendix B







Source: GoogleEarth (2018)

Lá	and Use
	Relatively undisturbed
	Moderate & low intensity
	High intensity

Figure 2a Land Use Within 1-km Polygon of W1 Kittitas County Waste Transfer Station Site Ellensburg, Kittitas County, WA



Source: GoogleEarth (2018)

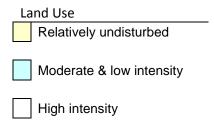


Figure 2b Land Use Within 1-km Polygon of W2 Kittitas County Waste Transfer Station Site Ellensburg, Kittitas County, WA



Source: GoogleEarth (2018)

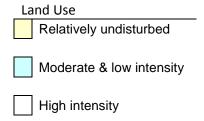
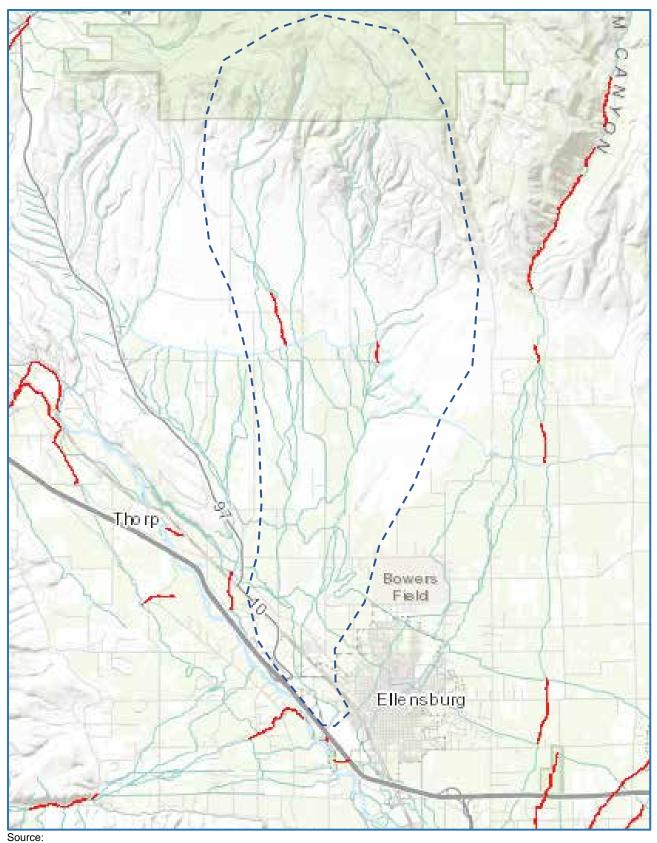


Figure 2c Land Use Within 1-km Polygon of W3 Kittitas County Waste Transfer Station Site Ellensburg, Kittitas County, WA



 $\frac{\text{https://fortress.wa.gov/ecy/waterqualityatlas/map.aspx?CustomMap=y\&RT=0\&Layers=23,27,29\&Filters=y,n,n,n\&F1.4=n,n,n,n,n,y\&Bbox=-13521532,5875418,-13364429,6040225}{\text{BBox}=-13521532,5875418,-13364429,6040225}}$

Figure 3 303(d)-listed Waters in Contributing Basin Kittitas County Waste Transfer Station Site Ellensburg, Kittitas County, WA



Springs Formspage + Weier & Shorelines + Weier Improvement + Total Maximum Daily Load process + Stressory of projects + Station County

Water quality improvement projects

Select the waterbody or pollulant name to find more information about the specific project.

Waterbody Name(s)	Pollutant(s)	Status	Project Lead(s)
Chase Creek	Ammonià-N BOD (g-dey) Chlorine Fecal Coliform	EPA approved	Inne Cresch 509-454-7600
Sected River	Temperature	ЕРА арргоуев	Mine Young 509-575-2642
YmportCooke Creek Introduces Bagger Creek Buil Datch Carlbou Creek Cherry Creek Cit Canal Coleman Creek Cook Creek BWC Canal Johnson Drain HIBD Canal Mercer Creek Nameum Creek Nameum Creek Nameum Creek Wilson Creek Wilson Creek Wilson Creek	Pecal Coliform	EFA approved Has an implementation plan Post-TMDL monitoring report	More Corectl 509-454-7560 Gree Bono 509-454-4174
Yácima Rivet	Toxical	Under development	Nov. Creectl 509-454-7080
Woper Yakima Stren	Dielarin DDT Suspended sediments Turbidity	EPA approved and Pies implementation plan	Jame Seesch 509-454-7660
Quoer Yanima River	Temperature	Under development	Serie Creect) 505-454-7860

To request ADA accommodation, call Ecology at 360-407-7668, 711 (relay service), or 877-833-6341 (TTY). More about our accessfolidy services.

Appendix E Sensitive Species Data Search Results

Sensitive Species Data Search Results

- E1 IPaC Explore Location
- E2 PHSPlus Map
- E3 WNHP Historic Rare Plant Element Occurrences

IPaC

U.S. Fish & Wildlife Service

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Kittitas County, Washington



Local office

Washington Fish And Wildlife Office

\((360) 753-9440

(360) 753-9405

510 Desmond Drive Se, Suite 102 Lacey, WA 98503-1263

http://www.fws.gov/wafwo/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the <u>Ecological Services Program</u> of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact <u>NOAA Fisheries</u> for <u>species under their jurisdiction</u>.

- Species listed under the <u>Endangered Species Act</u> are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the <u>listing status page</u> for more information.
- 2. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME STATUS

IPaC: Explore Location

10/22/2018

Canada Lynx Lynx canadensis

There is **final** critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/3652

Threatened

Gray Wolf Canis lupus

There is **final** critical habitat for this species. The location of the critical habitat is not available.

https://ecos.fws.gov/ecp/species/4488

Endangered

North American Wolverine Gulo gulo luscus

No critical habitat has been designated for this species.

https://ecos.fws.gov/ecp/species/5123

Proposed Threatened

Birds

NAME STATUS

Marbled Murrelet Brachyramphus marmoratus

There is **final** critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/4467

Threatened

Yellow-billed Cuckoo Coccyzus americanus

There is **proposed** critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/3911

Threatened

Fishes

NAME STATUS

Bull Trout Salvelinus confluentus

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

https://ecos.fws.gov/ecp/species/8212

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act^{1} and the Bald and Golden Eagle Protection Act^{2} .

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described <u>below</u>.

- 1. The Migratory Birds Treaty Act of 1918.
- 2. The <u>Bald and Golden Eagle Protection Act</u> of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds
 http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds
 http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the <u>USFWS</u> <u>Birds of Conservation Concern</u> (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ <u>below</u>. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the <u>E-bird data mapping</u> tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found <u>below</u>.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME

BREEDING SEASON (IF A
BREEDING SEASON IS INDICATED
FOR A BIRD ON YOUR LIST, THE
BIRD MAY BREED IN YOUR
PROJECT AREA SOMETIME
WITHIN THE TIMEFRAME
SPECIFIED, WHICH IS A VERY
LIBERAL ESTIMATE OF THE DATES
INSIDE WHICH THE BIRD BREEDS
ACROSS ITS ENTIRE RANGE.
"BREEDS ELSEWHERE" INDICATES

THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Bald Eagle Haliaeetus leucocephalus

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

https://ecos.fws.gov/ecp/species/1626

Breeds Dec 1 to Aug 31

Brewer's Sparrow Spizella breweri

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9291

Breeds May 15 to Aug 10

Golden Eagle Aquila chrysaetos

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/1680

Breeds Dec 1 to Aug 31

Lewis's Woodpecker Melanerpes lewis

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408

Breeds Apr 20 to Sep 30

Long-billed Curlew Numenius americanus

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511

Breeds Apr 1 to Jul 31

Olive-sided Flycatcher Contopus cooperi

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

https://ecos.fws.gov/ecp/species/3914

Breeds May 20 to Aug 31

Sage Thrasher Oreoscoptes montanus

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9433

Breeds Apr 15 to Aug 10

White Headed Woodpecker Picoides albolarvatus

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9411

Breeds May 1 to Aug 15

Willow Flycatcher Empidonax traillii

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3482

Breeds May 20 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (III)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

- 1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
- 2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (=)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (1)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

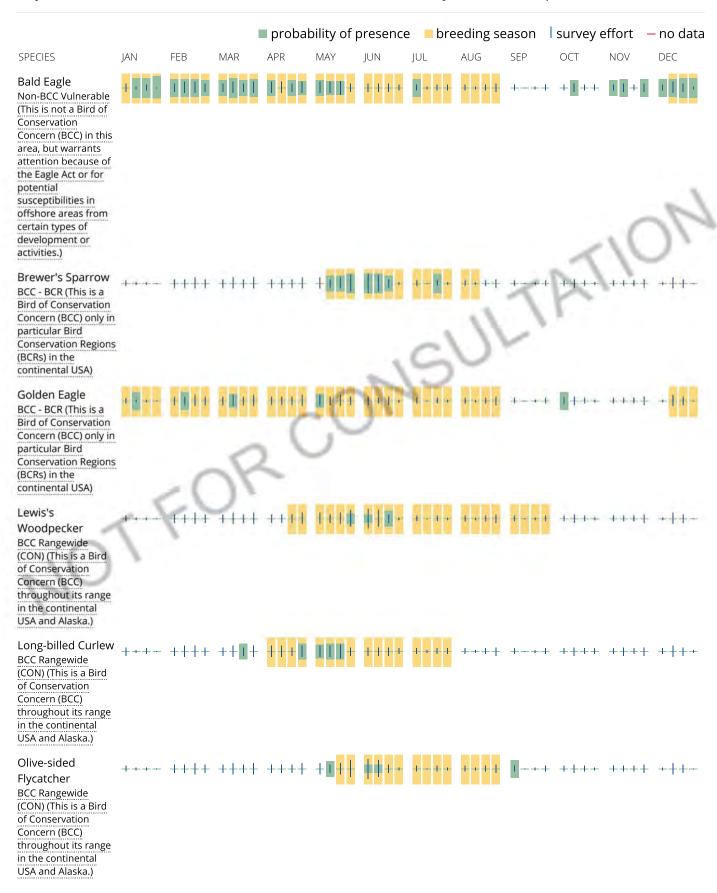
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

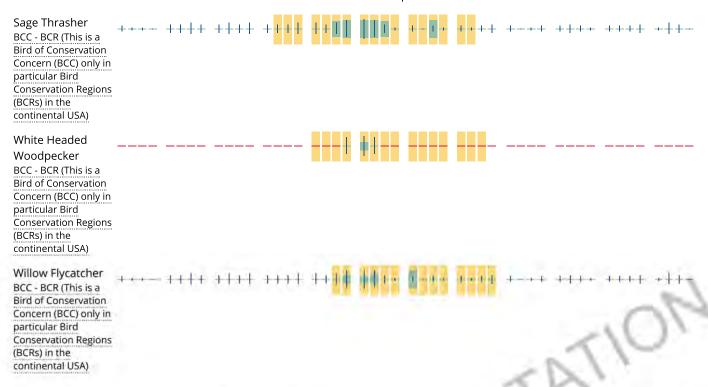
No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS <u>Birds of Conservation Concern (BCC)</u> and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the <u>Avian Knowledge Network</u> (<u>AKN</u>). The AKN data is based on a growing collection of <u>survey</u>, <u>banding</u>, <u>and citizen science datasets</u> and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (<u>Eagle Act</u> requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the <u>E-bird Explore Data Tool</u>.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the <u>Avian Knowledge Network (AKN)</u>. This data is derived from a growing collection of <u>survey, banding, and citizen science datasets</u>.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

- "BCC Rangewide" birds are <u>Birds of Conservation Concern</u> (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
- 2. "BCC BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
- "Non-BCC Vulnerable" birds are not BCC species in your project area, but appear on your list either because
 of the <u>Eagle Act</u> requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from
 certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the <u>Diving Bird Study</u> and the <u>nanotag studies</u> or contact <u>Caleb Spiegel</u> or <u>Pam Loring</u>.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to <u>obtain a permit</u> to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the <u>National Wildlife Refuge</u> system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to <u>NWI wetlands</u> and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local <u>U.S. Army Corps of Engineers District</u>.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

PEM1C

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.



SOURCE DATASET: PHSPlusPublic Query ID: P181018144214

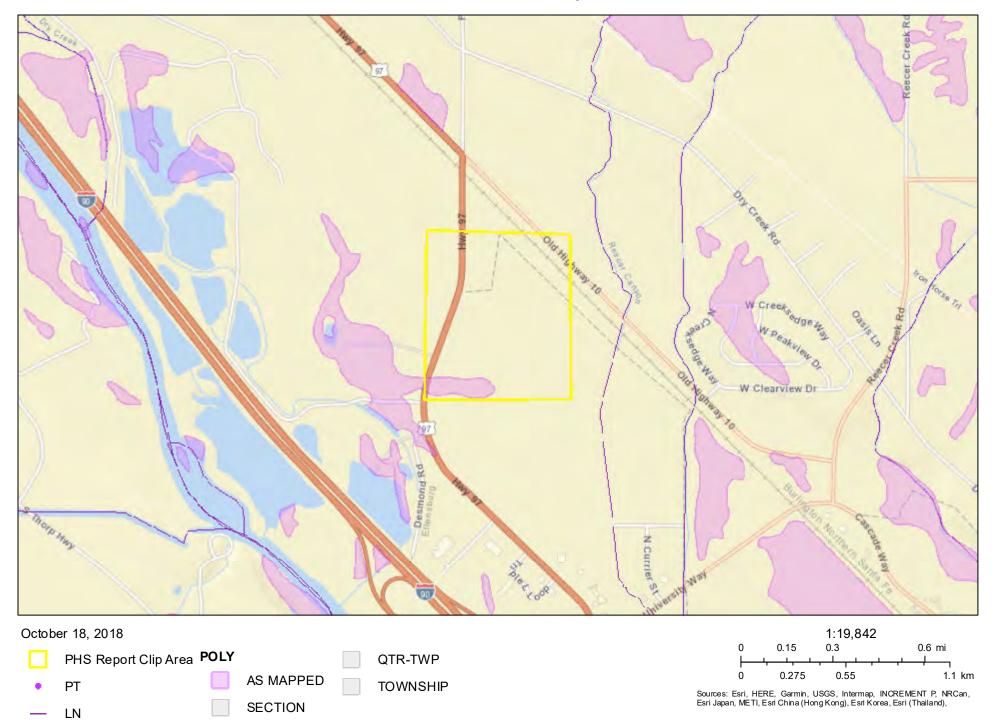
REPORT DATE: 10/18/2018 2.42

Common Name Scientific Name Notes	Site Name Source Dataset Source Record Source Date	Priority Area Occurrence Type More Information (URL) Mgmt Recommendations	Accuracy	Federal Status State Status PHS Listing Status	Sensitive Data Resolution	Source Entity Geometry Type
Freshwater Emergent	N/A NWIWetlands	Aquatic Habitat Aquatic habitat	NA	N/A N/A	N AS MAPPED	US Fish and Wildlife Service Polygons
		http://www.ecy.wa.		PHS Listed		

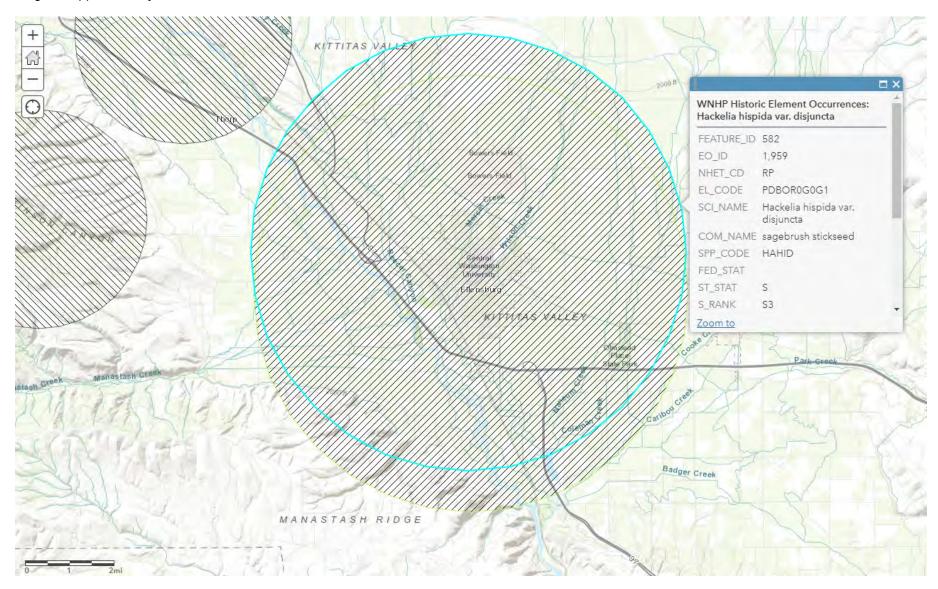
DISCLAIMER. This report includes information that the Washington Department of Fish and Wildlife (WDFW) maintains in a central computer database. It is not an attempt to provide you with an official agency response as to the impacts of your project on fish and wildlife. This information only documents the location of fish and wildlife resources to the best of our knowledge. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to WDFW biologists, or in areas for which comprehensive surveys have not been conducted. Site specific surveys are frequently necessary to rule out the presence of priority resources. Locations of fish and wildlife resources are subject to vraition caused by disturbance, changes in season and weather, and other factors. WDFW does not recommend using reports more than six months old.

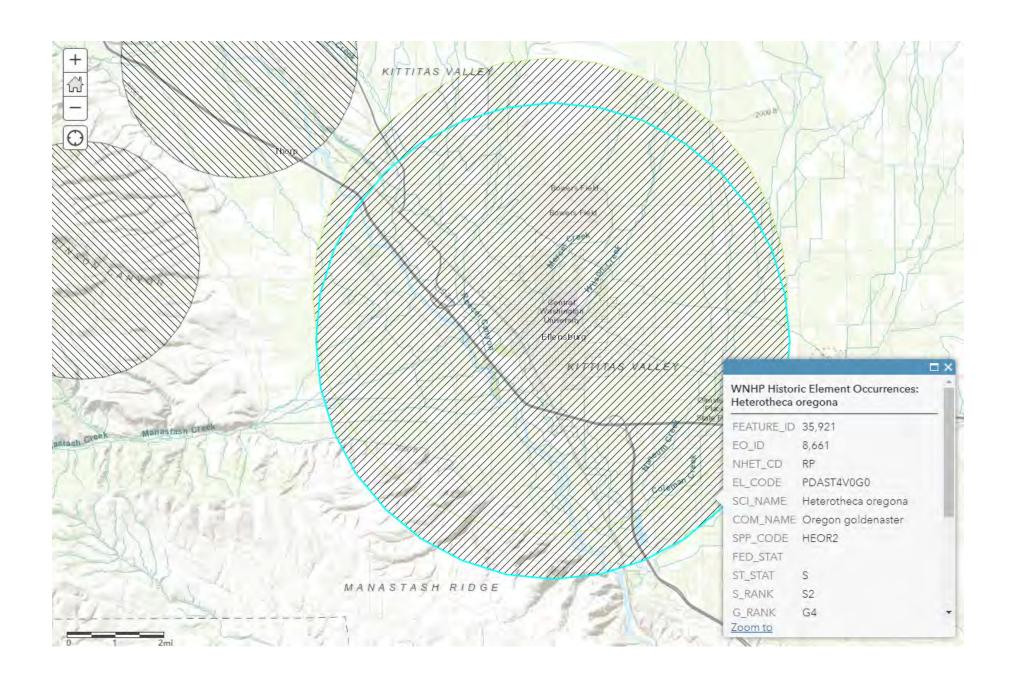
10/18/2018 2.42

WDFW Test Map



WNHP Historic Rare Plant Element Occurrences. No current element occurrences of rare plant species. Nearest current occurrence is Heterotheca oregona, approximately 7.5 miles to the northwest.





Appendix F Plant Species Observed List

Plant Species Observed List Kittitas County Waste Transfer Station Site October 25-26, 2018

Family	Scientific Name	Common Name	Native	Non-native	Washington State Weed Designation ^a
Asteraceae	Cirsium arvense	Canada thistle		Х	
	Conyza canadensis	Canadian horseweed	Х		
	Hypochaeris radicata	hairy cat's ears		Х	
	Senecio jacobaea	tansy ragweed		Х	С
	Taraxicum officinale	dandelion		Х	
Brassicaceae	Rorippa curvisiliqua	curvepod yellowcress	Х		
Cyperaceae	Carex amplifolia	bigleaf sedge	Х		
Fabaceae	Melilotus officinalis	sweetclover		Х	
	Trifolium arvense	rabbitfoot clover		Х	
	Trifolium repens	white clover		Х	
Geraniaceae	Erodium cicutarium	redstem stork's bill		Х	
Juncacea	Juncus effusus	common rush	Х		
Lemnaceae	Lemna minor	common duckweed	Х		
Malvaceae	Malva neglecta	common mallow		Х	
Plantaginaceae	Plantago lanceolata	narrowleaf plantain		Х	
Poacea	Agrostis stolonifera	creeping bentgrass		Х	
	Bromus tectorum	cheatgrass		Х	
	Festuca idahoensis	Idaho fescue	Х		
	Phalaris arundinaceae	reed canarygrass		Х	
	Poa pratensis	Kentucky bluegrass		Х	
Polygonaceae	Rumex salicifolius	willow dock	Х		
Ranunculaceae	Nasturtium officinale	watercress		х	
	Ranunculus sceleratus	celery-leaved buttercup	Х		
Salicaceae	Salix sp.	willow dock	Х		
Scrophulariaceae	Verbascum thapsus	common mullein		Х	
	Veronica americana	American brookline	Х		
Typhaceae	Typha latifolia	cattail	Х		

^aSource: Chapter 16-750 WAC STATE NOXIOUS WEED LIST AND SCHEDULE OF MONETARY PENALTIES

[•] Class A noxious weeds are those noxious weeds not native to the state that are of limited distribution or are unrecorded in the state and that pose a serious threat to the state

[•] Class B noxious weeds are those noxious weeds not native to the state that are of limited distribution or are unrecorded in a region of the state and that pose a serious threat to that region.

^{• &}quot;Class B designate" means those Class B noxious weeds whose populations in a region or area are such that all seed production can be prevented within a calendar year.

[•] Class C are any other noxious weeds. (3) Any county noxious weed control board may enhance the clarity of any definition contained in subsection

Appendix C Site Plan Map

