Exhibit H: Response to Clean Water Services Comments and Clean Water Services Site

Assessment, including Oregon Department of State Lands Concurrence Reports (WD # 2017-0008 and WD #2018-0040)

Willamette Water Supply Our Reliable Water

DATE: August 31, 2020

TO: Stacy Benjamin

Clean Water Services (CWS)

FROM: Ethan Rosenthal, David Evans and Associates, Inc. (DEA)

SUBJECT: Response to CWS comments regarding Water Treatment Plant Service Provider Application

(CWS File #20-0001896)

CC: Lindsey Obermiller (CWS); Christina Walter, Willamette Water Supply Program (WWSP);

Matt Gribbins (WWSP); Corianne Burnett (WWSP); Suzanne Carey (DEA)

Introduction

This memorandum provides a response to comments received from Clean Water Services (CWS) regarding the Service Provider Letter application submitted for the Willamette Water Supply Program (WWSP) Water Treatment Plant (WTP) (CWS file #20-0001896). CWS comments are provided in italic text with responses provided thereafter.

Comment and Response

1) Please provide a slope analysis in accordance with Chapter 3.14.4 of our standards for the vegetated corridor along the west side of wetland G, and be sure the figure meets our standard scale requirements of 1 inch = 60 feet or less.

A slope analysis is provided in the attached updated Figure 2, which now includes an overview figure similar to the previous submittal. In addition, Figure 2 sheets have been focused in so that 1 inch = 60 feet.

2) Please label the square feet of vegetated corridor to be permanently impacted adjacent to wetlands A, B, D, E and F on the proposed development figure.

The requested information is provided on the revised Figure 3 (attached).

3) The project proposes permanent impact to Good condition vegetated corridor and is therefore required to address the Tier 2 alternatives analysis approval standards in Chapter 3.07.4b and c. You can keep the wetland functional analysis fairly brief since wetland impacts have already been permitted, but the Tier 2 analysis will need to include minimization for proposed encroachment for the educational overlook, and the project will also need to demonstrate a public benefit to water quality. One way that applicants can choose to provide this benefit is to provide VC mitigation above the minimum 1:1 required ratio.

A Tier 2 alternatives analysis is provided in this memorandum after this Comment and Response section. As part of demonstrating public benefit to water quality related to the proposed vegetated corridor (VC) encroachment, the WWSP is proposing mitigation at just over a 1.5:1 ratio. Additional details are provided in the Tier 2 analysis.

4) Can the proposed vegetated corridor mitigation area be moved closer to the impact location to provide a more meaningful buffer between the proposed development and the sensitive area?

The proposed vegetated corridor mitigation area has been moved as requested and is shown on the revised Figure 3.

Tier 2 Alternatives Analysis

The following Tier 2 alternatives analysis is provided for the proposed permanent impact (1,476 square feet) to the VC associated with Wetland G. The proposed impact is associated with a proposed forest overlook, which is intended to be used for environmental education purposes. Although the impact is sited in the outer portion of the VC, need for a Tier 2 analysis is triggered due to the VC currently being in "good" condition based on CWS rating criteria.

Tier 2 requirements are provided in italics text, with responses provided in non-italics text.

3.07.4 b. Submittal Requirements

Unless specifically waived in writing by the District, the applicant shall submit the following information with the Standard Site Assessment required in Section 3.02.2:

1. Description of why the encroachment is needed including rejected alternatives that would result in less encroachment.

The encroachment is needed to provide a forest overlook that will be used for environmental education purposes. The overlook is situated within unique Oregon oak (*Quercus garryana*) forest habitat bordering a large kolk pond/wetland associated with the historic ice age floods. The overlook is sited across from the proposed WTP offices and visitor reception area. The intent is to have interpretative signage that leads from the visitor reception area and to the forest overlook and describes the natural history of the area along with the story of the community's water supply system. The overlook has been designed to avoid disturbance to the larger trees in the area and minimize disturbance to the smaller trees.

Alternative locations for the forest overlook were considered but rejected as follows:

- <u>Placement of the overlook closer to the kolk pond</u>. The intent of this alternative was to
 provide an overlook of the kolk pond; however, this was rejected since it would have resulted
 in greater impact to high quality habitat adjacent to the kolk pond. This increased impact
 would have occurred due to the increased length of disturbance within the VC as well as due
 to more complicated construction since the overlook would have extended into very steep
 rocky terrain.
- Placement of the overlook further north along the VC edge. This alternative would have placed the overlook roughly in the area of the proposed mitigation shown in revised Figure 3. Although this would have mostly avoided the VC, it would have required impacts to several large oak trees and associated high quality habitat. In addition, placing the overlook further to the north would put it past the WTP security boundary and therefore would have put many more limitations on visitation by the public, with all visits requiring WTP staff escort. This was deemed impractical.
- 2. Functional Analysis Report, as described in Section 3.14.7

A wetland functional assessment was conducted for Wetland G as part of the wetland permitting efforts. The functional assessment used the Oregon Wetland Assessment Protocol (ORWAP). The results are provided as an attachment to this memorandum.

3.07.04.c. Criteria for Acceptance

Acceptance of the encroachment proposed as part of a Tier 2 Alternatives Analysis shall be based on meeting all the following criteria:

3. The proposed encroachment area is mitigated in accordance with Section 3.08.2.

The proposed mitigation meets this requirement. Mitigation will be on-site, which typically requires a 1:1 mitigation ratio for impacts to good condition VC. The WWSP is proposing mitigation at a ratio of 1.5:1 in order to provide additional public benefit.

4. The replacement mitigation protects the functions and values of the Vegetated Corridor and Sensitive Area.

The proposed mitigation meets this requirement. Mitigation will protect an area of high-quality forest habitat adjacent to existing VC that provides additional buffering from the adjacent proposed WTP. Furthermore, mitigation will occur at a 1.5:1 ratio, which will further protect functions and values.

5. Enhancement of the replacement area, if not already in Good Corridor Condition, and either the remaining Vegetated Corridor on the site or the first 50 feet of width closest to the resource, whichever is less, to a Good Corridor Condition.

The replacement mitigation area is already in good condition as is the existing VC surrounding Wetland G. Therefore, no additional enhancement activities are proposed.

6. A District Stormwater Connection Permit is likely to be issued based on proposed plans.

The WWSP has coordinated with CWS stormwater staff and designed the WTP to meet CWS stormwater standards. Therefore, a stormwater connection permit is likely to be issued.

7. Location of development and site planning minimizes incursion into the Vegetated Corridor.

The WWSP design team has gone through great lengths to completely avoid impacts to the VC associated with Wetland G as it relates to the primary components of the WTP. The only unavoidable incursion is due to the proposed forest overlook, which will provide an important public benefit. The forest overlook has been sited to reduce habitat impacts to the greatest extent possible, while still providing a safe, secure, and meaningful natural history learning experience.

8. No practicable alternative to the location of the development exists that will not disturb the Sensitive Area or Vegetated Corridor.

As described in the various responses above, no practicable alternative to the location of the forest overlook exists that would not disturb Wetland G or its VC.

9. The proposed encroachment provides public benefits.

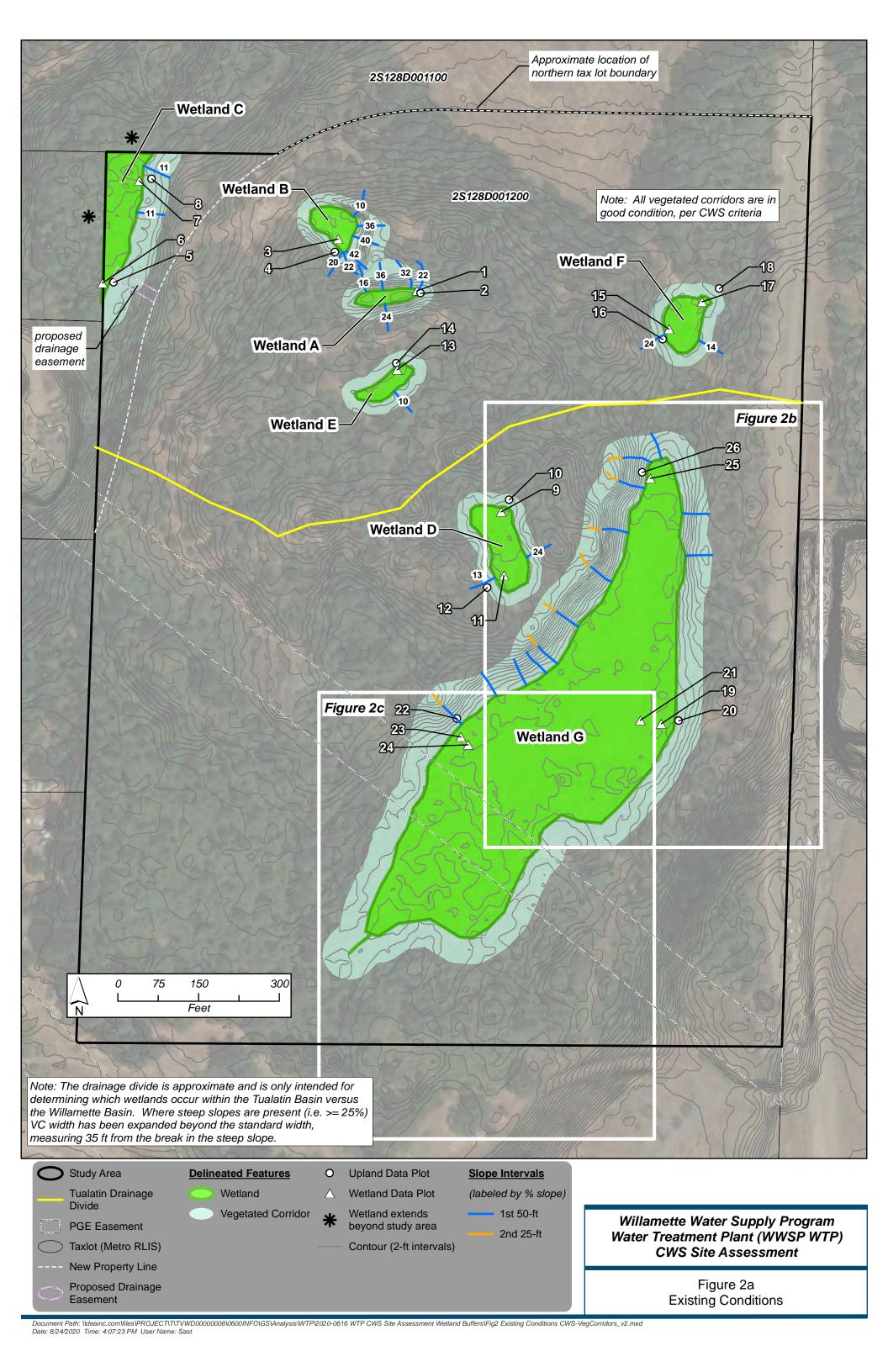
The proposed encroachment provides the following public benefits:

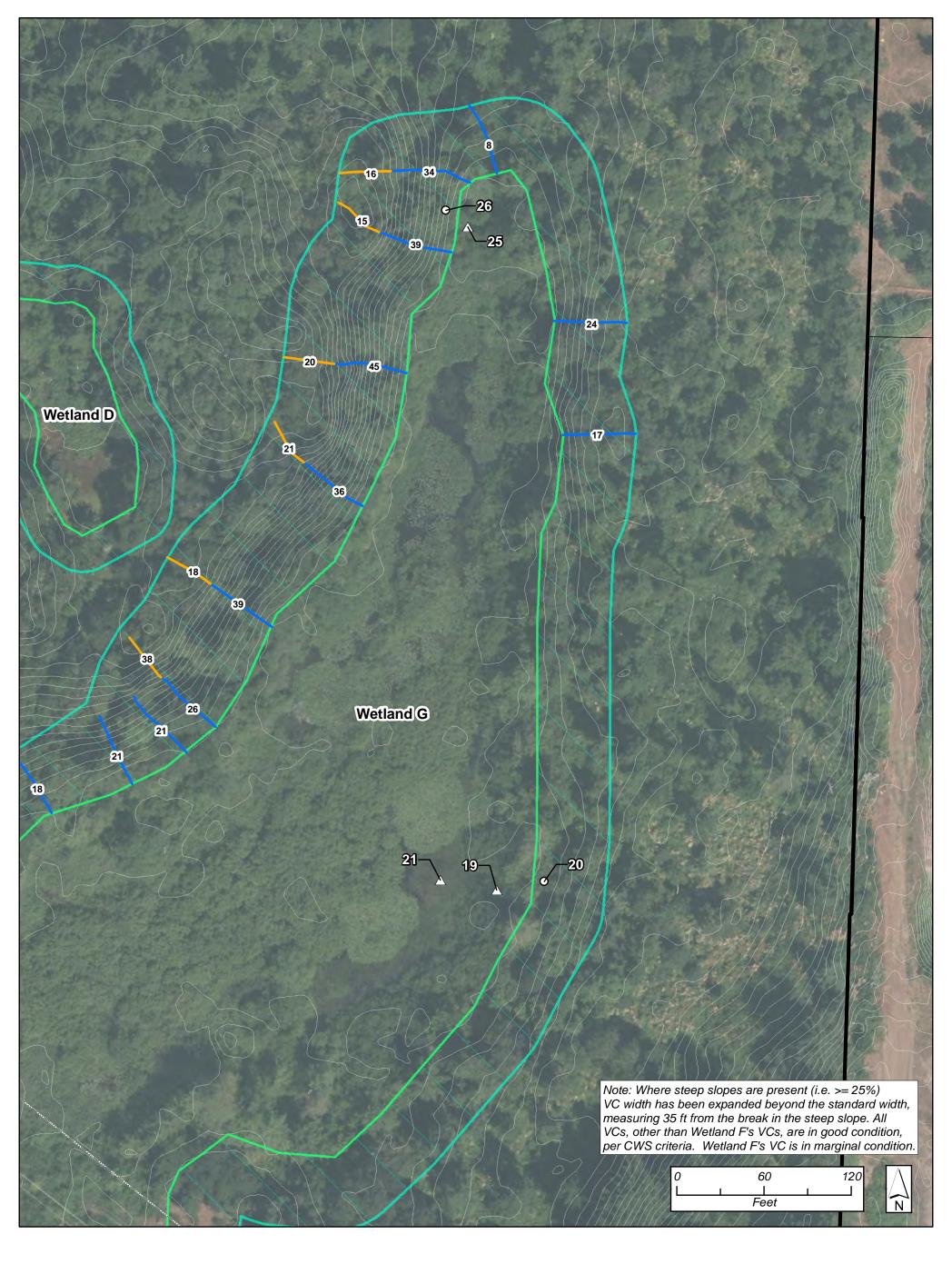
- <u>Environmental education opportunity</u>: The forest overlook will provide opportunities for the public, including school environmental education programs, to learn about the unique natural history of the site (e.g. unique landscape formed by the historic ice age floods).
- <u>Increased water quality protection through a net increase in VC</u>: The WWSP proposes to mitigate the permanent impact of 1,476 square feet of VC by expanding the VC by 2, 215 square feet (1.5:1 mitigation ratio). This will result in a net increase in the VC surrounding Wetland G, thereby, providing additional buffer protections to this unique type of wetland.

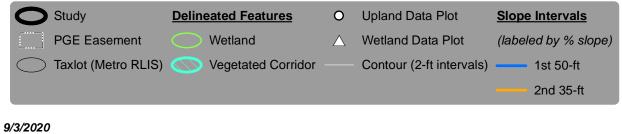
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Attachments:

Revised Figure 2 – Existing Conditions Revised Figure 3 –Proposed Conditions Wetland G Functional Assessment



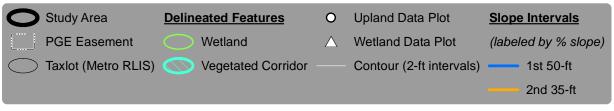




Willamette Water Supply Program
Water Treatment Plant (WWSP WTP)
CWS Site Assessment

Figure 2b Existing Conditions - Wetland G

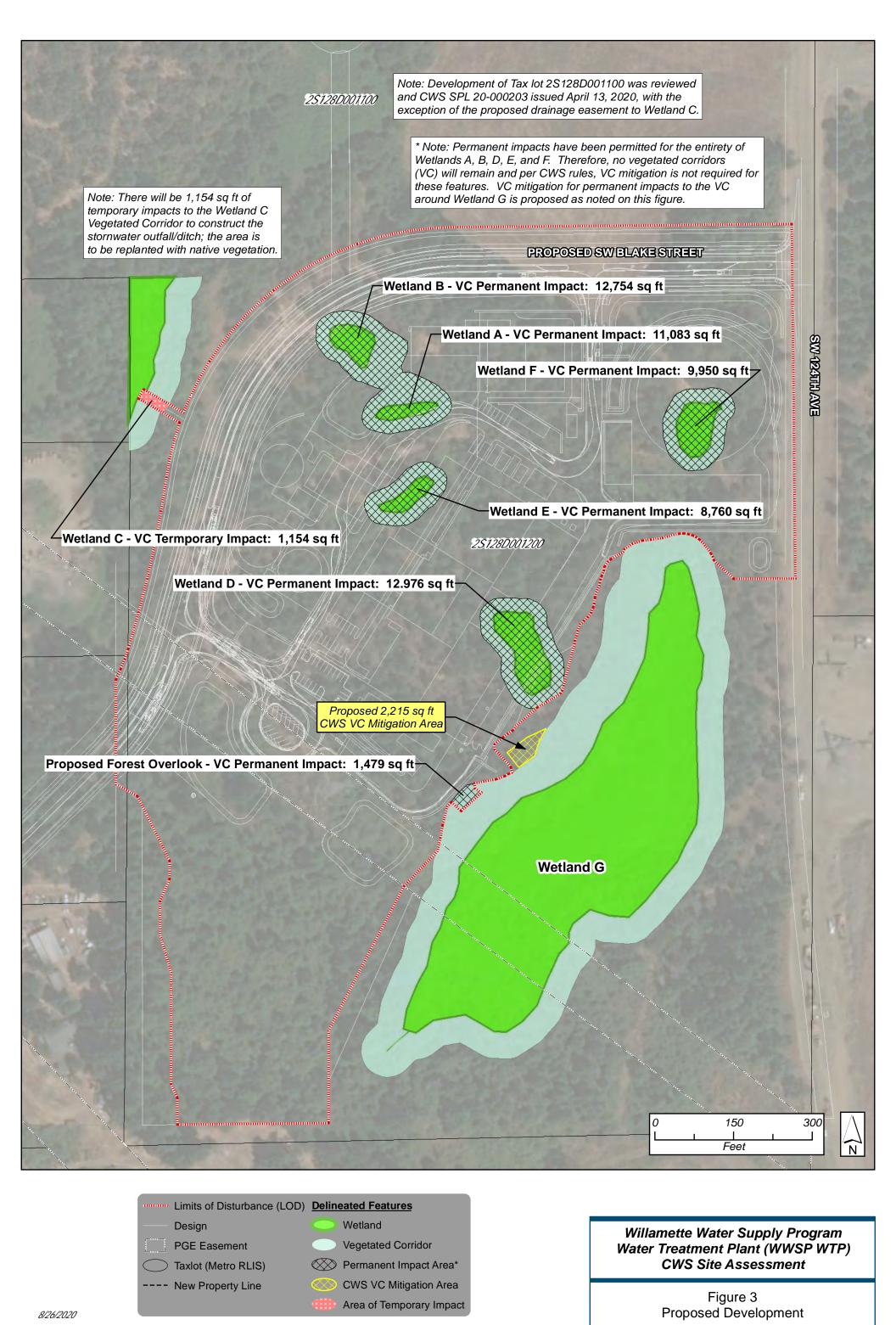




9/3/2020

Willamette Water Supply Program
Water Treatment Plant (WWSP WTP)
CWS Site Assessment

Figure 2c Existing Conditions - Wetland G



CoverPg: Basic Description of Assessment	2012
Site Name:	WWSS WTP, Wetland G
Investigator Name:	Vingiello, Macklin, Rosenthal
Date of Field Assessment:	11/4/2016
County:	Washington
Nearest Town:	Sherwood
Latitude (decimal degrees):	45.363544
Longitude (decimal degrees):	-122.808707
TRS, quarter/quarter section and tax lot(s)	T2S R1W S28, TL 100
Approximate size of the Assessment Area (AA, in acres)	4.7
AA as percent of entire wetland (approx.)	100
If delineated, DSL file number (WD #) if known	none
Soil Map Units within the AA (list these in approx. rank order by area, from WSS web site or published county survey; see manual)	Xerochrepts-Rock outcrop complex
Soil Map Units surrounding and contiguous to the AA (list all present in approx. rank order by area; see manual)	Saum silt loam, 7 to 12 percent slopes Saum silt loam, 20 to 30 percent slopes
Cowardin Systems & Classes (indicate all present, based on field visit and/or aerial imagery): Systems: Palustrine =P, Riverine =R, Lacustrine =L, Estuarine =E Classes: Emergent =EM, Scrub-Shrub =SS, Forested =FO, Aquatic Bed (incl. SAV) =AB, Open Water =OW, Unconsolidated Bottom =UB, Unconsolidated Shore =US	PEM, PSS, PFO, PUB
HGM Class (Scores worksheet will suggest a class; see manual section 2.4.2)	Depressional
If tidal, the tidal phase during most of visit:	N/A
What percent (approx.) of the wetland were you able to visit?	75
What percent (approx.) of the AA were you able to visit?	75
Have you attended an ORWAP training session? If so, indicate approximate month & year.	Yes, greater than 5 years
How many wetlands have you assessed previously using ORWAP (approx.)?	36
Comments about the site or this ORWAP assessment (attach extra page if de	sired):

ORWAP SCORES SHEET	version 2.0.2 May 2012
Site Name:	WWSS WTP, Wetland G
Investigator Name:	Vingiello, Macklin, Rosenthal
Date of Field Assessment:	11/4/2016

	Relative Effectiveness of	Relative Values
Specific Functions:	the Function	of the Function
Water Storage & Delay (WS)	3.25	3.33
Sediment Retention & Stabilization (SR)	10.00	3.88
Phosphorus Retention (PR)	10.00	4.61
Nitrate Removal & Retention (NR)	10.00	4.36
Thermoregulation (T)	0.00	0.00
Carbon Sequestration (CS)	2.01	
Organic Matter Export (OE)	0.00	
Aquatic Invertebrate Habitat (INV)	7.95	7.20
Anadromous Fish Habitat (FA)	0.00	4.89
Non-anadromous Fish Habitat (FR)	6.02	6.67
Amphibian & Reptile Habitat (AM)	7.20	4.67
Waterbird Feeding Habitat (WBF)	4.89	4.67
Waterbird Nesting Habitat (WBN)	5.54	3.50
Songbird, Raptor, & Mammal Habitat (SBM)	5.28	4.67
Pollinator Habitat (POL)	7.88	3.06
Native Plant Diversity (PD)	6.18	7.00

GROUPED FUNCTIONS	Group Scores (functions)	Group Scores (values)	
Hydrologic Function (WS)	3.25	, ,	(identical to Water Storage and Delay function and value scores)
Water Quality Group (WQ)	10.00		(maximum of scores for SR, PR, NR, and T)
Carbon Sequestration (CS)	2.01		(identical to Carbon Sequestration score above)
Fish Support Group (FISH)	6.02	6.67	(maximum of scores for FA and FR)
Aquatic Support Group (AQ)	7.95		(maximum of scores for OE, AM, INV, WBF, and WBN)
Terrestrial Support Group (TERR)	7.88	7.00	(maximum of scores for PD, POL, and SBM)
Public Use & Recognition (PU)		10.00	(click on this cell to see this attribute defined)
Provisioning Services (PS)		0.00	(click on this cell to see this attribute defined)

OTHER ATTRIBUTES	
Wetland Ecological Condition (CQ)	7.22
Wetland Stressors (STR)	0.96
Wetland Sensitivity (SEN)	10.00

HGM Class - Relative Probabilities (select max)	1
Estuarine	0.00
Riverine	0.50
Slope	2.50
Flat	4.32
Depressional	14.72
Lacustrine	0.00

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WILLAMETTE WATER SUPPLY SYSTEM

Sensitive Areas and Vegetated Corridors Site Assessment Report

Water Treatment Plant Site

Prepared for:



Prepared by:



David Evans and Associates, Inc. 2100 SW River Parkway Portland, Oregon 97201

July 2020

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		,	

1 INTRODUCTION

The Willamette Water Supply System (WWSS) has been identified by the Tualatin Valley Water District (TVWD), the City of Beaverton (Beaverton), and the City of Hillsboro (Hillsboro) — collectively referred to as the Partners — as the next infrastructure project to deliver drinking water to municipalities in Washington County by developing the mid-Willamette River at Wilsonville as an additional water supply source. TVWD has been designated the Managing Agency for the WWSS Commission, and TVWD operates the Willamette Water Supply Program (WWSP) to plan, design, and construct the WWSS.

This report covers the study area for the proposed Willamette Water Supply System Water Treatment Plant (WWSS WTP or WTP), inclusive of the proposed Blake Street alignment on the north and west sides of the WTP site and a small drainage easement onto the adjacent tax lot. The site is located in Washington County, Oregon (Township 2 South, Range 1 West, Section 28D, Willamette Meridian; tax lot ID 2S128D001200). See Appendix A, Figure 1, Figure 2, and Figure 3. The site is within the city limits of Sherwood and regional Urban Growth Boundary. It is designated Employment Industrial on the City of Sherwood Comprehensive Plan and Zoning Map.

2 LANDSCAPE SETTING AND RESOURCE OVERVIEW

The nearly 50-acre study area is located in the City of Sherwood, south of SW Tualatin-Sherwood Road, and between Dahlke Lane and SW 120th Avenue. SW 124th Avenue runs along the east property boundary and a farmed field lies north of the study area. A Portland General Electric (PGE) power line easement corridor crosses diagonally through the study area, appears to be maintained occasionally, and generally consists of shrub habitat. Several trails and local access routes are present on the WTP site, including some that were established to support past geotechnical work and other site development investigations.

The site resides along a drainage divide between tributaries of the Tualatin River Basin and tributaries to the Willamette River Basin (Appendix A, Figure 2). The northwestern portion of the site drains to a wetland that then drains north to an off-site tributary to Hedges Creek. Hedges Creek is a tributary to the Tualatin River. The southern and much of the eastern portions of the site drain southward to upland and a large kolk pond wetland that appears to be part of the Coffee Lake Creek subbasin. However, there is no direct surface water connection to Coffee Lake Creek. The Coffee Lake Creek subbasin drains to the Willamette River.

Much of the site is densely wooded with undulating topography and rocky outcroppings. Open areas, typically resulting from past disturbance, are vegetated by non-native grasses and Himalayan blackberry (*Rubus armeniacus*) thickets. Delineated wetlands were observed in depressions and are further described in Section 4.

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Much of the site, particularly areas north of the PGE easement, is forested with native Oregon oak/madrone (*Quercus garryana/Arbutus menziesii*) forest, with patches of Douglas fir (*Pseudotsuga menziesii*). Poison oak (*Toxicodendron diversilobum*) is pervasive in the understory. Most of this forested area lies over very thin soils with depth to bedrock occurring two feet or less below the surface. This area of shallow soils is part of the Tonquin Scablands geologic formation, which developed as a result of historic ice age floods that stripped away top soil and carved out what are known as "kolk" wetland features in the general area roughly 15,000 years ago (Washington County 1983 and Metro 2013).

Washington County (1983) describes the site and general surroundings as follows:

"This scoured upland east of the Rock Creek channel is the only major "scabland" not already destroyed by quarrying (northeast of the site) or committed to it by recent decisions (southeast). The parcels involved are ...2S1 28D tax lots 100 and 900...Again, the legal lots are not conterminous with the geologic feature, but do encompass it. The most prominent features—depressions and knobs—are located in the central eastern part of the described area. Small portions of the area have been quarried or otherwise significantly altered. The northern portion of this site has a 3 ½ acre wetland, apparently seasonal, below one of the flood spillways. It is located between two knolls, the western one having a dwarf oak and madrone woodland on cliffs above the seasonal pond...."

Oak woodlands are a "strategy habitat" type for the Willamette Valley Ecoregion as part of the larger Oregon Conservation Strategy (ODFW 2016). This habitat type has become quite rare in the Willamette Valley, predominantly as a result of land clearing and fire suppression. Without fire, this habitat type often can eventually transition to dominance by Douglas fir. Historically, natural wildfire and fires set by native peoples helped to maintain more of this community type on the landscape by setting back successional processes. In the case of the subject property, it is believed that the very shallow soils have helped to maintain the oak woodland community, with only deeper soil areas showing a clear transition to Douglas fir dominated forest. The shallow soils are also believed to have resulted in the oak community taking on a stunted growth pattern, with many of the trees growing relatively short and narrow. However, some larger oaks with wide crown spread are present on-site, presumably where deeper soils allow for more typical growth patterns.

3 METHODS

This section describes the methods used to conduct the site assessment work.

3.1 WETLAND DELINEATION

Wetland areas were delineated on November 3 and 4, 2016 following the Level 2 Routine On-Site Method described in the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (USACE 2010). This method requires an area to possess a prevalence of hydrophytic vegetation, hydric soils, and wetland hydrology. Under

normal circumstances, positive indicators of each of these three parameters must be present for an area to satisfy the criteria for jurisdictional wetlands.

A follow up delineation was conducted on December 22, 2017 to cover a small portion of the site that was not accessible during the 2016 effort. The 2016 effort identified this area as having a potential wetland based on off-site methods (e.g., topographic depression shown Lidar contours); however, the 2017 delineation determined through on-site methods that this area lacked wetlands.

The Oregon Department of State Lands (DSL) reviewed the 2016 and 2017 delineation efforts and concurred with the findings. DSL concurrence letters (DSL identification WD2017-0008 and WD2018-0040, for 2016 and 2017 delineation field reviews respectively) are provided in Appendix B. Note that the WD2018-0040 concurrence includes other WWSS project areas beyond the WTP site, which are not relevant to this report. Relevant wetland delineation data sheets are provided in Appendix C.

3.2 CLEAN WATER SERVICES VEGETATED CORRIDORS

Field work for the Clean Water Services (CWS) Vegetated Corridor documentation occurred during the same dates noted for the wetland delineation field work. CWS Vegetated Corridors were mapped based on guidance in CWS' design and construction standards Resolution & Order (R&O) 19-22 Chapter 3 – Sensitive Areas and Vegetated Corridors (CWS 2019). CWS guidance typically specifies a 50-foot buffer around most wetlands and waterways. However, if slopes greater than or equal to 25 percent are encountered, then the buffer is required to be extended to the top of slope, plus up to an additional 35 feet. The extension of the buffer due to steep slopes is required up to a maximum buffer width of 200 feet. Small isolated wetlands may only have a Vegetated Corridor width of 25 feet, unless steep slopes are present. Two-foot contour LIDAR topography was used.

4 WATER QUALITY SENSITIVE AREAS (WETLANDS AND WATERWAYS)

Seven wetlands were delineated in the study area (Wetlands A, B, C, D, E, F, and G) and are described below. Their locations are shown on Figure 2 (Appendix A). No other waters (e.g., creeks) occur within the study area. Appendix D provides a photo log of wetland and Vegetated Corridor features.

4.1 WETLAND A

Wetland A (0.1 acre) was delineated in the north central portion of the study area. The wetland is isolated in a depression, roughly half of which is surrounded by rocky slopes and rock overhangs. Wetland A would be classified as a palustrine scrub-shrub wetland with some forested canopy based on the Cowardin classification system (Cowardin et al. 1979). Wetland A is dominated by hardhack (*Spiraea douglassii*), Oregon ash (*Fraxinus latifolia*), Pacific crabapple (*Malus fusca*), and slough sedge (*Carex obnupta*). Also present in the wetland plant community were swamp rose (*Rosa pisocarpa*) and Pacific willow (*Salix lasiandra*).

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4.2 WETLAND B

Wetland B (0.1 acre) was delineated northwest of Wetland A in the northwest portion of the study area. The wetland is isolated in a depression, consists largely of unvegetated ponded water over 2 feet deep, and is surrounded by rocky outcroppings, steep rock faces, and boulders. Wetland B would be classified as a palustrine unconsolidated bottom wetland (Cowardin et al 1979). The vegetated portion of Wetland B was dominated by reed canarygrass (*Phalaris arundinacea*), colonial bentgrass (*Agrostis capillaris*), and swamp rose. Wetland vegetation generally occurred in patches of soil within the inundated perimeter.

4.3 WETLAND C

Wetland C (0.3 acre) lies in the far northwest corner of the study area and continues off-site to the north and east. This wetland lies on the adjacent tax lot to the proposed water treatment plant. It appears to flow northeasterly (off-site) and constitutes "Oregon ash swale" habitat in some stretches. Wetland C would be classified as a palustrine forested and scrub-shrub wetland (Cowardin et al 1979). The wetland is dominated by Oregon ash trees and swamp rose, hardhack, and slough sedge. Standing water and saturation were present throughout the wetland during the site visit.

4.4 WETLAND D

Wetland D (0.2 acre) occurs near the center of the study area and is a closed depression with standing water. Wetland D is a palustrine scrub-shrub wetland but also has a large palustrine unconsolidated bottom component of open water (Cowardin et al. 1979). The scrub-shrub component was dominated by hardhack, Pacific crabapple, and swamp rose.

4.5 WETLAND E

Wetland E (0.1 acre) is located near the center of the study area and is an inundated closed depression. Wetland E would be classified as a palustrine scrub-shrub wetland (Cowardin et al. 1979). The wetland is dominated by hardhack with smaller amounts of Nootka rose (*Rosa nutkana*), Pacific crabapple, and Oregon white oak. Roughly 6 inches of ponded water was observed throughout much of the wetland during the site visit.

4.6 WETLAND F

Wetland F (0.2 acre) occupies a closed depression in the northeast portion of the study area. It would be classified primarily as palustrine forested wetland, with some areas of palustrine scrubshrub and emergent (Cowardin et al. 1979). Dominant plant species include Oregon ash, cluster rose (Rosa pisocarpa), Douglas spirea (Spiraea douglasii), snowberry (Symphoricarpos albus), colonial bentgrass (Agrostis capillaris), and toad rush (Juncus bufonius).

4.7 WETLAND G

Wetland G (4.7 acres) is a large depression with three different palustrine plant communities occurring in roughly concentric circles: forested along the wetland/upland boundary, scrub-shrub, and emergent vegetation in the central inundated areas. Dominant plant species included: Pacific willow, hardhack, swamp rose, Pacific crabapple, tall mannagrass (*Glyceria striata*), and cattail (*Typha latifolia*). Some portions of the center of Wetland G would be considered unconsolidated bottom (i.e., unvegetated seasonal open water). The deeper portions of the wetland are estimated to pond seasonally roughly 3 feet deep during the wet winter and spring months but may dry out during late summer. The boundary along the western side of the wetland had relatively steep rocky terrain with slopes up to 100% from between 5 and 30 feet from the wetland boundary. The remainder of the wetland had gentler slopes with wider wetland transition areas.

5 VEGETATED CORRIDORS

Vegetated Corridors are shown on Figure 2 (Appendix A), along with the slope measurements used to determine the outer edge of the corridors. Summary characteristics of each Vegetated Corridor, as identified by the associated wetland name, are provided in Table 1. Additional details follow thereafter.

•	•			
Vegetated Corridor's Associated Wetland	Minimum Width Rationale	Minimum Width (ft)	Extended for Steep Slopes?	Condition
Wetland A	< 0.5 acres and isolated	25	Yes	Good
Wetland B	< 0.5 acres and isolated	25	Yes	Good
Wetland C	Not isolated	50	No	Good
Wetland D	< 0.5 acres and isolated	25	No	Good
Wetland E	< 0.5 acres and isolated	25	No	Good
Wetland F	<0.5 acres and isolated	25	No	Marginal
Wetland G	>=0.5 acres	50	Yes	Good

Table 1. Vegetated Corridor Characteristics Summary

The overall project site has two distinct plant community types: Oregon white oak woodland and Douglas fir forest. However, within the Vegetated Corridors, these communities were typically found mixed together and are therefore described as a single community – mixed oak/conifer woodland. A description of this plant community, along with a representative species list for each Vegetated Corridor area, is presented below.

5.1 MIXED OAK/CONIFER WOODLAND

This plant community occurs in all of the Vegetated Corridors, with some shifts in dominance between Oregon white oak and Douglas fir trees. Note that the tables below, based on findings at upland plot locations associated with the wetland delineation efforts, underrepresent the amount of poison oak found in the area due to the efforts to avoid dense patches of this hazardous plant

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species. Species and their associated percent cover data, in the tables below, are taken directly from the associated wetland delineation plot data forms (Appendix C). Where more than one upland plot was used to delineate the wetland boundary, only the most representative plot of the overall Vegetated Corridor was used. An exception to this was for the Vegetated Corridor around Wetland G, which included two representative plots due to its large size. In a few instances, plot data from the wetland delineation report was modified to be more reflective of the overall plant community in the Vegetated Corridor. Areas where this occurred have been noted in table captions.

As represented in Tables 2 through 9, the Vegetated Corridors are almost all in good condition, having high percent tree canopy cover, high native species diversity and percent cover, and overall low percent cover by invasive species. An exception to this was the Vegetated Corridor around Wetland F, which rated as marginal due to percent cover of tree canopy being less than 50 percent. Vegetation was removed in a portion of this Vegetated Corridor to allow for geotechnical investigations by a prior property owner. Further afield from the wetlands and Vegetated Corridors, percent cover by invasive species tends to be low with the exception of areas adjacent to access routes and other previously disturbed areas where Himalayan blackberry (*Rubus armeniacus*) thickets can be found. In the tables below the stratum column refers trees (T), shrubs (S), and herbaceous (H) species.

Table 2. Mixed Oak/Conifer Woodland (VC surrounding Wetland A, Plot 2)

Scientific Name	Common Name	% Cover	Stratum	Status
Arbutus menziesii	Pacific madrone	25	Т	Native
Crataegus douglasii	Douglas hawthorne	10	Т	Native
Pseudotsuga menziesii	Douglas fir	60	Т	Native
Gaultheria shallon	Salal	35	S	Native
Mahonia nervosa	Oregon grape	30	S	Native
Polypodium glycyrrhiza	Licorice fern	5	Н	Native
Rubus ursinus	Trailing blackberry	10	Н	Native
Total		175		

Canopy Cover = 95%

Non-native, Noxious or Invasive = 0%

Condition = Good

Native = 100%

Table 3. Mixed Oak/Conifer Woodland (VC surrounding Wetland B, Plot 4)

Scientific Name	Common Name	% Cover	Stratum	Status
Pseudotsuga menziesii	Douglas fir	40	Т	Native
Quercus garryana	Oregon white oak	20	Т	Native
Amalanchier alnifolia	Serviceberry	60	S	Native
Toxicodendron diversilobum	Poison oak	Trace	S	Native
Geranium molle	Dovefoot geranium	40	Н	Non-native
Polypodium glycyrrhiza	Licorice fern	60	Н	Native
Rubus ursinus	Trailing blackberry	5	Н	Native
Total		225		

Canopy Cover = 60% Non-native, Noxious or Invasive = 18%

Condition = Good Native = 82%

Table 4. Mixed Oak/Conifer Woodland (VC surrounding Wetland C, Plot 5)

Scientific Name	Common Name	% Cove	er Stratum	Status
Arbutus menziesii	Pacific madrone	10	Т	Native
Prunus emarginata	Bitter Cherry	35	Т	Native
Pseudotsuga menziesii	Douglas fir	15	Т	Native
Corylus cornuta	Hazelnut	10	S	Native
Gaultheria shallon	Salal	25	S	Native
Holodiscus discolor	Oceanspray	15	S	Native
Symphoricarpos albus	Snowberry	10	S	Native
Geranium molle	Dovefoot geranium	5	Н	Non-native
Rubus ursinus	Trailing blackberry	10	Н	Native
Total		135		

Tree Canopy Cover = 60% Non-native, Noxious or Invasive = 4%

Condition = Good Native = 96%

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Table 5. Mixed Oak/Conifer Woodland (VC surrounding Wetland D, Plot 10-modified for VC)

Scientific Name	Common Name	% Cover	Stratum	Status
Arbutus menziesii	Pacific madrone	25	T	Native
Pseudotsuga menziesii	Douglas fir	40	Т	Native
Quercus garryana	Oregon white oak	15	Т	Native
Amalanchier alnifolia	Serviceberry	10	S	Native
Gaultheria shallon	Salal	40	S	Native
Holodiscus discolor	Oceanspray	25	S	Native
Malus fusca	Crabapple	5	S	Native
Geranium molle	Dovefoot geranium	15	Н	Non-native
Polypodium glycyrrhiza	Licorice fern	5	Н	Native
Total		180		

Tree Canopy Cover = 80%

Non-native, Noxious or Invasive = 8%

Condition = Good

Native = 92%

Table 6. Mixed Oak/Conifer Woodland (VC surrounding Wetland E, Plot 14-modified for VC)

Scientific Name	Common Name	% Cover	Stratum	Status
Pseudotsuga menziesii	Douglas fir	25	Т	Native
Quercus garryana	Oregon white oak	30	Т	Native
Amalanchier alnifolia	Serviceberry	30	S	Native
Holodiscus discolor	Oceanspray	30	S	Native
Geranium molle	Dovefoot geranium	30	Н	Non-native
Polypodium glycyrrhiza	Licorice fern	15	Н	Native
Total		160		

Tree Canopy Cover = 55%

Non-native, Noxious or Invasive = 19%

Condition = Good

Native = 81%

Table 7. Mixed Oak/Conifer Woodland (VC surrounding Wetland F, Plot 18-modified for VC)

Scientific Name	Common Name	% Cover	Stratum	Status
Fraxinus latifolia	Oregon Ash	10	Т	Native
Prunus emarginata	Bitter Cherry	20	Т	Native
Quercus garryana	Oregon white oak	15	Т	Native
Amalanchier alnifolia	Serviceberry	10	S	Native
Fraxinus latifolia	Oregon Ash	5	S	Native
Arbutus menziesii	Pacific madrone	10	S	Native
Mahonia aquifolium	Oregon grape	20	S	Native
Rosa nutkana	Nootka rose	15	S	Native
Toxicodendron diversilobum	Poison oak	15	S	Native
Geranium molle	Dovefoot geranium	30	Н	Non-native
Polypodium glycyrrhiza	Licorice fern	20	Н	Native
Total		180		

Tree Canopy Cover = 45%

Non-native, Noxious or Invasive = 17%

Condition = Marginal

Native = 83%

Table 8. Mixed Oak/Conifer Woodland (VC surrounding Wetland G, Plot 20)

Scientific Name	Common Name	% Cover	Stratum	Status
Arbutus menziesii	Pacific madrone	50	Т	Native
Pseudotsuga menziesii	Douglas fir	50	T	Native
Amalanchier alnifolia	Serviceberry	50	S	Native
Corylus cornuta	Hazelnut	20	S	Native
Gaultheria shallon	Salal	20	S	Native
Mahonia aquifolium	Oregon grape	20	S	Native
Malus fusca	Crabapple	10	S	Native
Toxicodendron diversilobum	Poison oak	20	S	Native
Geranium molle	Dovefoot geranium	20	Н	Non-native
Polystichum munitum	Sword fern	30	Н	Native
Pteridium aquilinum	Bracken fern	10	Н	Native
Total		300		

Tree Canopy Cover = 100%

Non-native, Noxious or Invasive = 7%

Condition = Good

Native = 93%

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Table 9. Mixed Oak/Conifer Woodland (VC surrounding Wetland G, Plot 22-modified for VC)

Scientific Name	Common Name	% Cover	Stratum	Status
Arbutus menziesii	Pacific madrone	15	T	Native
Pseudotsuga menziesii	Douglas fir	30	T	Native
Quercus garryana	Oregon white oak	50	Т	Native
Rhamnus pershiana	Cascara	40	T	Native
Amalanchier alnifolia	Serviceberry	10	S	Native
Corylus cornuta	Hazelnut	50	S	Native
Gaultheria shallon	Salal	40	S	Native
Rosa nutkana	Nootka rose	10	S	Native
Symphoricarpos albus	Snowberry	10	S	Native
Toxicodendron diversilobum	Poison oak	5	S	Native
Geranium molle	Dovefoot geranium	15	Н	Non-native
Polypodium glycyrrhiza	Licorice fern	5	Н	Native
Polystichum munitum	Sword fern	30	Н	Native
Total		310		

Tree Canopy Cover = 135%

Non-native, Noxious or Invasive = 5%

Condition = Good

Native = 95%

6 PROJECT IMPACTS AND MITIGATION

6.1 IMPACTS

The WWSP obtained permits from the USACE (permit ID: NWP-2015-0041) and DSL (permit ID: 60102RF Modified) to permanently impact the entirety of Wetlands A, B, D, E, and F. The Vegetated Corridors associated with these wetlands will also be permanently impacted in their entirety. Impacts to these resources were unavoidable in order to fit all the components of the WTP on the property. However, extensive effort was made to fully avoid impacts to the larger wetlands (Wetland C and G) and their diverse and intact Vegetated Corridors. The USACE and DSL permits allowed for impacts to Wetland C; however, based on design changes this impact is now avoided. Additional areas beyond the Vegetated Corridors were also avoided to the extent practicable to further protect valuable upland habitats (Preservation Areas East and West shown on Figure 3, Appendix A).

A minor temporary impact (1,154 square feet) to the Vegetated Corridor associated with Wetland C will occur and is shown on Figure 3 (Appendix A). This impact will result from construction of a stormwater outfall ditch. The disturbed area will be replanted with native forest species in accordance with CWS planting guidelines.

A minor permanent impact (1,476 square feet) will occur to the Vegetated Corridor associated with Wetland G. This will occur along the outer edge of the Vegetated Corridor and is a result of placement of a proposed forest overlook. The overlook is intended to provide educational opportunities about the unique habitats and geology of the area and will include interpretative signage. Alternate placement of this overlook was not feasible due to a combination of topographic constraints, desire to limit impacts to other high-quality upland or riparian (i.e. Vegetated Corridor) habitat. The overlook has also been sited close to the administrative building facilities to allow for easier access by the public, without having to travel through the treatment plant facilities.

6.2 MITIGATION FOR IMPACTS

CWS does not require mitigation for permanently impacted Vegetated Corridors if the associated water quality sensitive area (e.g., wetland) will also be permanently impacted in its entirety. Therefore, no Vegetated Corridor mitigation is proposed for areas associated with Wetlands A, B, D, E, and F. Mitigation for impacts to these wetlands was conducted as part of the USACE and DSL permitting processes and included purchase of mitigation bank credits. The credits offset the loss of wetland functions, values, and acreage. Mitigation banks must undergo a thorough multi-agency review process and be well established before credits are available for sale. The mitigation credit purchase was approved by the Corps and DSL as acceptable mitigation under applicable federal and state statutes as documented in the respective permit authorizations (USACE permit ID: NWP-2015-0041 and DSL permit ID: 60102RF Modified).

Mitigation for the temporary impact to the Wetland C Vegetated Corridor will be in the form of restoring the temporarily disturbed area (1,154 square feet) with native forest vegetation in accordance with CWS standards. Species will be similar to those currently found on site. Landscape design drawings for the overall site are provided in Appendix E.

Mitigation for the permanent impacts to the Wetland G Vegetated Corridor will be provided by expanding the vegetated corridor by 1,548 square feet along its south side as shown on Figure 3, Appendix A.

6.3 REQUIRED ENHANCEMENT

CWS standards 3.06.2 require enhancement of on-site Vegetated Corridors that will not be impacted. However, all remaining on-site Vegetated Corridors already meet the criteria for CWS "good condition" classification, and therefore do not require enhancement.

7 PREPARERS AND CONTRIBUTORS

John Macklin, DEA Biologist, Tony Vingiello, DEA Biologist, and Ethan Rosenthal, DEA Ecologist, performed the site wetland delineations that supported this report. Mr. Rosenthal prepared this report and Mr. Macklin provided quality assurance review. Shawna Hale, DEA Deputy Project

Page 12 July 2020

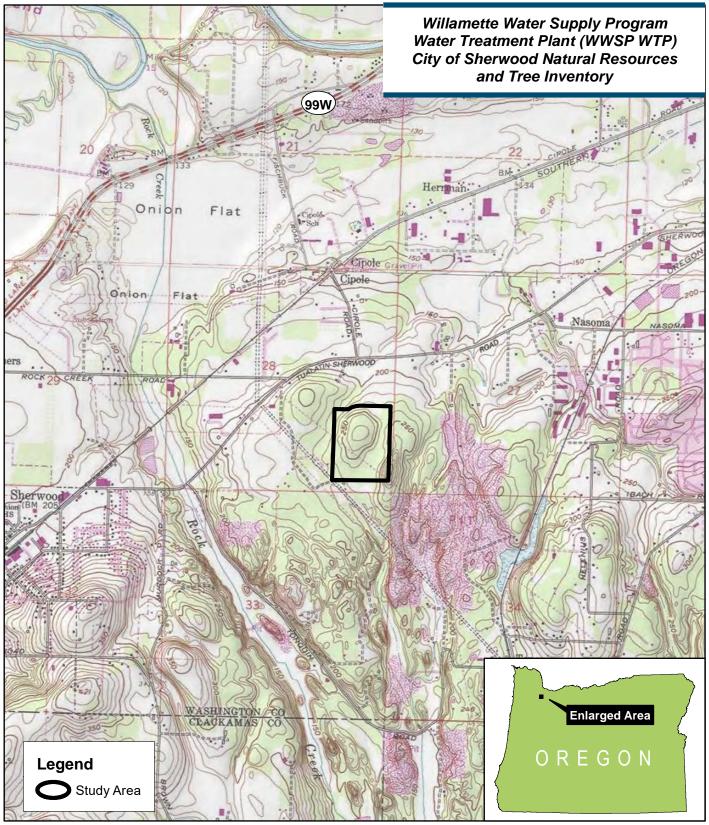
Manager, provided editing assistance. Sara Gilbert, DEA Geographic Information System Specialist, prepared the report graphics.

8 LITERATURE CITATIONS

- Clean Water Services (CWS). 2019. Design and Construction Standards for Sanitary and Surface Water Management.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Oregon Department of Fish and Wildlife (ODFW). 2016. Oregon Conservation Strategy.
- Cowardin, L.M, V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Final Technical Report ERDC/EL TR-10-3, May, 2010. US Army Engineer Research and Development Center, Environmental Laboratory, Vicksburg Mississippi.

APPENDICES

APPENDIX A: FIGURES

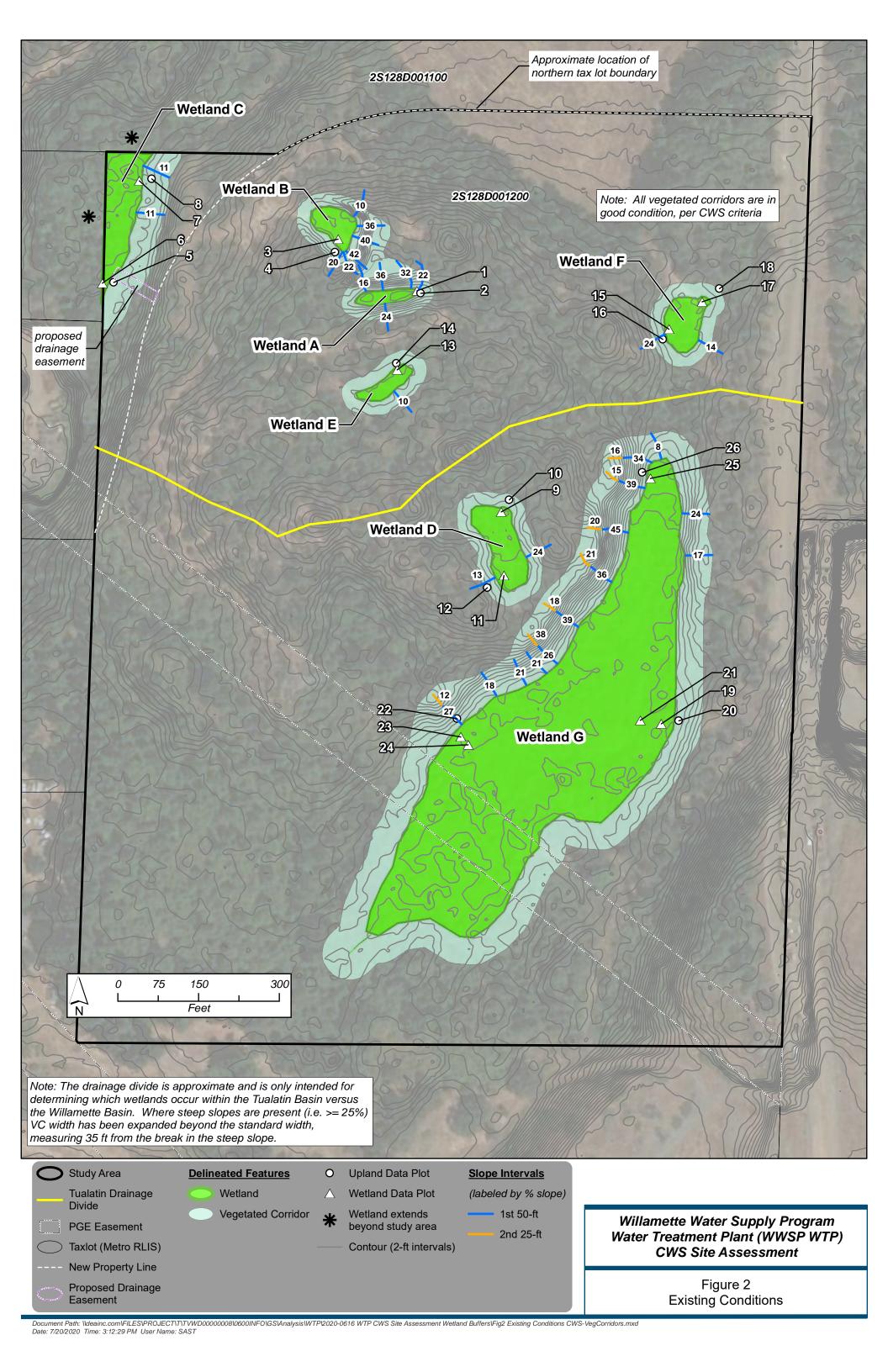


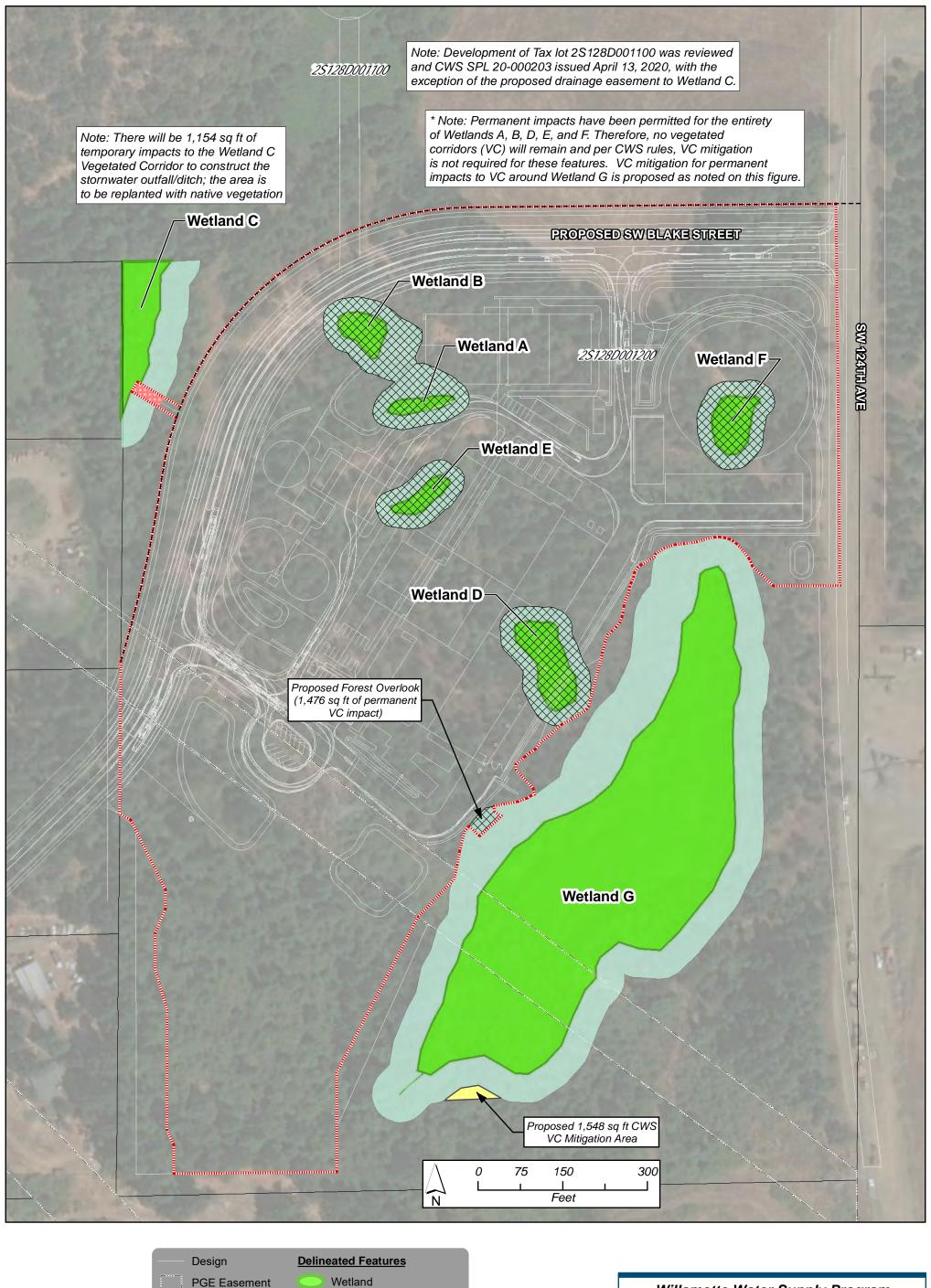
ESRI, ArcGIS Online, USA Topographic Maps. 30x60 GRID Quadrangles

Figure 1 Vicinity Map











Willamette Water Supply Program
Water Treatment Plant (WWSP WTP)
CWS Site Assessment

Figure 3
Proposed Development

APPENDIX B: DSL CONCURRENCE LETTERS



Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279

(503) 986-5200 FAX (503) 378-4844

www.oregon.gov/dsl

State Land Board

Low-Sh

Kate Brown Governor

City of Hillsboro Water Department

Attn: Niki Iverson 150 E. Main Street Hillsboro, OR 97123-4028

Re:

WD # 2017-0008 Wetland Delineation Report for the

Proposed Water Treatment Plant for the Willamette Water

Supply Program Project

Washington County; T2S R1W Sec. 28D, Portion of Tax Lot 100

Dennis Richardson Secretary of State

> Tobias Read State Treasurer

Dear Ms. Iverson:

March 29, 2017

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates, Inc. for the site referenced above. Please note that the study area includes only a portion of the tax lot described above (see the attached map). Based upon the information presented in the report, we concur with the wetland boundaries as mapped in Figure 6 of the report. Within the study area, seven delineated wetlands and one potential wetland (Wetland PW_H) were identified, totaling approximately 6.0 acres.

The wetlands are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands. In addition, due to access issues Wetland PW-H was mapped using offsite wetland determination methods including interpretation of Lidar generated contour topography. Because offsite determination methods are not suitable for removal-fill permitting, it will be necessary to use onsite methods and delineate this area prior to project construction. If subsequent onsite wetland delineation work changes the areas of wetland and wetland impact appreciably, the Department may require an addendum wetland report and a revised permit application.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will review the report and make a determination of jurisdiction for purposes of the Clean Water Act at the time that a permit application is submitted. We recommend that you attach a copy of this concurrence letter to both copies of any subsequent joint permit application to speed application review.

Please be advised that state law establishes a preference for avoidance of wetland impacts. Because measures to avoid and minimize wetland impacts may include reconfiguring parcel layout and size or development design, we recommend that you

work with Department staff on appropriate site design before completing the city or county land use approval process.

This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely.

Peter Ryan, PWS

Jurisdiction Coordinator

Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

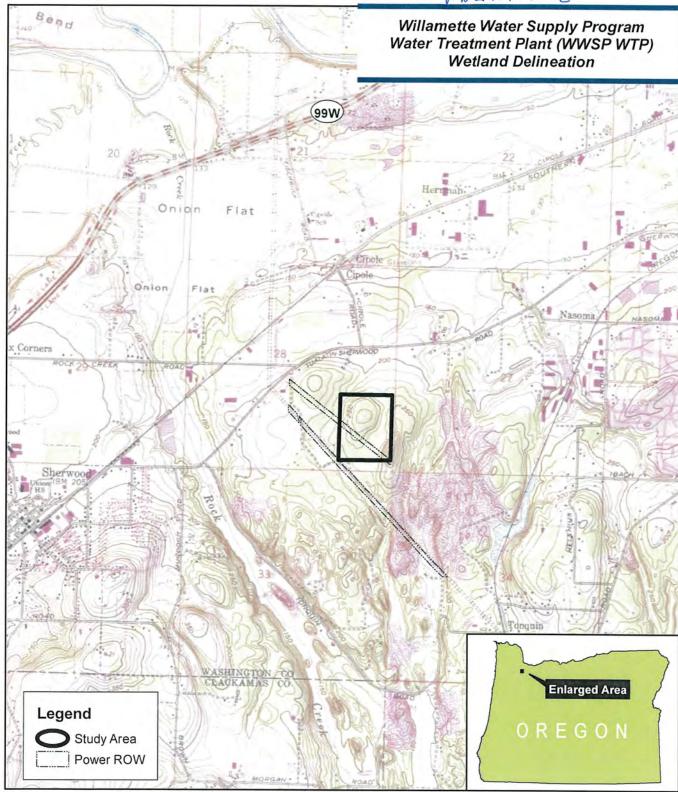
ec: John Macklin, David Evans and Associates, Inc.

Washington County Planning Department

Jaimee Davis, Corps of Engineers Amber Wierck, Clean Water Services

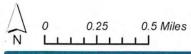
Anita Huffman, DSL

WD2017-0008

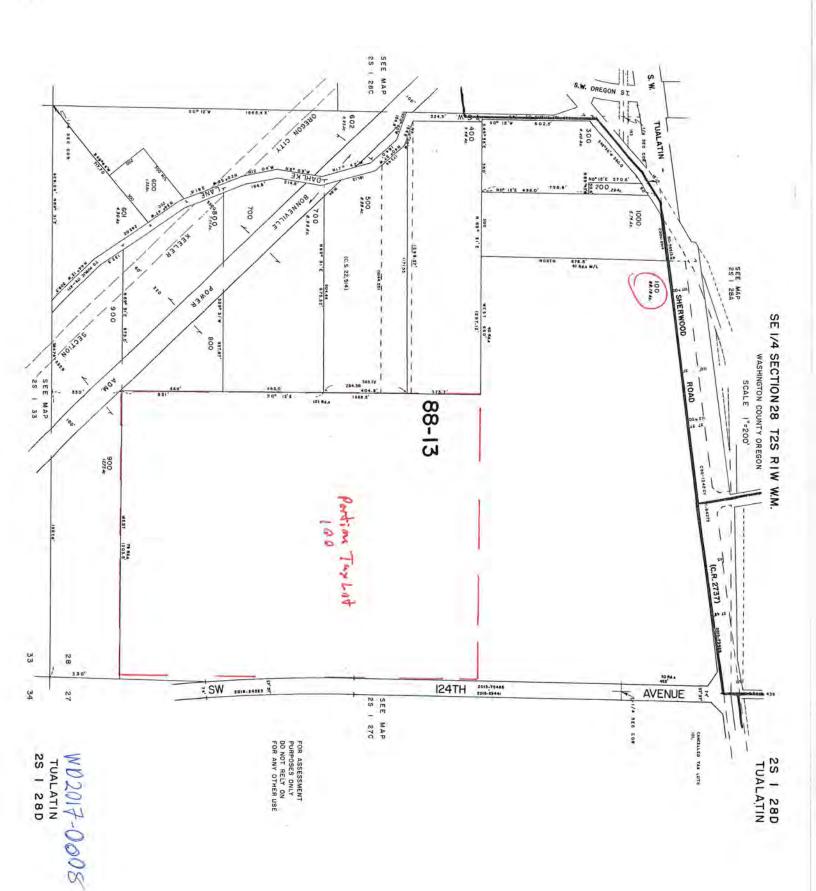


ESRI, ArcGIS Online, USA Topographic Maps. 30x60 GRID Quadrangles

Figure 1 Vicinity Map



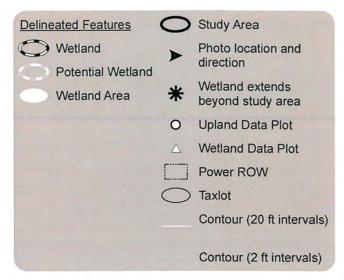




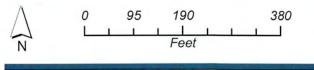
Wetland C-Wetland B 2S128D000400 Wetland F 2S127C000701 Wetland A 2S128D000500 Wetland E 25 2S128D000100 Wetland D-Potential Wetland PW-H 2S128D000700 23 Wetland G 2S127C000800 2S128D000800 2S1W28D -BPA # QM TSQ 2S128D000900

Willamette Water Supply Program Water Treatment Plant (WWSP WTP) Wetland Delineation

Figure 6
Delineated Wetlands



On-site features (wetlands, ditches, streams, culverts, and data plots) were mapped with a Trimble Pathfinder GEO XH receiver with typical accuracy of 3 feet or better. Off-site boundaries are approximate and were mapped based on field review from adjacent public right of way and aerial photo interpretation. An asterisk was included where jurisdictional features, with the exclusion of upland ditches, extend off site. Only taxlots which intersect the study area are labeled. Imagery: USDA NAIP 2016.







Department of State Lands

775 Summer Street NE, Suite 100 Salem, OR 97301-1279 (503) 986-5200 FAX (503) 378-4844 www.oregon.gov/dsl

State Land Board

April 17, 2018

City of Hillsboro Water Department Attn: Niki Iverson, Water Resource Manager 150 E. Main Street Hillsboro, OR 97123-4028 Kate Brown Governor

Dennis Richardson Secretary of State

Re: WD #2018-0040 Wetland Delineation Report for Additional Area

Reviews for the Proposed Willamette Water Supply Program

Clackamas and Washington Counties;

Portions of Multiple Townships, Ranges, Sections and Tax lots

APP #60102

Tobias Read State Treasurer

Dear Ms. Iverson:

The Department of State Lands has reviewed the wetland delineation report prepared by David Evans and Associates for the sites referenced above. Please note that the report includes seven study areas and these areas include only a portion of the tax lots shown on the attached maps. Based upon the information presented in the report and additional information submitted upon request, we concur with the wetland and waterway boundaries as mapped in the revised delineation map figures (Figure 6, Site A - F, and the WTP Site Update). Please replace all copies of the preliminary wetland maps with these final Department-approved maps.

Within the seven study areas, four wetlands (Wetland W-M1-1, W-W1-2, W-M5-9, and F), totaling approximately 0.27 acres, and segments of four waterways [S-M1-1 (Coffee Lake Creek), S-B-1 (tributary to the Tualatin River), S-W2-2 (Rock Creek), and S-4-2 (Beaverton Creek)], were identified. The wetlands and waterways, are subject to the permit requirements of the state Removal-Fill Law. Under current regulations, a state permit is required for cumulative fill or annual excavation of 50 cubic yards or more in wetlands or below the ordinary high-water line (OHWL) of the waterway (or the 2-year recurrence interval flood elevation if OHWL cannot be determined). However, Beaverton and Rock Creeks are both essential salmonid streams; therefore, fill or removal of any amount of material below their OHWL's or within hydrologically-connected wetlands (Wetland F) may require a state permit.

This concurrence is for purposes of the state Removal-Fill Law only. Federal or local permit requirements may apply as well. The Army Corps of Engineers will determine jurisdiction for purposes of the Clean Water Act. This concurrence is based on information provided to the agency. The jurisdictional determination is valid for five years from the date of this letter unless new information necessitates a revision. Circumstances under which the Department may change a determination are found in OAR 141-090-0045 (available on our web site or upon request). In addition, laws enacted by the legislature and/or rules adopted by the Department may result in a change in jurisdiction; individuals and applicants are subject to the regulations that are in effect at the time of the removal-fill activity or complete permit application. The applicant, landowner, or agent may submit a request for reconsideration of this determination in writing within six months of the date of this letter.

Thank you for having the site evaluated. Please phone me at 503-986-5232 if you have any questions.

Sincerely,

Peter Ryan, PWS Jurisdiction Coordinator Approved by

Kathy Verble, CPSS

Aquatic Resource Specialist

Enclosures

ec:

Phil Rickus, David Evans and Associates Clackamas County Planning Department Washington County Planning Department Kinsey Friesen, Corps of Engineers Lindsey Obermiller, Clean Water Services

Anita Huffman, DSL

WETLAND DELINEATION / DETERMINATION REPORT COVER FORM

This form must be included with any wetland delineation report submitted to the Department of State Lands for review and approval. A wetland delineation report submittal is not "complete" unless the fully completed and signed report cover form and the required fee are submitted. Attach this form to the front of an unbound report. A single PDF attachment of the completed cover from and report may be e-mailed to Wetland_Delineation@dsl.state.or.us.

	Business phone # (503) 615-6770 Mobile phone # (optional)
City of Hillsboro Water Department 150 E. Main Street Hillsboro, OR 97123-4028	E-mail: niki.iverson@hillsboro-oregon.gov
Authorized Legal Agent, Name and Address: Nikl Iverson, Water Resource Manager City of Hillsboro Water Department	Business phone # (503) 615-6770 Mobile phone # (optional)
I either own the property described below or I have legal authority property for the purpose of confirming the information in the report Typed/Pginted/Name: Niki Iverson	Signature: WAXIV
Date: 1/23/18 Special instructions regarding site a	access:
Project and Site Information (using decimal degree format	for lat/long.,enter centroid of site or start & end points of linear project)
Project Name: Willamette Water Supply Program Additional Areas, Winter 2017	Latitude: See Attachment Longitude: See Attachment
Proposed Use: Pipeline Installation	Tax Map # See Attachment
Project Street Address (or other descriptive location): 7 Sites between Wilsonville and Hillsboro/Beaverton- See Figure 1	Township Range Section QQ Tax Lot(s) See Attachment
City: See Attachment County: See Attachment	Waterway: Many River Mile: N/A NWI Quad(s): Several
Wetland Deli	neation Information
Phil Rickus David Evans and Associates 2100 SW River Parkway Portland, OR 97201 The information and conclusions on this form and in the attached Consultant Signature:	Mobile phone # E-mail: prr@dealnc.com report are true and correct to the best of my knowledge. Date: January 16, 2018
Primary Contact for report review and site access is 🗵 C	Consultant
Wetland/Waters Present? ☐ Yes ☐ No ☐ Study Area	a size: See Attachment Total Wetland Acreage: See Attachment
Check Box Below If Applicable:	Fees:
R-F permit application submitted	
Mitigation bank site	Fee (\$100) for resubmittal of rejected report
☐ Wetland restoration/enhancement project (not mitigation)☐ Industrial Land Certification Program Site	그는 그 그 그리고 그리고 있다면 그리고 그렇게 그렇게 그렇게 하는 그리고 그 그리고 있다면 다른 얼굴에 그리고 있다.
Reissuance of a recently expired delineation Previous DSL # Expiration date	
Other Information:	YN
las previous delineation/application been made on parcel?	☑ If known, previous DSL # See Report
Does LWI, if any, show wetland or waters on parcel?	☐ See Report
The second secon	ice Use Only
OSL Reviewer: PR Fee Paid Date:	_// DSL WD # 2018-0040_
	oject # DSL Site #
Scanned Final Scan: D DSL WI	N# DSL App. #

Electronic Submittal

WWSP ADDITIONAL AREAS WD2018-0040 UPDATED DELINEATION INFORMATION TABLES

Site	Latitude	Longitude	PLSS	City	County	Study Area Size (acreage)	Wetland Acreage	Water Acreage
Α	45.300856	-122.780067	T3S R1W S22, 23	Wilsonville	Clackamas	4.58	0.08	0.03
В	45.470328	-122.897936	T1S R2W S23		Washington	0.25	0.08	0.001
С	45.431823	-122.878706	T2S R2W S1	Beaverton	Washington	0.92	0.05	
D	45.467799	-122.893679	T1S R2W S23		Washington	0.37	()	
E	45.525420	-122.901504	T1N R2W S35	Hillsboro	Washington	0.91		0.01
F	45.496684	-122.829843	T1S R1W S8	Beaverton	Washington	2.06	0.06	0.03
WTP	45.363563	-122.808718	T2S R1W S28		Washington	2.35	-2	

Site	Work Package ID #	Previous WD#	Reason for Second Look
Α	PLM 1.0	2017-0026	Received Access
В	PLW 1.0	2017-0027	Received Access
С	PLM 5.0	2017-0024	Received Access
D	PLW 1.0	2017-0027	Received Access
E	PLW 2.0	2017-0007	Received Access
F	PLE 1.0	2017-0025	Alignment Shifted
WTP	WTP 1.0	2017-0008	Received Access

Table 1: Summary of Water Resources

Site ID	ID¹	Size in Study Area ²	Assumed Corps JD	Assumed DSL JD	Cowardin Class ³	HGM Class ⁴	Data Plot ID	Notes	
Α	W-M1-1	0.08 acres	Yes	Yes	PEM	Riverine	A-1	Reed canarygrass wetland located below OHWM of Coffee Lake Cr. Extends offsite.	
Α	S-M1-1	0.03 acres	Yes	Yes	-	(=	-	Coffee Lake Creek- OHWM approximately 25' from steep banks, drift lines.	
В	W-W1-2	0.08 acres	Yes	Yes	PEM	Slope	B-1	Swale wetland in SW corner of parcel. Extends offsite.	
В	S-B-1	0.001 acres	Yes	Yes	20	-	Æ	Fully vegetated man-made shallow ditch within a wetland swale that is 1 foot wide. No scour or OHW visible. Flows offsite to north.	
С	W-M5-9	0.05 acres	Yes	Yes	PEM	Slope	C-1	Swale wetland between SW Tile Flat Rd and SW Kobbe Dr. Extends offsite.	
E	S-W2-2	0.01 acres	Yes	Yes	-64		-	Rock Creek. Incised stream, OHWM approximately 25' from steep banks, drift lines.	
F	S-4-2	0.03 acres	Yes	Yes	Ĺ,	4	4	Beaverton Creek. OHWM approximately 25' from steep banks, drift lines, water staining on culverts. Lies on both sides of SW Millikan Rd.	
F	Wetland F	0.06 acres	Yes	Yes	PEM	DEP	F-1	Low area adjacent to railroad tracks. Extends offsite.	

¹⁻W = wetland feature, S =stream feature

²⁻Size in study area is given in acres for wetlands and streams

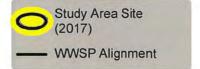
³⁻Cowardin Class: PEM=palustrine emergent

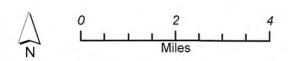
⁴⁻HGM Class: Slope=slope, DEP=depressional, Riverine=riverine flow-through

WD2018-0040

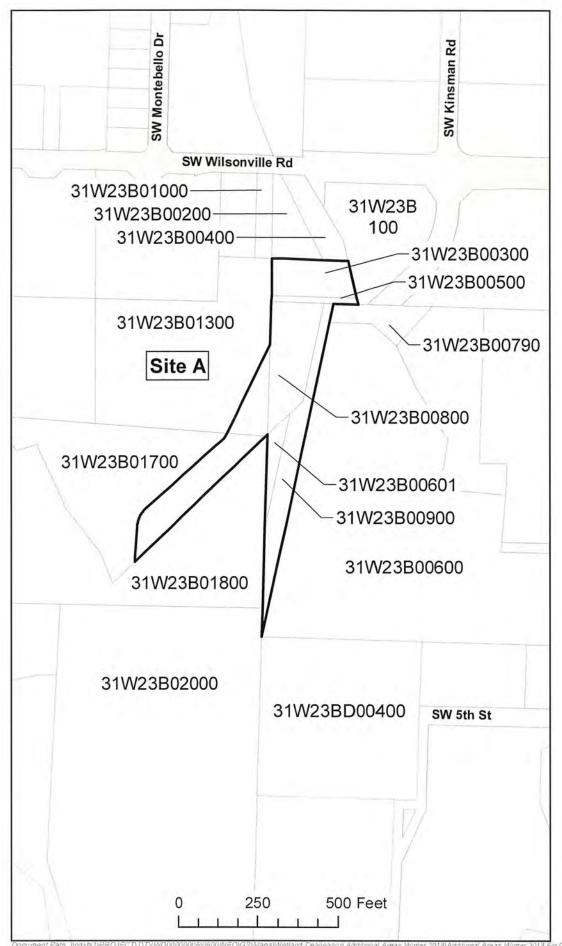
Willamette Water Supply Program Additional Areas Winter 2017 Wetland Delineation

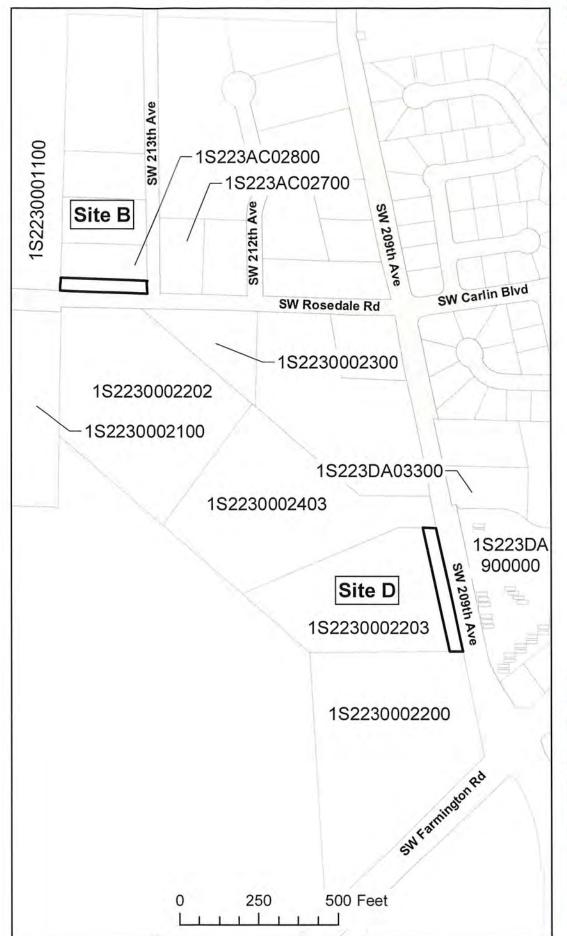
Figure 1 Vicinity Map











WD2018-0040

Willamette Water Supply Program Additional Areas Winter 2017 Wetland Delineation

Figure 2, Sheet 1 of 3
Tax Lots

Legend

Study Area (2017) Tax Lot

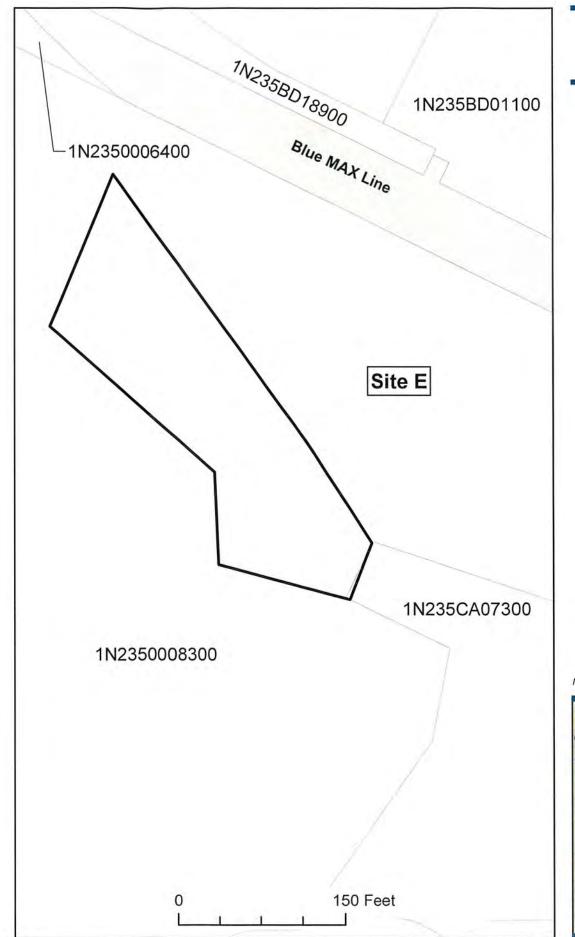


Metro RLIS GIS Data. 2017.



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1S2360001000 1S2360000900 2S2010000800-SW Kobe Dr 2S2010000904 2S2010000902 2S2010000200 282010000905 Site C 2S2010000201 2S2010000800 2S2010000302-250 500 Feet



W02018-0040

Willamette Water Supply Program Additional Areas Winter 2017 Wetland Delineation

Figure 2, Sheet 2 of 3
Tax Lots

Legend

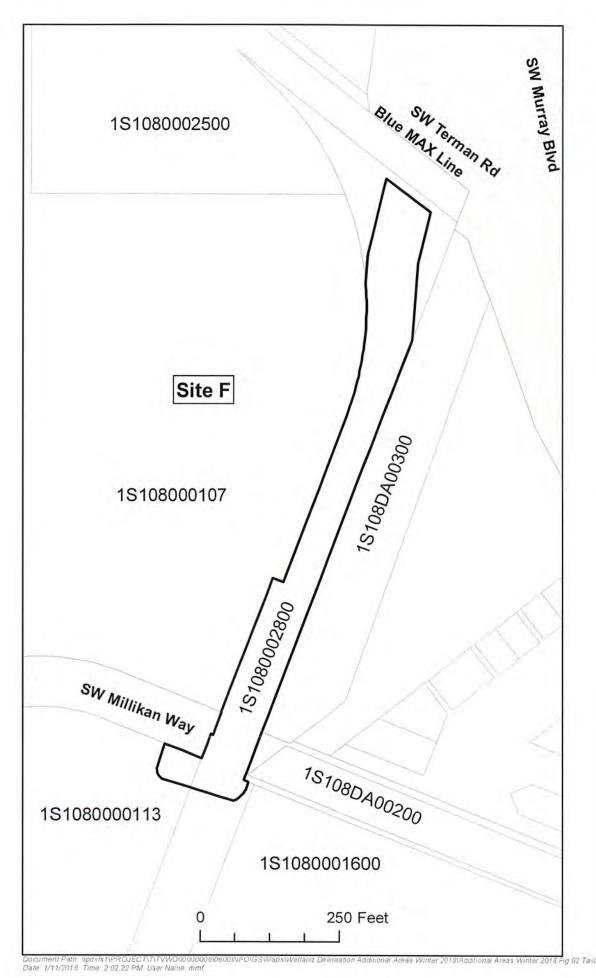
Study Area (2017)
Tax Lot

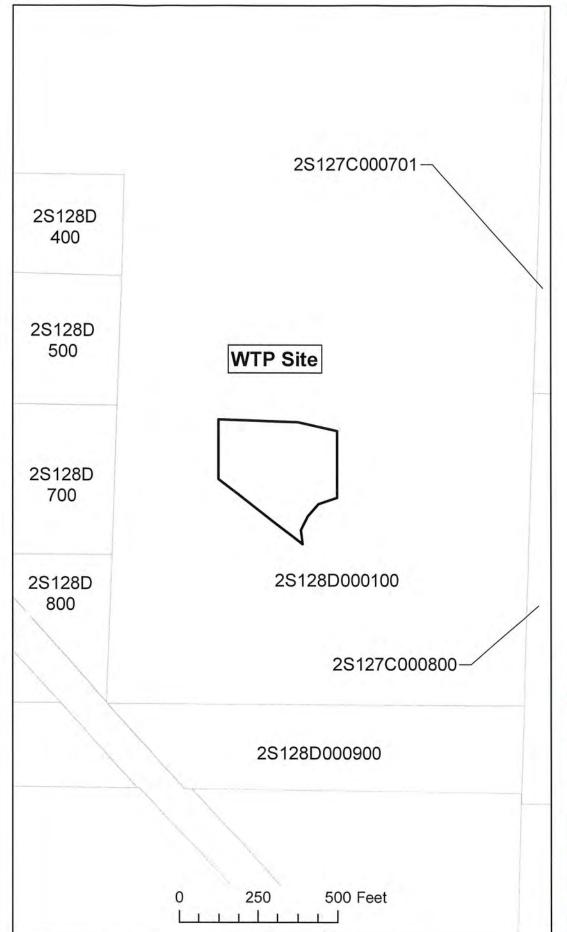


Metro RLIS GIS Data. 2017.



Date 1/17/2018 Time 9:33:23 AM User Name Sast





WD2018-0040

Willamette Water Supply Program Additional Areas Winter 2017 Wetland Delineation

Figure 2, Sheet 3 of 3
Tax Lots

Legend

Study Area (2017)
Tax Lot



Metro RLIS GIS Data. 2017.



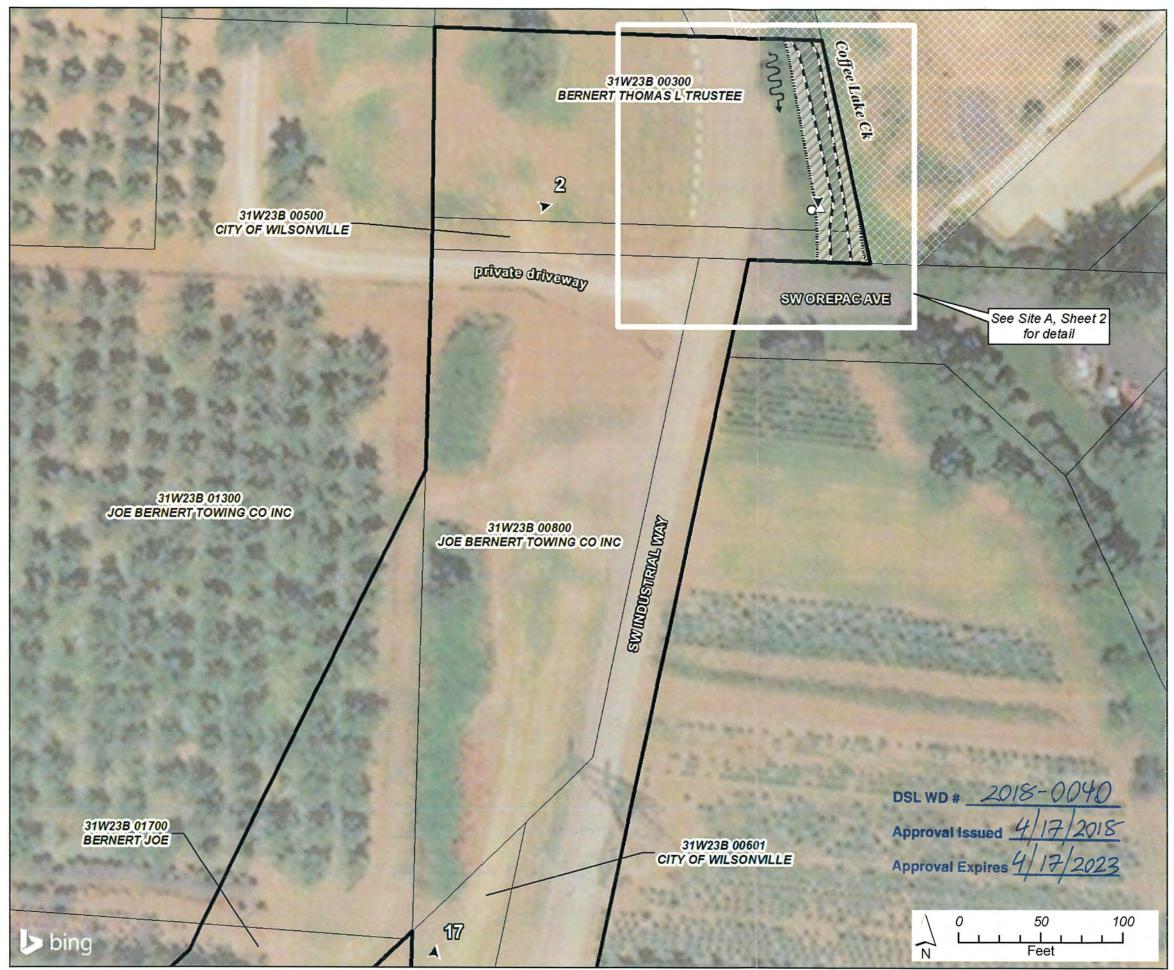
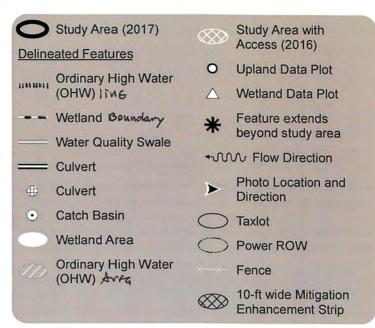


Figure 6, Site A, Sheet 1 of 3

Delineated Wetlands
PLM 1.0, WD2017-0026

Access provided





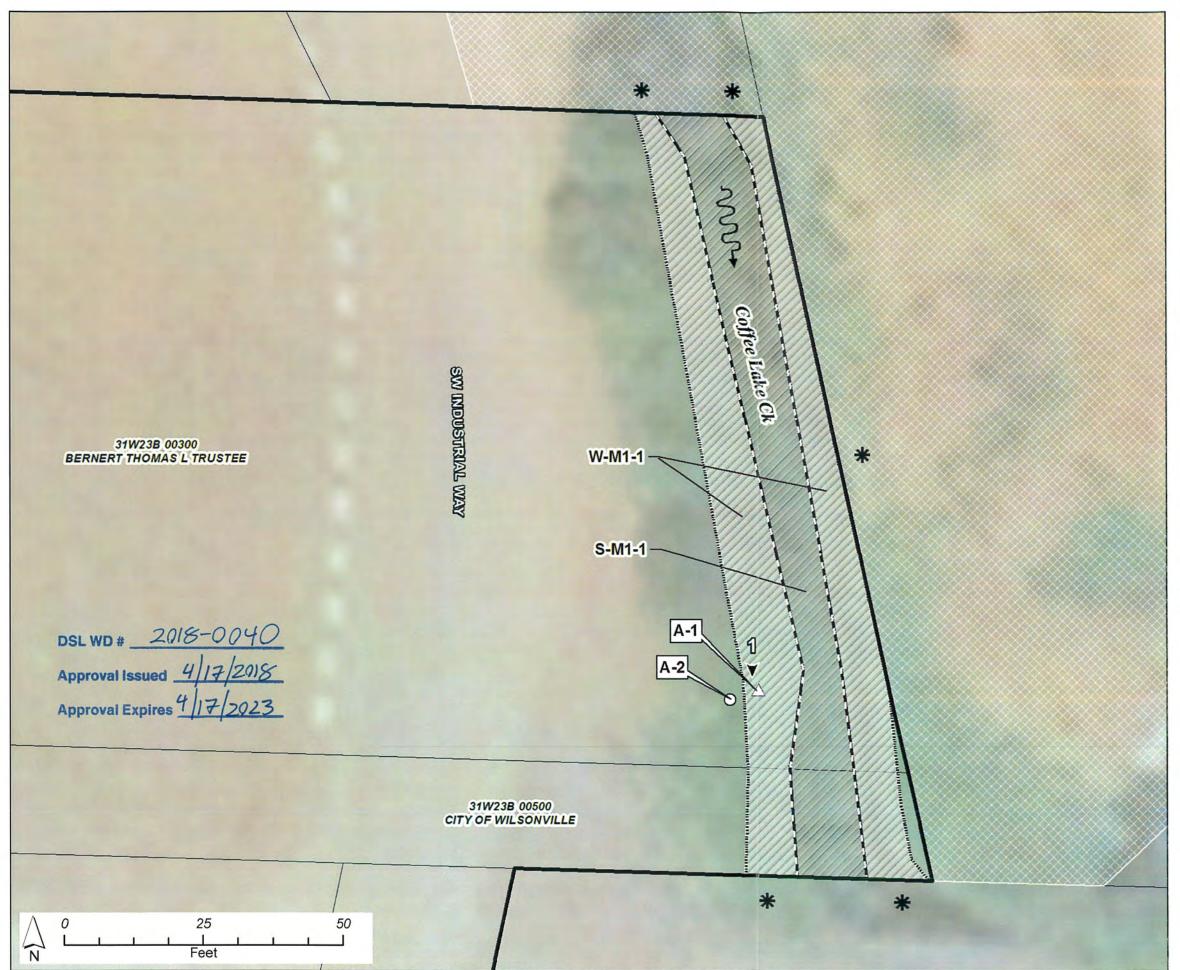
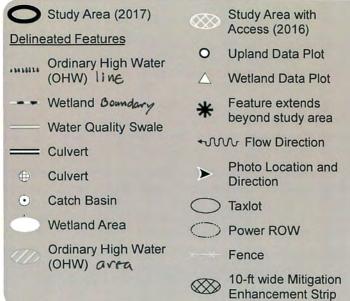


Figure 6, Site A, Sheet 2 of 3
Delineated Wetlands
PLM 1.0, WD2017-0026

Access provided





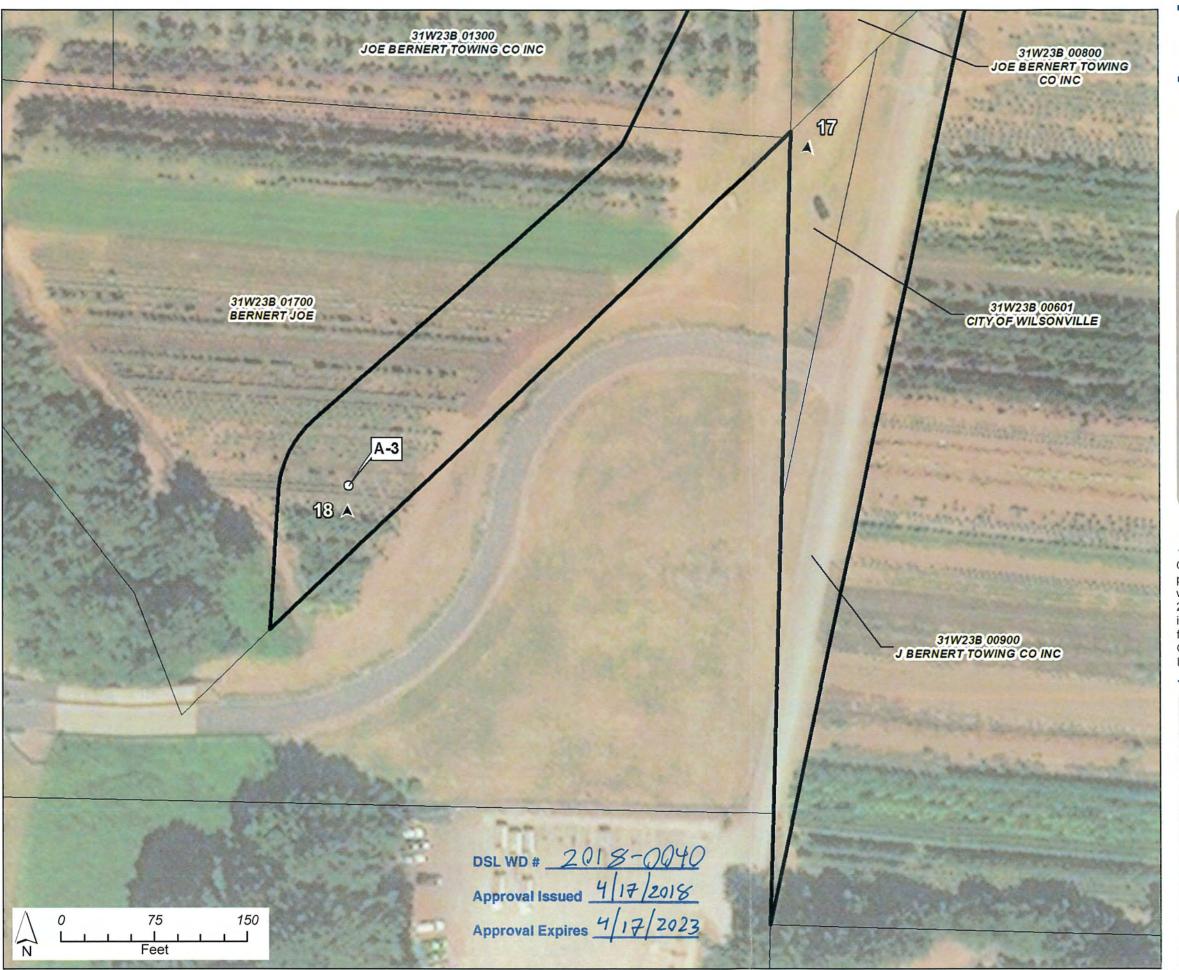
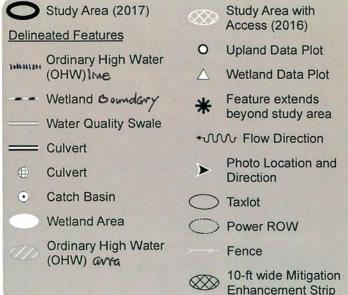


Figure 6, Site A, Sheet 3 of 3

Delineated Wetlands

PLM 1.0, WD2017-0026

Access provided





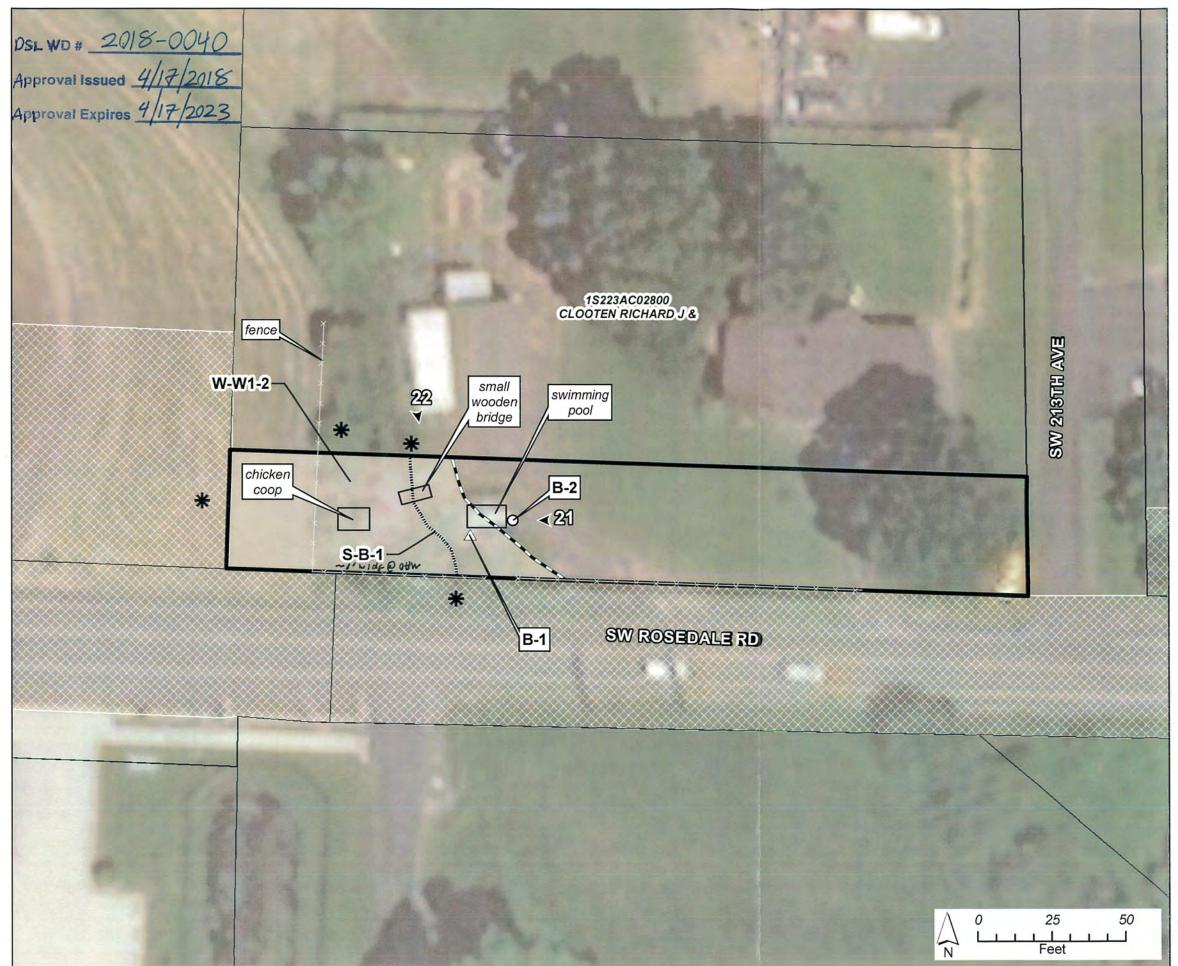
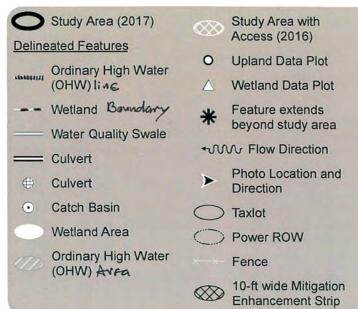


Figure 6, Site B
Delineated Wetlands
PLW 1.0, WD2017-0027
Access provided





Document Path: \\Pdxfs1\project\\T\TVWD00000006\0600INFO\GS\\Maps\\Wetland Delineation Additional Areas Winter 2018 - DSL\\Additional Areas Winter 2018 Fig 06 Wetland Delineation PLM 1 SITE B.mxd Date: 4/12/2018 Time: 10:21:35 PM User Name: Sast

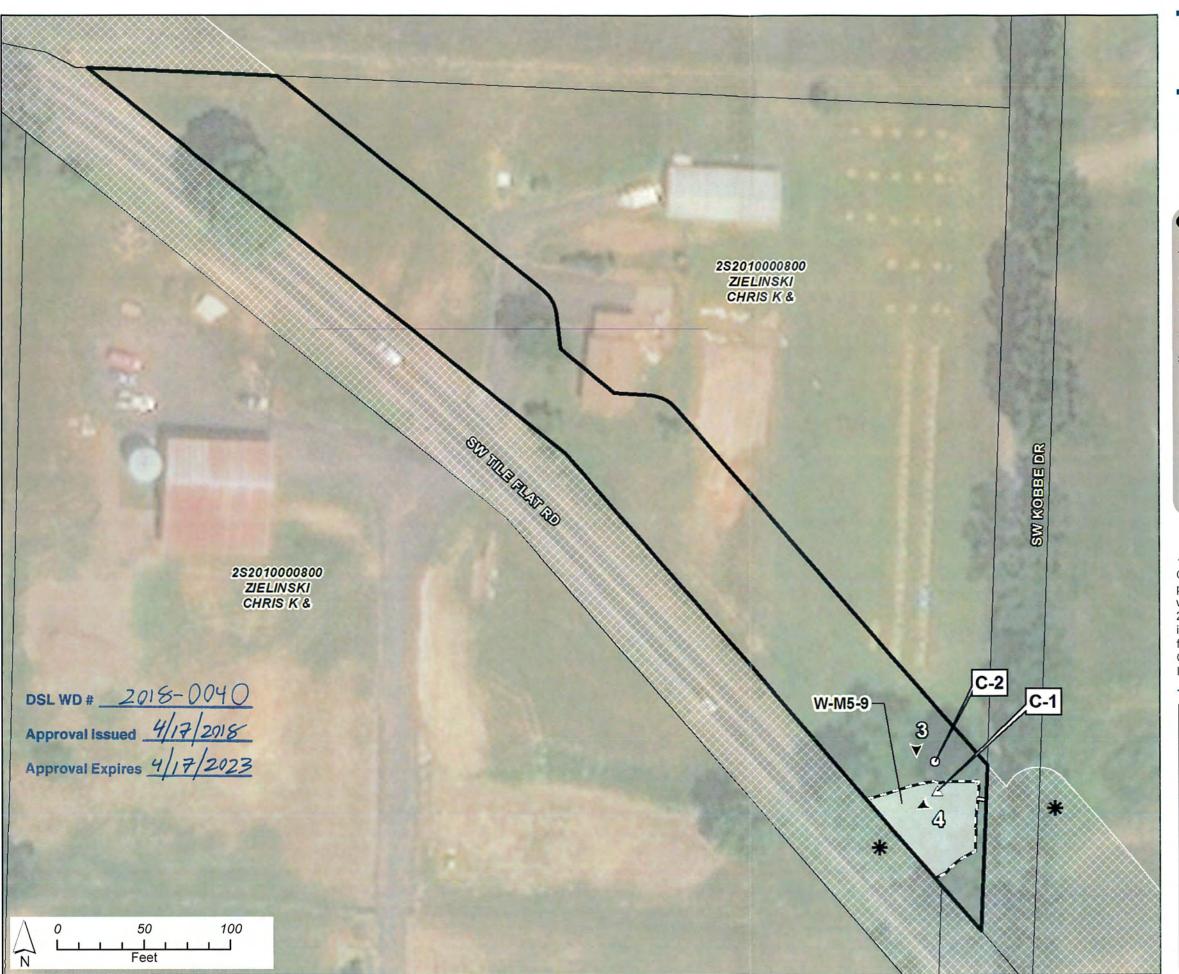


Figure 6, Site C
Delineated Wetlands
PLM 5.0, WD2017-0024
Access provided

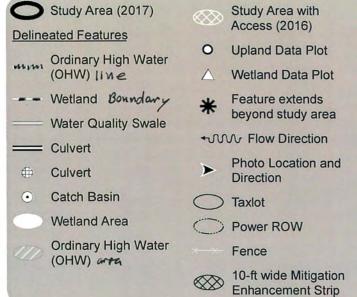
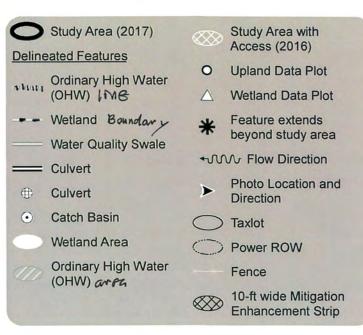
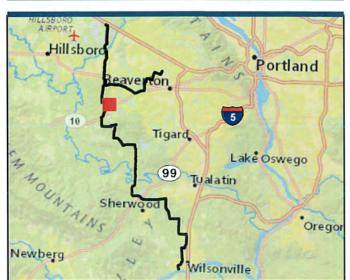






Figure 6, Site D
Delineated Wetlands
PLW 1.0, WD2017-0027
Access provided





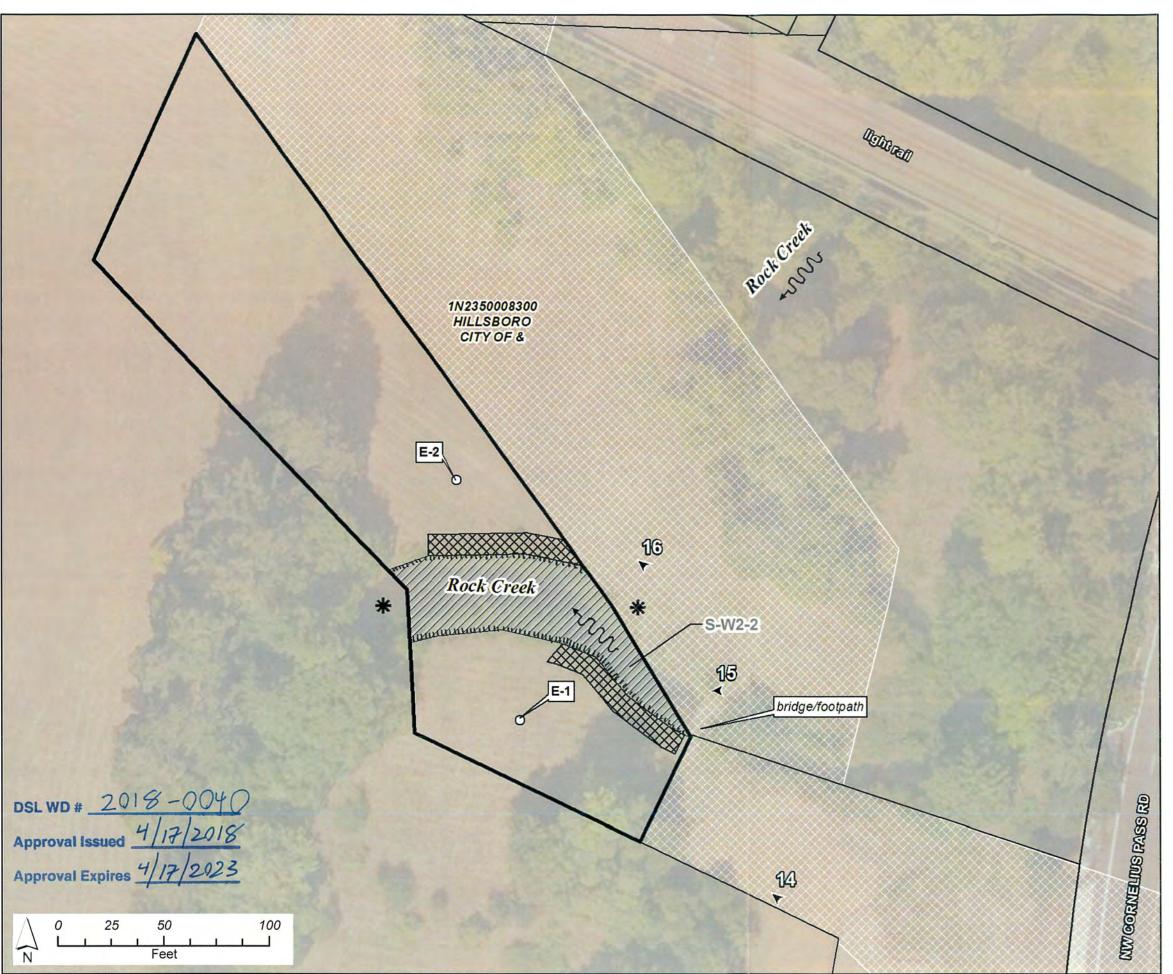
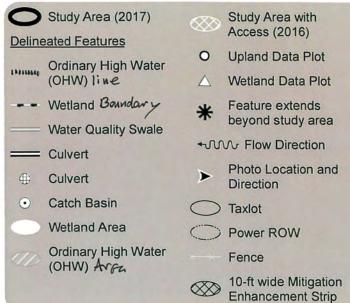
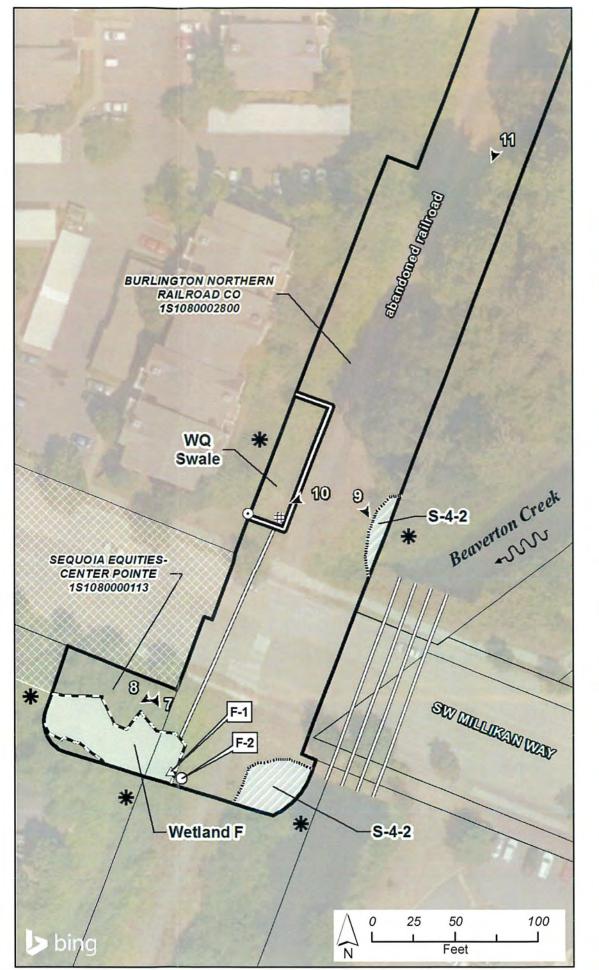


Figure 6, Site E
Delineated Wetlands
PLW 2.0, WD2017-0007
Alignment change



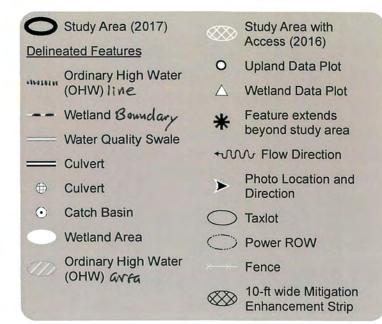


DSL WD# 2018-0040 Approval Issued 4/17/2918 Approval Expires 4/17/2023 12 1\$1080002800 **BURLINGTON NORTHERN** — RAILROAD CO ebendoned rethoed 90 100 200 Feet



Willamette Water Supply Program Additional Areas Winter 2017 Wetland Delineation

Figure 6, Site F
Delineated Wetlands
PLE 1.0, WD2017-0025
Access provided





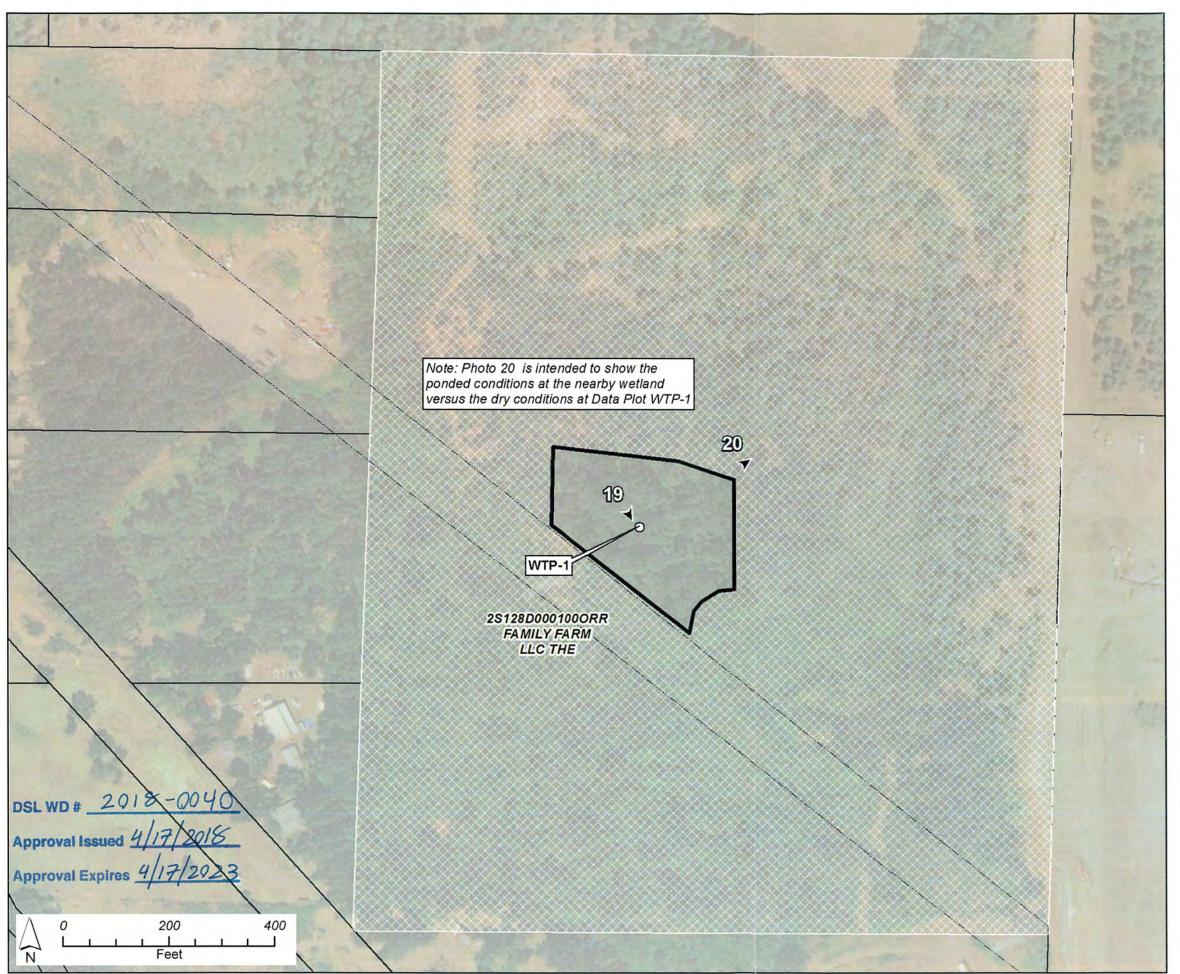
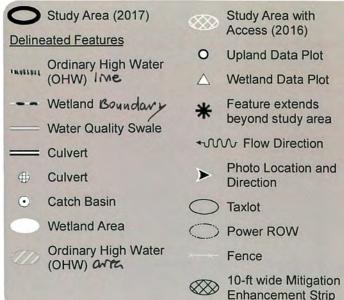


Figure 6, WTP Site Update

Delineated Wetlands WTP 1.0, WD2017-0008 Access possible through poison oak





APPENDIX C: DATA SHEETS

Project/Site: WWSS WTP Site		City/Count	y: Washington	Co.	Sampling Date: November	er 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbor	0			State: OR		
Investigator(s): John Macklin, Tony Vingiello		Section, To	ownship, Ra	inge: See spreadsheet		
Landform (hillslope, terrace, etc.): hillslope				convex, none): concave	Slope (%):	: 10
	Lat: See	spreadsheet		Long: See spreadsheet	Datum: NAV	/D88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	this time of ve					
Are Vegetation, Soil, or Hydrology	_			"Normal Circumstances" p		lo
Are Vegetation, Soil, or Hydrology				eeded, explain any answer		
SUMMARY OF FINDINGS – Attach site ma					•	s, etc
Hydrophytic Vegetation Present? Yes✓	No					
Hydric Soil Present? Yes ✓	No		he Sampled hin a Wetlar	/	, No	
Wetland Hydrology Present? Yes <u>✓</u>	No	WILI	iiii a vvetiai	iur res	NO	
Remarks: Wetland plot in Wetland A at toe of slope. Precipit VEGETATION – Use scientific names of place.		for water	year.			
20.4	Absolute		t Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30 ft) 1 Fraxinus latifolia	% Cover	Species?	Status FACW	Number of Dominant Sp	4	(4)
2. Malus fusca	10	· Y	FACW	That Are OBL, FACW, o	or FAC:	(A)
				Total Number of Domina	4	(D)
3		-		Species Across All Strat	ıa: <u>'</u>	(B)
Sapling/Shrub Stratum (Plot size: 30 ft)	35	= Total C	over	Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
1. Spiraea douglasii	40	Υ	FACW	Prevalence Index work	ksheet:	
2. Rosa pisocarpa	10	N	FAC	Total % Cover of:	Multiply by:	_
3. Salix lasiandra	5	N	FACW	OBL species	x 1 =	
4		-		FACW species	x 2 =	
5				FAC species	x 3 =	_
5 ft	55	= Total C	over	FACU species	x 4 =	_
Herb Stratum (Plot size: 5 ft)	20	V	OBI	UPL species	x 5 =	_
1. Carex obnupta				Column Totals:	(A)	(B)
2				Prevalence Index	= B/A =	
3				Hydrophytic Vegetatio		
4. 5.				✓ Dominance Test is		
6.				Prevalence Index is	s ≤3.0 ¹	
7				Morphological Adap	ptations ¹ (Provide suppor s or on a separate sheet)	rting
8				Wetland Non-Vascu	ular Plants ¹	
9				Problematic Hydror	ohytic Vegetation¹ (Expla	ıin)
10.					l and wetland hydrology r	must
11		= Total Co		be present, unless distu	rbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)	-	10(a) 00	/v G1			
1				Hydrophytic		
2				Vegetation Present? Yes	s No	
	•	= Total Co	over	. rosont: Tes		
% Bare Ground in Herb Stratum 80						
Remarks:						

SOIL

Sampling Point: Plot 1

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

		to the dept	n needed to docum			or commi	the absence	or indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
0-18	10YR 3/1	100					Mucky Loam	Histic with peaty inclusions
								
		 -						
				· ——		-		
<u> </u>								
			Reduced Matrix, CS			d Sand Gra		cation: PL=Pore Lining, M=Matrix.
-		able to all I	RRs, unless other		ed.)			ers for Problematic Hydric Soils ³ :
Histosol		-	Sandy Redox (S					n Muck (A10)
Black His	ipedon (A2)	-	Stripped Matrix		\ (avaant	MIDA 1		Parent Material (TF2)
	n Sulfide (A4)	-	Loamy Mucky N Loamy Gleyed I			WILKA I)		y Shallow Dark Surface (TF-12)
	l Below Dark Surfac	e (A11)	Depleted Matrix		,		_ 011	ner (Explain in Remarks
	rk Surface (A12)	- (, ,	Redox Dark Su				³ Indicato	ors of hydrophytic vegetation and
Sandy M	ucky Mineral (S1)	-	Depleted Dark S	Surface (F	7)		wetla	nd hydrology must be present,
	leyed Matrix (S4)	-	Redox Depress	ions (F8)			unles	s disturbed or problematic.
Restrictive L	.ayer (if present):							
Type:								
Depth (inc	:hes):						Hydric Soil	Present? Yes No
Remarks:							•	
Some fibrou	s peaty nodules p	resent (1")	. Large rocks occ	asionally	present	in matrix,	but less rest	rictive than in upland plots.
HYDROLO	2V							
_	Irology Indicators:		, abaak all that apply				Casar	ndary Indicators (2 or more required)
-	•	nie required	; check all that apply		oo (DO) (e	voont MLD		
·	Water (A1)		Water-Stai		, , ,	xcept wilk	(A V	/ater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
High wa	ter Table (A2)		Salt Crust	A, and 4B)			D	rainage Patterns (B10)
	arks (B1)		Salt Crust	' '	c (B13)		·	ry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
	osits (B3)		 : :			Living Root	·	eeomorphic Position (D2)
-	t or Crust (B4)		Presence		_	_		hallow Aquitard (D3)
_	osits (B5)		Recent Iro					AC-Neutral Test (D5)
	Soil Cracks (B6)		Stunted or					aised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (B7			•	., (=::::,		rost-Heave Hummocks (D7)
	Vegetated Concav		. —		,		_	, ,
Field Observ		,	,					
Surface Wate	er Present? Y	es N	lo <u>√</u> Depth (ind	ches):				
Water Table			lo Depth (ind			_		
Saturation Pr			lo Depth (inc			Wetla	and Hydrolog	y Present? Yes No
(includes cap	illary fringe)							, 11000iii. 100 <u> </u>
Describe Rec	corded Data (stream	gauge, mo	nitoring well, aerial p	ohotos, pre	evious ins	pections), i	f available:	
Remarks:	_							
Plot is 10 fee	et from ponded wa	ater in con	cave wetland.					

Project/Site: WWSS WTP Site			City/Coun	ty: Washington	Co.	Sampling Date: _	November 3, 2016
Applicant/Owner: Tualatin Valley Water I	District and City of Hillsbo	ro			State: OR	Sampling Point:	Plot 2
Investigator(s): John Macklin, Tony Vingi	ello		Section, T	ownship, Ra	nge: See spreadsheet		
Landform (hillslope, terrace, etc.):						Slo	pe (%): ²⁰
Subregion (LRR): A- Northwest Forests					Long: See spreadsheet		
Soil Map Unit Name: See spreadsheet					NWI classi		
Are climatic / hydrologic conditions o	46:4- 4	. Alaia 4ina a af					
		-					
Are Vegetation, Soil,					Normal Circumstances		NO
Are Vegetation, Soil,	or Hydrology	naturally pro	blematic?	(If ne	eded, explain any ansv	vers in Remarks.)	
SUMMARY OF FINDINGS -	Attach site ma	ap showing	sampli	ng point l	ocations, transec	ts, important fe	atures, etc
Heater heating December	V	N. 1					
Hydrophytic Vegetation Present? Hydric Soil Present?		No	ls t	the Sampled		/	
Wetland Hydrology Present?	Yes		wit	thin a Wetlar	nd? Yes	No <u></u> ✓	-
Remarks:	100						
Plot 2 is 2 ft. higher than Plot 1	and on face of slo	pe. Precipitat	tion is hig	gh for water	year.		
·					•		
VEGETATION – Use scient	fic names of p	lants.					
		Absolute	Dominar	nt Indicator	Dominance Test wo	rksheet:	
Tree Stratum (Plot size: 30)	% Cover		? Status	Number of Dominant		
Pseudotsuga menziesii		60	Υ	FACU	That Are OBL, FACW		(A)
2. Arbutus menziesii		25	Υ	UPL	Total Number of Dom	ninant	
3. Crataegus douglasii		10	N	FAC	Species Across All St	_	(B)
4					Percent of Dominant	Species	
0 1: (0) 1 0: (7)	30	95	_ = Total C	Cover	That Are OBL, FACW		(A/B)
Sapling/Shrub Stratum (Plot size: 1. Gaultheria shallon)	35	Υ	FACU	Prevalence Index w	orkshoot:	
Mahonia nervosa		30	· Y	FACU		f: Multipl	y by:
3. Rubus ursinus		10	N	FACU	OBL species		-
		<u> </u>			FACW species		
4					FAC species		
J		75	= Total C	`over	FACU species		
Herb Stratum (Plot size: 5)			JOVCI	UPL species		
1. Polypodium glycyrrhiza		5	Υ	UPL	Column Totals:		
2						(-7	(-/
3					Prevalence Inde	ex = B/A =	
4					Hydrophytic Vegeta		
5					Dominance Test		
6					Prevalence Index		
7					Morphological Adda in Rema	daptations⁺ (Provide rks or on a separate	supporting
8					Wetland Non-Va		oneot)
9					Problematic Hyd		(Explain)
10					¹Indicators of hydric s		,
11					be present, unless di		
Woody Vine Stratum (Plot size: 3	0)	5	_= Total Co	over			
1					Hydrophytic		
2					Vegetation		/
·		•	= Total Co	over	Present?	Yes No	<u>v</u>
% Bare Ground in Herb Stratum _9	5		-				
Remarks:							

Profile Desc	ription: (Describe	e to the de	pth ne	eded to docur	nent the i	indicator	or confirm	the absence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%		Redo olor (moist)	x Feature %	s Type ¹	Loc ²	Texture	Remarks	
0-2	10/YR 2/1	100		oloi (illoiot)				Organic	moderately decomposed litter	_
2-7	10YR 3/3	100						Loam	<u> </u>	_
7-18+	7.5YR 4/4	100	- 		·			Loam		_
	7.0111 11					-				_
							·			_
					<u> </u>	· <u> </u>	·			_
										_
¹ Type: C=Co	oncentration, D=De	pletion, RI	л=Redı	uced Matrix, CS	S=Covere	d or Coate	ed Sand Gr	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators: (Appli	cable to a	II LRRs	s, unless other	wise not	ed.)		Indicato	ors for Problematic Hydric Soils ³ :	
Histosol				Sandy Redox (S	,				m Muck (A10)	
	pipedon (A2)			Stripped Matrix		1) (avaam	4 MI DA 4)		d Parent Material (TF2)	
Black His	n Sulfide (A4)			Loamy Mucky N Loamy Gleyed I			t WLKA 1)		ry Shallow Dark Surface (TF-12)	
	l Below Dark Surfa	ce (A11)		Depleted Matrix		-)		_ 0	her (Explain in Remarks	
	ark Surface (A12)	, ,		Redox Dark Su)		³ Indicate	ors of hydrophytic vegetation and	
	lucky Mineral (S1)		_	Depleted Dark S		=7)			and hydrology must be present,	
	leyed Matrix (S4)			Redox Depress	ions (F8)			unles	ss disturbed or problematic.	
	ayer (if present):									
Type:	-h)-							Unalaia Cail	I Duna and A	
	ches):							Hydric Soil	Present? Yes No _✓	
Remarks:										
HYDROLO	GY									
Wetland Hyd	drology Indicators	s:								
Primary Indic	ators (minimum of	one requir	ed; che	ck all that apply	y)			<u>Seco</u>	ndary Indicators (2 or more required)	
· · · · · · · · · · · · · · · · · · ·	Water (A1)			Water-Stai	ined Leav	es (B9) (e	except MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2	<u>'</u> ,
_	ter Table (A2)				A, and 4B)			4A, and 4B)	
Saturation	, ,			Salt Crust					Orainage Patterns (B10)	
	arks (B1)			Aquatic Inv		, ,			Ory-Season Water Table (C2)	٥,
· · · · · · · · · · · · · · · · · · ·	nt Deposits (B2)			Hydrogen			Listan Dan		Saturation Visible on Aerial Imagery (CS	ا(د
	oosits (B3) it or Crust (B4)			Oxidized F		_	_		Geomorphic Position (D2) Shallow Aquitard (D3)	
_	osits (B5)						ed Soils (C6		FAC-Neutral Test (D5)	
	Soil Cracks (B6)			Stunted or			,		Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aerial	Imagery (Other (Exp			(=::::7:)		Frost-Heave Hummocks (D7)	
	Vegetated Conca		,			,			,	
Field Observ										
Surface Water	er Present?	Yes	No _	✓ Depth (inc	ches):					
Water Table				✓ Depth (inc						
Saturation Pr				✓ Depth (inc				and Hydrolog	y Present? Yes No	
(includes cap					-14					
Describe Red	corded Data (strear	m gauge, r	nonitori	ng well, aerial p	onotos, pr	evious ins	spections),	if available:		
Damanka										
Remarks:										

Project/Site: WWSS WTP Site	(City/County	. Washington	Co.	Sampling Date: November	4, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR		
Investigator(s): John Macklin, Tony Vingiello	;	Section, To	wnship, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): rocky depression					Slope (%): <u>(</u>	0
	Lat: See s	spreadsheet		Long: See spreadsheet	Datum: NAVD	88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for this						
Are Vegetation, Soil, or Hydrologys	-				present? Yes X No	
Are Vegetation, Soil, or Hydrologyn				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site map						, etc.
Hydrophytic Vegetation Present? Yes N	0					
Hydric Soil Present? Yes ✓ N	0		ie Sampled iin a Wetlar		, No	
Wetland Hydrology Present? Yes <u>✓</u> N	0	With	ıın a vvetiai	id? Yes	NO	
Remarks: Precipitation is high for water year; Plot representative VEGETATION – Use scientific names of plan		and B				
TEGETATION OUG GOIGINING HAMISS OF FIGH	Absolute	Dominant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft) 1	% Cover	Species?	Status	Number of Dominant Sp That Are OBL, FACW, of	pecies	(A)
2				Total Number of Domin Species Across All Stra	^	(B)
4	0	= Total Co		Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft 1. Rosa pisocarpa	25	Υ	FAC			
		<u>'</u>	170	Prevalence Index work	Ksneet: Multiply by:	
2					x 1 =	
4					x 2 =	
5.				-	x 3 =	
		= Total Co	ver	FACU species	x 4 =	_
Herb Stratum (Plot size: ^{5 ft} 1. Phalaris arundinacea	50	Υ	FACW	UPL species	x 5 =	-
Agrostis capillaris	15	<u>'</u>	FAC	Column Totals:	(A)	_ (B)
3. Geranium molle	T	N	UPL	Prevalence Index	= B/A =	
4	·			Hydrophytic Vegetation		
5.				✓ Dominance Test is		
6.				Prevalence Index is	s ≤3.0 ¹	
7.				Morphological Ada	ptations ¹ (Provide supporti	ing
8					s or on a separate sheet)	
9				Wetland Non-Vasc		٠,
10					phytic Vegetation ¹ (Explain I and wetland hydrology m	
11				be present, unless distu		usi
Woody Vine Stratum (Plot size: 30 ft)	65	= Total Co	ver			
1				Hydrophytic		
2.				Vegetation	/	
	0	= Total Co	ver	Present? Yes	s No	
% Bare Ground in Herb Stratum 35	-					
Remarks: Plots reshaped to avoid open water; wetland vegeta	tion inclusi	one are to	nical within	n defined rocky donne	eion	
Those restraped to avoid open water, welland vegeta	uon muusi	ons are ly	Picai Willi	n defined focky depies	31011.	

Profile Desc	ription: (Describ	e to the d	epth ne	eded to docur	ment the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix Color (moist)	%			x Feature	-	Loc ²	Toytura	Domarko
(inches) 0-6	10YR 2/2			olor (moist)	%	Type'	LOC	Texture Loamy Sandy Gvl	Remarks Histic muck
	10111 2/2								Tilodo Muok
6+								bedrock	
					-				
			_						
	-								
	oncentration, D=De						ed Sand Gr		cation: PL=Pore Lining, M=Matrix.
_	ndicators: (Appl	icable to				ed.)			ors for Problematic Hydric Soils ³ :
Histosol				Sandy Redox (,				n Muck (A10)
	pipedon (A2)			Stripped Matrix		4) /	(MI D A 4)		Parent Material (TF2)
Black His	รแต (A3) n Sulfide (A4)			Loamy Mucky N Loamy Gleyed			t WLKA 1)		y Shallow Dark Surface (TF-12)
	n Suilide (A4 <i>)</i> I Below Dark Surfa	rce (Δ11)		Depleted Matrix		.)		_ Oti	her (Explain in Remarks
	rk Surface (A12)	icc (A11)		Redox Dark Su				³ Indicate	ors of hydrophytic vegetation and
	lucky Mineral (S1)			Depleted Dark	, ,				nd hydrology must be present,
Sandy G	leyed Matrix (S4)		_	Redox Depress		•		unles	s disturbed or problematic.
Restrictive L	ayer (if present):								
Type: Roo	k								
Depth (inc	ches): <u>6</u>							Hydric Soil	Present? Yes No
Remarks:									
Underlain by	y rock, not miner	al soil; so	oils simi	ilar to Plot 1 ii	n color ar	nd textur	е		
	OV								
HYDROLO									
_	drology Indicators								
	ators (minimum of	one requi	ired; che	• • • • • • • • • • • • • • • • • • • •					ndary Indicators (2 or more required)
	Water (A1)						except MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				A, and 4B))			4A, and 4B)
✓ Saturation	` '			Salt Crust	. ,				rainage Patterns (B10)
	arks (B1)			Aquatic In		, ,			ry-Season Water Table (C2)
·	t Deposits (B2)			Hydrogen				· · · · · · · · · · · · · · · · · · ·	aturation Visible on Aerial Imagery (C9)
	oosits (B3)					_	_		Geomorphic Position (D2)
_	t or Crust (B4)			Presence					hallow Aquitard (D3)
	osits (B5)						d Soils (C6	· —	AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or			01) (LRR A)		aised Ant Mounds (D6) (LRR A)
	on Visible on Aeria		. ,	Other (Exp	olain in Re	emarks)		⊦	rost-Heave Hummocks (D7)
	Vegetated Conca	ve Surfac	e (B8)						
Field Observ				/ - " "					
Surface Water				✓ Depth (in			_		
Water Table				Depth (in			_		,
Saturation Pr		Yes <u>✓</u>	_ No	Depth (in	ches): sur	face	Wetla	and Hydrolog	y Present? Yes No
(includes cap Describe Red	ollary fringe) corded Data (strea	m gauge	monitori	ng well, aerial	photos pr	evious ins	spections)	if available.	
	25 23 4 (01704	550,			,, pr	30 1110			
Remarks:									
Nomaino.									

Project/Site: WWSS WTP Site	(City/County	y: Washington	Co.	Sampling Date: November 4, 2016			
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR				
Investigator(s): John Macklin, Tony Vingiello	;	Section, To	ownship, Rar	nge: see spreadsheet				
Landform (hillslope, terrace, etc.): rocky hillslope					Slope (%): 3			
Subregion (LRR): A- Northwest Forests and Coast	_ Lat: See s	spreadsheet		Long: See spreadsheet Datum: NAVD88				
Soil Map Unit Name: See spreadsheet				NWI classifica				
Are climatic / hydrologic conditions on the site typical for this	time of vea							
Are Vegetation, Soil, or Hydrology si	-				resent? Yes X No			
Are Vegetation, Soil, or Hydrology n				eded, explain any answers				
SUMMARY OF FINDINGS – Attach site map					,			
Hydrophytic Vegetation Present? Yes No	· /							
Hydric Soil Present? Yes No			he Sampled					
Wetland Hydrology Present? Yes No		witl	hin a Wetlan	id? Yes	No			
Remarks:		<u> </u>						
Precipitation is high for water year.								
VEGETATION – Use scientific names of plant	ts.							
To Ottobar (District 30ff	Absolute		t Indicator	Dominance Test works	heet:			
Tree Stratum (Plot size: 30 ft) 1 Pseudotsuga menziesii	% Cover	Species ?	FACU	Number of Dominant Sp				
2 Quercus garryana	20	Y	FACU	That Are OBL, FACW, or	r FAC: 0 (A)			
3.				Total Number of Domina Species Across All Strata	•			
4.	· 				u (b)			
	60	= Total Co	over	Percent of Dominant Spe That Are OBL, FACW, or				
Sapling/Shrub Stratum (Plot size: 30 ft)								
1. Amalanchier alnifolia	60	<u>Y</u>	FACU	Prevalence Index work				
2. Toxicodendron diversilobum	Trace	N	FAC		Multiply by:			
3					x 1 =			
4					x 2 =			
5	60	T.4.1.0		· ·	x 3 = x 4 =			
Herb Stratum (Plot size: ^{5 ft}		= Total Co	over		x 5 =			
1. Polypodium glycyrrhiza	60	Υ	UPL		(A) (B)			
2. Geranium molle	40	Υ	UPL	Column rotals.	(7.)			
3				Prevalence Index	= B/A =			
4				Hydrophytic Vegetation				
5				Dominance Test is >				
6	·			Prevalence Index is				
7				data in Remarks	tations ¹ (Provide supporting or on a separate sheet)			
8				Wetland Non-Vascu	' '			
9					hytic Vegetation ¹ (Explain)			
10					and wetland hydrology must			
11		= Total Co		be present, unless distur	bed or problematic.			
Woody Vine Stratum (Plot size: 30 ft)	-	_ 10tal CC	vei					
1. Rubus ursinus	5	Y	FACU	Hydrophytic				
2				Vegetation Present? Yes	No ✓			
0.5	5	= Total Co	over	. 10001111 165				
% Bare Ground in Herb Stratum ⁰ Remarks:								
romano.								

		to the dept	n needed to docum			or confirm	uie auseiice	or murcaturs.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 2/2	100					Organic	duff and leaf litter over rock
		· ·						
				· ——				·
	,							
		- <u> </u>						
-								
								·
				·				
			Reduced Matrix, CS			d Sand Gra		cation: PL=Pore Lining, M=Matrix.
-		able to all I	LRRs, unless other		a.)			ers for Problematic Hydric Soils ³ :
Histosol	(AT) ipedon (A2)		Sandy Redox (Sandy Stripped Matrix					n Muck (A10) Parent Material (TF2)
Black His		•	Suipped Matrix Loamy Mucky N) (except	MIRA 1)		y Shallow Dark Surface (TF-12)
	n Sulfide (A4)	•	Loamy Gleyed I			iniLita i)		ner (Explain in Remarks
	Below Dark Surfac	e (A11)	Depleted Matrix		,		_ 0	ici (Explain in Nomano
Thick Da	rk Surface (A12)		Redox Dark Su	rface (F6)			³ Indicato	rs of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted Dark S	•	7)			nd hydrology must be present,
	leyed Matrix (S4)		Redox Depress	ions (F8)			unles	s disturbed or problematic.
	ayer (if present):							
Type: Roc								,
Depth (inc	:hes): <u></u>						Hydric Soil	Present? Yes No
Remarks:								
no significan	it moisture betwee	en solia roc	ck layer and surfa	ce.				
HYDROLOG	GY							
	Irology Indicators:							
-			; check all that apply	v)			Secor	ndary Indicators (2 or more required)
	Water (A1)		Water-Stai		es (B9) (e	xcept MLR		/ater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			, and 4B)				4A, and 4B)
Saturatio			Salt Crust				D	rainage Patterns (B10)
Water Ma	` '		Aquatic Inv	` '	s (B13)		· · · · · · · · · · · · · · · · · · ·	ry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
	osits (B3)				, ,	Living Root	· · · · · · · · · · · · · · · · · · ·	seomorphic Position (D2)
	t or Crust (B4)		Presence		-	-		hallow Aquitard (D3)
_	osits (B5)		Recent Iro	n Reductio	on in Tilled	d Soils (C6)		AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A)	R	aised Ant Mounds (D6) (LRR A)
Inundatio	on Visible on Aerial	Imagery (B7) Other (Exp	lain in Re	marks)		F	rost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface (E	38)					
Field Observ	ations:							
Surface Water	er Present? Y	'es N	lo <u>√</u> Depth (inc	ches):		_		
Water Table	Present? Y	'es N	lo <u>√</u> Depth (ind	ches):		_		,
Saturation Pr	esent? Y	'es N	lo <u>√</u> Depth (ind	ches):		Wetla	and Hydrolog	y Present? Yes No
(includes cap	illary fringe)							
Describe Rec	corded Data (stream	i gauge, mo	nitoring well, aerial p	onotos, pre	evious ins	pections), i	r avallable:	
Remarks:	nd boundary dafin	ad by byds	ology: rock proces	nt at vor	ina dosti	ne in unle:	nd arose sur	rounding depressions
Cical Wellall	ia bouildary dellii	ca by flydf	ology, rock preser	ıcac vary	ing depti	is iii upidi	iiu ai cas sull	ounding depressions

Project/Site: WWSS WTP Site	Co.	Sampling Date: November 4, 2016				
Applicant/Owner: Tualatin Valley Water District and City of Hillsbor	State: OR					
Investigator(s): John Macklin, Tony Vingiello		Section,	Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.):					Slope	· (%): ⁵
	Lat: See			Long: See spreadsheet		
Soil Map Unit Name: See spreadsheet	Lut			NWI classific		
	41-1-41					
Are climatic / hydrologic conditions on the site typical for	_					
Are Vegetation, Soil, or Hydrology				'Normal Circumstances"		No
Are Vegetation, Soil, or Hydrology	_ naturally pro	oblematio	:? (If ne	eeded, explain any answe	ers in Remarks.)	
SUMMARY OF FINDINGS - Attach site ma	p showing	samp	ling point l	ocations, transects	s, important feat	tures, etc
Hydrophytic Vegetation Present? Yes	No <u>✓</u>					
Hydric Soil Present? Yes			s the Sampled		1	
Wetland Hydrology Present? Yes	No ✓	w	ithin a Wetlar	nd? Yes	No <u></u> ✓	
Remarks:						
Precipitation is high for water year. Upland plot fo	r Wetland C.					
VEGETATION – Use scientific names of pl	ants.					
	Absolute	Domina	ant Indicator	Dominance Test work	sheet:	
<u>Tree Stratum</u> (Plot size: 30 ft)	% Cover		es? Status	Number of Dominant S		
1. Prunus emarginata	35	Y	FACU	That Are OBL, FACW,	' ^	(A)
2. Pseudotsuga menziesii	15	Y	FACU	Total Number of Domir	nant	
3. Arbutus menziesii	10	Υ	UPL	Species Across All Stra	^	(B)
4				Percent of Dominant S	necies	
0 15 (OL 1 OL 1 (DL 1 30 ft	60	_ = Total	Cover	That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft 1. Gaultheria shallon	25	Υ	FACU	Prevalence Index wor	rkehoot:	
2. Holodiscus discolor	15	· <u>·</u> Y	FACU		Multiply b	ov:
3. Rubus ursinus	10	· Y	FACU	OBL species	· ·	-
Symphoricarpos albus	10	· Y	FACU	FACW species		
5. Corylus cornuta	10	Y	FACU	FAC species		
5. <u>* /</u>	70			FACU species		
Herb Stratum (Plot size: ^{5 ft}		_ = Total	Cover	UPL species		
1. Geranium molle	5	Υ	UPL	Column Totals:		
2.				Coldifili Totals.	(A)	(D)
3				Prevalence Index	c = B/A =	
4				Hydrophytic Vegetati	on Indicators:	
5				Dominance Test is	; >50%	
6				Prevalence Index i		
7				Morphological Ada	ptations¹ (Provide su	upporting
8					s or on a separate sh	neet)
9				Wetland Non-Vaso		
10				Problematic Hydro		
11				¹ Indicators of hydric so be present, unless dist		
	_	_= Total (Cover	. ,		
Woody Vine Stratum (Plot size: 30 ft)				l		
1				Hydrophytic Vegetation		
2	•			Present? Ye	esNo_ <u>√</u>	<u> </u>
% Bare Ground in Herb Stratum ⁹⁵	0	_= Total (Cover			
Remarks:						
Bare ground cover is leaf litter						
_						

Profile Desc	ription: (Describe	to the de	pth needed to doo	ument the	indicator	or confirm	the absence o	f indicators.)	
Depth	Matrix Color (moist)	%	Color (moist)	dox Feature %	s Type ¹	Loc ²	Texture	Remarks	
(inches) 0-9	10YR 3/2		Color (moist)		Type 	LOC	Silt Loam	Kemarks	<u> </u>
9-12	7.5YR 4/4	98	7.5YR 5/6				Silt Loam		
12-20	7.5YR 5/6	- 50	7.5YR 5/6				Loam		
12-20	7.511370	_ = ===================================	7.511 3/0			IVI			
		_							
									_
¹ Type: C=Co	oncentration. D=De	pletion. RN	/=Reduced Matrix,	CS=Covere	d or Coate	ed Sand Gr	ains. ² Loca	tion: PL=Pore Lining,	M=Matrix.
			I LRRs, unless oth					s for Problematic Hy	
Histosol	(A1)		Sandy Redox	(S5)			2 cm	Muck (A10)	
	pipedon (A2)		Stripped Mat				Red F	Parent Material (TF2)	
Black Hi	` '		Loamy Muck			t MLRA 1)	Very	Shallow Dark Surface	(TF-12)
	n Sulfide (A4)	(8.4.4)	Loamy Gleye	•	2)		Othe	er (Explain in Remarks	i
	Below Dark Surface (A12)	ce (A11)	Depleted Ma				3 In diagtors	of budrophytic vogets	ation and
	rk Surface (A12) lucky Mineral (S1)		Redox Dark : Depleted Dar	` '	•			s of hydrophytic vegeta d hydrology must be p	
	leyed Matrix (S4)		Redox Depre		')			disturbed or problema	
	ayer (if present):			(-)			1		
Type:									
Depth (inc	ches):						Hydric Soil P	resent? Yes	No ✓
Remarks:	, . <u> </u>						1 -		
HYDROLO									
_	drology Indicators								
	•	one require	ed; check all that ar		(==)			ary Indicators (2 or mo	
	Water (A1)			Stained Leav		except MLR		ter-Stained Leaves (B	89) (MLRA 1, 2,
_	ter Table (A2)			4A, and 4B	5)			4A, and 4B)	
Saturatio	, ,		Salt Cru		(5.40)			ninage Patterns (B10)	(00)
	arks (B1)			Invertebrate	, ,			-Season Water Table	
· · · · · · · · · · · · · · · · · · ·	nt Deposits (B2)			en Sulfide O		Lista a Desi		turation Visible on Aer	
	posits (B3)				_	_		omorphic Position (D2	2)
_	t or Crust (B4)			e of Reduce				allow Aquitard (D3)	
	osits (B5)		· · · · · · · · · · · · · · · · · · ·	Iron Reduct		•	· —	C-Neutral Test (D5)	(LDD A)
	Soil Cracks (B6)	l	Stunted)1) (LRR A)		sed Ant Mounds (D6)	
	on Visible on Aerial			expiain in Re	emarks)		FIO	st-Heave Hummocks	(07)
Field Observ	Vegetated Concav	re Surface	(DO)			1			
		Vaa	No / Donth	(inchee).					
Surface Water			No ✓ Depth						
Water Table			No <u>✓</u> Depth						
Saturation Pr (includes cap		Yes	No <u>✓</u> Depth	(inches):		Wetla	and Hydrology	Present? Yes	No <u> </u>
		n gauge, n	nonitoring well, aeri	al photos, pi	revious in	spections), i	if available:		
Remarks:									

Project/Site: WWSS WTP Site		City/County	/: Washington	. Co.	Sampling Date: Novemb	ber 4, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro			_ Sampling Point: Plot 6			
Investigator(s):		Section, To	wnship, Ra	inge: see spreadsheet		
Landform (hillslope, terrace, etc.):			Slope (%)): <u><3</u>		
Subregion (LRR): A- Northwest Forests and Coast	Lat: See	spreadsheet		Long: See spreadsheet	Datum: NA	VD88
Soil Map Unit Name: See spreadsheet				NWI classifica	ation: See spreadsheet	
Are climatic / hydrologic conditions on the site typical for the	nis time of yea					
Are Vegetation, Soil, or Hydrology	-			"Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answer		
SUMMARY OF FINDINGS – Attach site map						es, etc
Hydrophytic Vegetation Present? Yes✓	No	lo 4l	a Campled	I Area		
Hydric Soil Present? Yes✓	No		ne Sampled nin a Wetlar		No	
Wetland Hydrology Present? Yes✓	No	With	iiii a wedai	103		
Remarks: Precipitation is high for water year. Plots 6 and 7 a VEGETATION – Use scientific names of pla		tative of V	Vetland C.			
0.5	Absolute	Dominan	t Indicator	Dominance Test works	sheet:	
Tree Stratum (Plot size: 30 ft 1. Fraxinus latifolia	% Cover 80	Species?	Status FACW	Number of Dominant Sp That Are OBL, FACW, o	4	_ (A)
2. 3.				Total Number of Domina Species Across All Strat	A	_ (B)
4	80	= Total Co		Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)	10	V	E40			_ (/
Rosa pisocarpa Spiraea douglasii		<u>Y</u>	FACW	Prevalence Index work	ksneet: Multiply by:	
			17.077	OBL species		
3 4				FACW species		
5				FAC species		
	15	= Total Co	over	FACU species		
Herb Stratum (Plot size: 5 ft)		_		UPL species		
1. Carex obnupta		Y	OBL	Column Totals:	(A)	(B)
2			·	Drovolonoo Indov	= B/A =	
3				Hydrophytic Vegetatio		
4				✓ Dominance Test is		
5				Prevalence Index is		
6				Morphological Adap		orting
8				Wetland Non-Vascu		,
9				Problematic Hydrop	ohytic Vegetation¹ (Expl	ain)
10 11				¹ Indicators of hydric soil		must
		= Total Co	ver	be present, unless distu	rbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)			•••			
1. Rubus ursinus	Trace	N	FACU	Hydrophytic		
2				Vegetation Present? Yes	s_ ✓ No	
% Bare Ground in Herb Stratum 85	0	= Total Co	ver			
Remarks:						
Bare ground is leaf litter and inundated substrate.						

	inpulon. (Descri	be to the a	epth needed to d	locument the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix	(_	Redox Feature	es			
(inches)	Color (moist)	%	Color (mois	st) %	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 2/1	100					S. Mucky Loam	Histic
10-12	10YR 3/1	100					Clay Loam	
	•		_					
-								
				·				
1 _T 0-0			M-Dadusad Mak				21 -	
	oncentration, D=D Indicators: (App					a Sana Gr		cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils ³ :
Histosol		illeable to t	Sandy Re		icu.,			n Muck (A10)
	oipedon (A2)		Stripped N	, ,				Parent Material (TF2)
Black Hi				ıcky Mineral (F	1) (except	MLRA 1)		y Shallow Dark Surface (TF-12)
	n Sulfide (A4)			eyed Matrix (F2		,		her (Explain in Remarks
	d Below Dark Surf	face (A11)		Matrix (F3)	,		_ 0	Tor (Explain in Normanio
Thick Da	ark Surface (A12)		Redox Da	rk Surface (F6))		³ Indicato	ors of hydrophytic vegetation and
	lucky Mineral (S1		-	Dark Surface (I				nd hydrology must be present,
	Gleyed Matrix (S4)		Redox De	pressions (F8)			unles	s disturbed or problematic.
	Layer (if present)):						
Type: Roc								,
Depth (inc	ches): 12						Hydric Soil	Present? Yes No
Remarks:								
HYDROLO	GY							
	drology Indicator	re·						
1 minary maic		of one requi	red: check all tha	t annly)			Seco	ndary Indicators (2 or more required)
√ Surface	•	of one requi	red; check all tha		vos (B0) (a	voont MI F		ndary Indicators (2 or more required)
	Water (A1)	of one requi	Wate	er-Stained Leav		xcept MLF		Vater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	Water (A1) ater Table (A2)	of one requi	Wate	er-Stained Leav		xcept MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
✓ High Wa	Water (A1) ater Table (A2) on (A3)	of one requi	Wate 1, Salt	er-Stained Leav 2, 4A, and 4B Crust (B11)	3)	xcept MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Varianage Patterns (B10)
✓ High Wa ✓ Saturatio	Water (A1) ater Table (A2) on (A3) larks (B1)	of one requi	Wate 1, Salt Aqua	er-Stained Leaver-Stained Leaver-Sta	es (B13)	xcept MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2)
✓ High Wa ✓ Saturatio	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2)	of one requi	Wate 1, Salt Aqua Hydr	er-Stained Leaver-Stained Leaver-Sta	es (B13)		RA V D D S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
High Wa Saturatio Water M Sedimer Drift Dep	Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3)	of one requi	Wate 1, Salt Aqua Hydr Oxid	r-Stained Leaver-Stained Leaver-Stai	es (B13) dor (C1) eres along	Living Roo	RA V D D S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Parainage Patterns (B10) Pry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Recomorphic Position (D2)
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4)	of one requi	Wate 1, Salt Aqua Hydr Oxid Pres	r-Stained Leav 2, 4A, and 4B Crust (B11) itic Invertebrate ogen Sulfide O ized Rhizosphe ence of Reduce	es (B13) dor (C1) eres along ed Iron (C4	Living Roo	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Varianage Patterns (B10) Vary-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Vater Properties (C9) Value (C9)
High Wa Saturatic Water M Sedimer Drift Dep Algal Ma	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5)	of one requi	Wate 1, Salt Aqua Hydr Oxid Pres Rece	r-Stained Leav 2, 4A, and 4B Crust (B11) tic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled	Living Roo l) d Soils (C6	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Varianage Patterns (B10) Vary-Season Water Table (C2) Vaturation Visible on Aerial Imagery (C9) Vaturation Position (D2) Value Adams (D3) Value Active Activ
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) cosits (B3) at or Crust (B4) cosits (B5) Soil Cracks (B6)		Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun	er-Stained Leav 2, 4A, and 4B Crust (B11) httic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduct ent Iron Reduct ted or Stressec	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo l) d Soils (C6	RA V C S S S S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Laised Ant Mounds (D6) (LRR A)
High Wa Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeri	al Imagery	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun [B7) Othe	r-Stained Leav 2, 4A, and 4B Crust (B11) tic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo l) d Soils (C6	RA V C S S S S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Varianage Patterns (B10) Vary-Season Water Table (C2) Vaturation Visible on Aerial Imagery (C9) Vaturation Position (D2) Value Adams (D3) Value Active Activ
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio	Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Conc	al Imagery	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun [B7) Othe	er-Stained Leav 2, 4A, and 4B Crust (B11) httic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduct ent Iron Reduct ted or Stressec	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo l) d Soils (C6	RA V C S S S S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Laised Ant Mounds (D6) (LRR A)
High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic Sparsely	Water (A1) ater Table (A2) on (A3) larks (B1) nt Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri y Vegetated Conc vations:	al Imagery ave Surface	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun [B7) Othe	er-Stained Leaver-Stained Leaver-Sta	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D	Living Roo l) d Soils (C6	RA V C S S S S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Laised Ant Mounds (D6) (LRR A)
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obsert	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri y Vegetated Conc vations: er Present?	al Imagery ave Surface Yes <u>√</u>	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun (B7) Othe e (B8)	er-Stained Leav 2, 4A, and 4B Crust (B11) tic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressed r (Explain in Re-	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo l) d Soils (C6	RA V C S S S S S S S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Laised Ant Mounds (D6) (LRR A)
High Wa Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Obser Surface Water	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concevations: er Present? Present?	al Imagery ave Surface Yes <u>√</u> Yes <u></u>	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun (B7) Othe e (B8)	er-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): sur th (inches): sur	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S S S S F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Wader M Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Obsert Surface Water Water Table Saturation Pie	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concevations: er Present? Present?	al Imagery ave Surface Yes <u>√</u> Yes <u></u>	Wate 1, Salt Aqua Hydr Oxid Pres Rece Stun (B7) Othe e (B8)	er-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): sur th (inches): sur	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S S S S F F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Laised Ant Mounds (D6) (LRR A)
High Water M Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Obser Surface Water Water Table Saturation Policy	Water (A1) ater Table (A2) on (A3) larks (B1) at Deposits (B2) oosits (B3) at or Crust (B4) oosits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concevations: er Present? Present?	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Water M Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Obser Surface Water Water Table Saturation Policy	Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concovations: er Present? Present? resent? pillary fringe)	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Water M Saturation Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundation Sparsely Field Obser Surface Water Water Table Saturation Policy	Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concovations: er Present? Present? resent? pillary fringe)	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Water Table Saturation Pr (includes cap Describe Rec	Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concovations: er Present? Present? resent? pillary fringe)	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Water Table Saturation Pr (includes cap Describe Rec	Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concovations: er Present? Present? resent? pillary fringe)	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)
High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Obser Surface Water Water Table Saturation Pr (includes cap Describe Rec	Water (A1) ater Table (A2) on (A3) larks (B1) on Deposits (B2) posits (B3) at or Crust (B4) posits (B5) Soil Cracks (B6) on Visible on Aeri of Vegetated Concovations: er Present? Present? resent? pillary fringe)	al Imagery ave Surface Yes <u>√</u> Yes <u>√</u>	Wate	cr-Stained Leav 2, 4A, and 4B Crust (B11) Itic Invertebrate ogen Sulfide O zed Rhizosphe ence of Reduce ent Iron Reduct ted or Stressec r (Explain in Re th (inches): th (inches): sult th (inches): su	es (B13) dor (C1) eres along ed Iron (C4 ion in Tilled I Plants (D emarks)	Living Roo d Soils (C6 1) (LRR A)	RA V C S ots (C3) G S S) F F and Hydrolog	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Irrainage Patterns (B10) Irry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9) Beomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) Baised Ant Mounds (D6) (LRR A) Irrost-Heave Hummocks (D7)

Project/Site: WWSS WTP Site	. Washington	Co.	Sampling Date: November 4, 2016			
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro			Sampling Point: Plot 7			
Investigator(s):		Section, To	wnship, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.):			Slope (%): 0			
				Long: See spreadsheet		
Soil Map Unit Name: See spreadsheet				NWI classifica		
Are climatic / hydrologic conditions on the site typical for the	nis time of ve					
Are Vegetation, Soil, or Hydrology	-			"Normal Circumstances" pi		No.
Are Vegetation, Soil, or Hydrology				eeded, explain any answer		1 0
SUMMARY OF FINDINGS – Attach site mag						es. etc
Hydrophytic Vegetation Present? Yes✓		Ī	<u> </u>			
Hydric Soil Present? Yes ✓	No		e Sampled			
Wetland Hydrology Present? Yes ✓	No	with	in a Wetlar	nd? Yes	No	
Remarks: Precipitation is high for water year. Plots 6 and 7 a	re represent	tative of W	/etland C v	which continues off-site		
VEGETATION – Use scientific names of pla						
Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test works		
1. Fraxinus latifolia	15	Y	FACW	Number of Dominant Sp That Are OBL, FACW, o		(A)
2.						- \ /
3				Total Number of Domina Species Across All Strat	•	_ (B)
4				Percent of Dominant Sp	pocios	
30 ft	15	= Total Co	ver	That Are OBL, FACW, o		_ (A/B)
Sapling/Shrub Stratum (Plot size: 30 ft) 1. Spiraea douglasii	20	Y	FACW	Prevalence Index work	rshoot:	
2. Rosa pisocarpa	20	<u>Y</u>	FAC		Multiply by:	
3. Fraxinus latifolia	10	Y	FACW	OBL species		
4. Symphoricarpos albus	5	N	FACU	FACW species		
5.	<u> </u>			FAC species		
	55	= Total Co	ver	FACU species		
Herb Stratum (Plot size: 5 ft)				UPL species		
1. Carex obnupta	50	Υ	OBL	Column Totals:		
2		1	-			
3		-			= B/A =	
4				Hydrophytic Vegetatio		
5				✓ Dominance Test is		
6				Prevalence Index is Morphological Adap		artin a
7				data in Remarks	or on a separate sheet	, ung :)
8				Wetland Non-Vascu	•	
9				Problematic Hydrop	hytic Vegetation¹ (Expla	ain)
10				¹ Indicators of hydric soil		must
11.		= Total Co	ver	be present, unless distu	rbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)		_ 10161 00				
1. Rubus ursinus	10	Y	FACU	Hydrophytic		
2				Vegetation Present? Yes	s_ ✓ No	
0/ Para Committee II 10/ 150	10	_= Total Co	ver	168		
% Bare Ground in Herb Stratum 50 Remarks:				<u> </u>		
Bare ground cover is inundated substrate and leaf	litter.					
3 and real						

Depth	Matrix	to the dep	tn needed to docur	x Features		or confirm	the absence	or indicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 2/1	100					Sandy Loam	Histic
4 +							bedrock	
								
				·				
¹ Type: C=Co	ncentration. D=Der	oletion. RM=	Reduced Matrix, CS	S=Covered	or Coate	d Sand Gra	ains. ² Loc	cation: PL=Pore Lining, M=Matrix.
			LRRs, unless other					rs for Problematic Hydric Soils ³ :
Histosol ((A1)		Sandy Redox (S	S5)			2 cn	n Muck (A10)
	ipedon (A2)		Stripped Matrix				Red	Parent Material (TF2)
Black His			Loamy Mucky N			MLRA 1)		y Shallow Dark Surface (TF-12)
	n Sulfide (A4)	- (0.4.4)	Loamy Gleyed	, ,)		Oth	ner (Explain in Remarks
	Below Dark Surfacture Rk Surface (A12)	e (ATT)	Depleted Matrix Redox Dark Su				³ Indicato	rs of hydrophytic vegetation and
	ucky Mineral (S1)		Depleted Dark St		7)			nd hydrology must be present,
	leyed Matrix (S4)		Redox Depress	•	- /			s disturbed or problematic.
Restrictive L	ayer (if present):		-					-
Type: Rock	(
Depth (inc	hes): <u>4</u>						Hydric Soil	Present? Yes No
Remarks:								
Underlain by	rock, not minera	ıl soil; soil :	similar to other his	tic plots.				
HYDROLOG	2V							
_	rology Indicators:		d; check all that appl	w)			Socor	ndary Indicators (2 or more required)
✓ Surface \	•	one required	<u> </u>		os (B0) (o s	voont MI D		/ater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			A, and 4B)		xcept wick	V	4A, and 4B)
✓ Saturatio			Salt Crust				D	rainage Patterns (B10)
Water Ma			Aquatic In		s (B13)		· · · · · · · · · · · · · · · · · · ·	ry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
	osits (B3)					Living Root		eomorphic Position (D2)
	t or Crust (B4)		Presence		_	_		hallow Aquitard (D3)
Iron Depo	osits (B5)					d Soils (C6)		AC-Neutral Test (D5)
Surface S	Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A)	R	aised Ant Mounds (D6) (LRR A)
Inundatio	n Visible on Aerial	Imagery (B	7) Other (Exp	olain in Rei	marks)		F	rost-Heave Hummocks (D7)
Sparsely	Vegetated Concav	e Surface (I	B8)					
Field Observ								
Surface Water			No Depth (in			_		
Water Table I			No Depth (in			_		
Saturation Pro		/es <u> </u>	No Depth (in	ches): surfa	ace	Wetla	nd Hydrolog	y Present? Yes <u>√</u> No
(includes cap		n dalide mo	onitoring well, aerial ı	photos pre	evious ine	pections) i	f available·	
Describe rec	orded Data (otream	r gaago, me	milering well, derial p	priotos, pre	7 VIOGO II IO	poolio(10), 1	r available.	
Remarks:								
Nomains.								

Project/Site: WWSS WTP Site		City/Co	ounty: Washington	, Co.	Sampling Date: Nov	vember 4, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbor	State: OR					
Investigator(s): John Macklin, Tony Vingiello		Section	n, Township, Ra	inge: see spreadsheet		
Landform (hillslope, terrace, etc.):					Slope	(%): <u>5</u>
	Lat: See			Long: See spreadsheet		
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	this time of ve					
Are Vegetation, Soil, or Hydrology	_			"Normal Circumstances" p		No X
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		_ 110
SUMMARY OF FINDINGS – Attach site ma						ures, etc.
Hydrophytic Vegetation Present? Yes	No <u></u> ✓		la the Campled	I Aron	<u> </u>	·
Hydric Soil Present? Yes	No <u> </u>		Is the Sampled within a Wetlar		No <u></u> ✓	
Wetland Hydrology Present? Yes	No <u> </u>		within a wetiai	103		
Precipitation is high for water year but did not alte VEGETATION – Use scientific names of pl		10 feet	t east of Wetla	ind C boundary.		
Tree Stratum (Plot size: 30 ft)	Absolute		nant Indicator	Dominance Test work	sheet:	
1. Prunus emarginata	30	Y	ies? Status FACU	Number of Dominant Sp That Are OBL, FACW, of		(A)
2. Corylus cornuta	15	Y	FACU	That Are Obl., FACW, t	JI FAC	(A)
3. Pseudotsuga menziesii	10	N	FACU	Total Number of Domin Species Across All Stra	_	(B)
4.		-		·	·	(D)
Sapling/Shrub Stratum (Plot size: 30 ft)	55	_ = Tota	al Cover	Percent of Dominant Sp That Are OBL, FACW, of		(A/B)
1. Populus balsamifera	10	Υ	FAC	Prevalence Index wor	ksheet:	
2. Mahonia aquifolium	5	Υ	FACU	Total % Cover of:	Multiply b	<u>y:</u>
3. Malus fusca	5	Y	FACW		x 1 =	
4				FACW species 5		
5					x 3 = 30	
Herb Stratum (Plot size: ^{5 ft})	20	_ = Tota	al Cover	FACU species 60		
1. Geranium molle	1	N	UPL		x 5 =	
2.				Column Totals: ⁷⁵	(A) <u>280</u>	(B)
3.				Prevalence Index	$= B/A = \frac{3.73}{}$	
4.				Hydrophytic Vegetation	on Indicators:	
5.				Dominance Test is	>50%	
6.				Prevalence Index is	s ≤3.0 ¹	
7				Morphological Ada data in Remarks	ptations ¹ (Provide su s or on a separate sh	pporting leet)
8				Wetland Non-Vasc	ular Plants ¹	
9 10				Problematic Hydro	phytic Vegetation ¹ (E	xplain)
11.				¹ Indicators of hydric soi be present, unless distu		
		= Total	l Cover	. ,		
Woody Vine Stratum (Plot size: 30 ft)				Hardward &		
1		-		Hydrophytic Vegetation	۔	
2	•			Present? Yes	s No	_
% Bare Ground in Herb Stratum 99		_= ı ota	l Cover			
Remarks:						
Bare ground cover is leaf litter						

Profile Desc	ription: (Describe	to the de	pth nee	ded to docur	nent the i	indicator	or confirm	the absence	of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Col	Redo or (moist)	x Feature %	s Type ¹	Loc ²	Texture	Remarks	
0-2	10YR 2/1	100		or (moist)	70	ypc		Litter		_
2-10	10YR 3/2	100						Silt Loam		
10-18+	10YR 3/3	100						Clay Loam		
10-101	1011(3/3		-					Olay Loani		
		_	· ——			· ——				
										_
¹ Type: C=Co	oncentration, D=De	pletion. RN	/=Reduc	ed Matrix. CS	S=Covered	d or Coate	ed Sand Gr	ains. ² Loc	ation: PL=Pore Lining,	M=Matrix.
	ndicators: (Appli								rs for Problematic Hyd	
Histosol	(A1)		Sa	andy Redox (S5)			2 cm	n Muck (A10)	
	pipedon (A2)			ripped Matrix					Parent Material (TF2)	
Black Hi	` '			amy Mucky N			t MLRA 1)		y Shallow Dark Surface	(TF-12)
	n Sulfide (A4)	(011)		amy Gleyed	•	2)		Oth	ner (Explain in Remarks	
	l Below Dark Surfa ark Surface (A12)	ce (ATT)		epleted Matrix edox Dark Su				³ Indicato	rs of hydrophytic vegeta	tion and
	lucky Mineral (S1)			epleted Dark S	, ,				nd hydrology must be pr	
	leyed Matrix (S4)		-	· edox Depress		,			s disturbed or problemat	
Restrictive L	ayer (if present):									
Type:										
Depth (inc	ches):							Hydric Soil	Present? Yes	_ No <u> </u>
Remarks:								•		
HYDROLO	GY									
	drology Indicators									
-	ators (minimum of		ad: chac	k all that annl	v)			Secon	idary Indicators (2 or mo	are required)
	Water (A1)	one requir	eu, cnec			ros (B0) (a	except MLR		/ater-Stained Leaves (B	
	ter Table (A2)		_		A, and 4B		EXCEPT WILL	W	4A, and 4B)	9) (WILKA 1, 2,
Saturatio				Salt Crust		,		Di	rainage Patterns (B10)	
	arks (B1)		_	Aquatic In		s (B13)			ry-Season Water Table	(C2)
	it Deposits (B2)		_	Hydrogen		, ,			aturation Visible on Aeria	
· · · · · · · · · · · · · · · · · · ·	oosits (B3)		_				Livina Roo		eomorphic Position (D2)	
	t or Crust (B4)		_	Presence		_	_		hallow Aquitard (D3)	
_	osits (B5)		_				d Soils (C6		AC-Neutral Test (D5)	
	Soil Cracks (B6)		_	 Stunted or			•	· —	aised Ant Mounds (D6) ((LRR A)
	on Visible on Aerial	Imagery (I		 Other (Exp			, , ,		rost-Heave Hummocks (
Sparsely	Vegetated Concav	e Surface	(B8)							
Field Observ	vations:									
Surface Water	er Present?	Yes	No <u></u> ✓	Depth (in	ches):					
Water Table				Depth (in						
Saturation Pr				Depth (in				and Hydrology	/ Present? Yes	No <u> </u>
(includes cap	illary fringe)								·	
Describe Red	corded Data (strear	n gauge, n	nonitorin	g well, aerial į	photos, pr	evious ins	spections), i	if available:		
Remarks:										

Project/Site: WWSS WTP Site	. Washington	Co.	Sampling Date: November 3, 2016			
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				Sampling Point: Plot 9		
Investigator(s):		Section, To	wnship, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.):			Slope (%): 0			
Subregion (LRR): A- Northwest Forests and Coast	Lat: See	spreadsheet		Long: See spreadsheet	Datum: _^	NAVD88
Soil Map Unit Name: See spreadsheet				NWI classification	ation: See spreadsheet	
Are climatic / hydrologic conditions on the site typical for t	his time of yea					
Are Vegetation, Soil, or Hydrology	-			Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology				eded, explain any answer		
SUMMARY OF FINDINGS – Attach site map						ıres, etc.
Hydrophytic Vegetation Present? Yes✓	No	lo th	a Campled	Area		
Hydric Soil Present? Yes	No		ie Sampled iin a Wetlar		No	
Wetland Hydrology Present? Yes <u>✓</u>	No	WILL	iii a wetiai	iu: 165	_ 140	
Remarks: Precipitation is high for water year but did not alter VEGETATION – Use scientific names of pla						
20.5	Absolute			Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft) 1. Malus fusca	% Cover 5	Species?	Status FACW	Number of Dominant Sp That Are OBL, FACW, o		(A)
2				Total Number of Domina Species Across All Strat	_	(B)
4	5	= Total Co		Percent of Dominant Sp That Are OBL, FACW, o		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)	40		E4 014/			(,,,,)
Spiraea douglasii Malus fusca	<u>40</u> 20	Y Y	FACW FACW	Prevalence Index work		
Most pisocarpa Rosa pisocarpa	<u></u>	<u>Y</u>	FAC		Multiply by:	
				OBL species FACW species		
4				FAC species		
0	75	= Total Co	ver	FACU species		
Herb Stratum (Plot size: 5 ft)		_		UPL species		
1. Carex obnupta		Y	OBL	Column Totals:		
2				D la da	D/A	
3					= B/A =	
4				Hydrophytic Vegetatio ✓ Dominance Test is		
5				Prevalence Index is		
6				Morphological Adap		porting
8				Wetland Non-Vascu		,
9				Problematic Hydrop		plain)
10		-		¹ Indicators of hydric soil		gy must
11		= Total Co		be present, unless distu	rbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)		_= Total Co	vei			
1		-		Hydrophytic		
2				Vegetation Present? Yes	s_ ✓ No	
% Bare Ground in Herb Stratum ⁹⁰	•	_= Total Co	ver	riesent: Tes	, <u> </u>	_
Remarks:				<u> </u>		
Bare ground cover is leaf litter						

Profile Desc	ription: (Describe	e to the	depth	n needed to docun	nent the i	indicator	or confirm	the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%		Redox Color (moist)	<u>k Feature</u> %	s Type ¹	Loc ²	Texture	Remarks
0-2	10YR 2/1	100		Color (moist)	<u></u>	Type	LOC	Silt Loam	Remarks
2-14	10YR 2/1	100						Mucky SCL	Histic muck
14-18+	10YR 4/4	95		10YR 5/6	5			Loam	Those muck
14-10+	10111 4/4	_ ====		1011 3/0			IVI	LUAIII	
					'				
¹ Type: C=Co	ncentration, D=De	epletion,	RM=F	Reduced Matrix, CS	=Covered	d or Coate	ed Sand Gra	ains. ² Lo	cation: PL=Pore Lining, M=Matrix.
				RRs, unless other					ors for Problematic Hydric Soils³:
Histosol			_	Sandy Redox (S	,				m Muck (A10)
	ipedon (A2)		_	Stripped Matrix					l Parent Material (TF2)
Black Hi	` '		_	Loamy Mucky M			t MLRA 1)		ry Shallow Dark Surface (TF-12)
	n Sulfide (A4)	/ ^ 4 4	_	Loamy Gleyed N		2)		Ot	her (Explain in Remarks
	l Below Dark Surfa rk Surface (A12)	ce (A11) _	Depleted Matrix Redox Dark Sur				3Indicate	ors of hydrophytic vegetation and
	ucky Mineral (S1)		_	Redox Dark Sur Depleted Dark S	. ,				and hydrology must be present,
	leyed Matrix (S4)		-	Redox Depressi		')			ss disturbed or problematic.
	ayer (if present):		_		(- /				•
Type:									
Depth (inc	ches):							Hydric Soil	Present? Yes No
Remarks:									
defined redo	x mineral layer b	oelow h	istic r	muck					
HYDROLO	2V								
-	Irology Indicators			ala a la all Ala A anni la	۸			0	and a market discrete and (O an arrange market discrete
	•	one req	uirea;	check all that apply	•	(DO) (-			ndary Indicators (2 or more required)
✓ Surface	,			Water-Stai			xcept wilk	V	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)				, and 4B)		-	4A, and 4B)
✓ Saturatio	arks (B1)			Salt Crust	, ,	o (D12)			Orainage Patterns (B10) Ory-Season Water Table (C2)
				Aquatic Inv					Saturation Visible on Aerial Imagery (C9)
	t Deposits (B2) osits (B3)			Hydrogen S			Living Roof		Geomorphic Position (D2)
	t or Crust (B4)			Presence of		_	_		Shallow Aquitard (D3)
_	osits (B5)						t) d Soils (C6		AC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted or					Raised Ant Mounds (D6) (LRR A)
	on Visible on Aeria	l Imager	v (B7)				(LIXIX A)		rost-Heave Hummocks (D7)
	Vegetated Conca	_			idiii iii i te	markoj		<u> </u>	rost ricave riaminosks (B1)
Field Observ		- Curia	100 (D.	<u> </u>					
Surface Water		Ves √	, N	o Depth (inc	hes). 1				
Water Table				o Depth (inc		face	_		
Saturation Pr				o Depth (inc			Wotls	and Hydrolog	y Present? Yes No
(includes cap		165	'\	o Deptir (inc	, i i e s)		Wella	and Hydrolog	y Fresent: Tes NO
Describe Red	corded Data (strea	m gauge	e, mon	nitoring well, aerial p	hotos, pr	evious ins	spections), i	if available:	
Remarks:									

Project/Site: WWSS WTP Site		City/Cou	nty: Washington	Co.	Sampling Date: Nov	vember 4, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbo	oro			State: OR		
Investigator(s): John Macklin, Tony Vingiello		Section,	Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.):					Slope	(%): 10
Subregion (LRR): A- Northwest Forests and Coast	Lat: See	spreadshee	et	Long: See spreadsheet	Datum:	NAVD88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	r this time of ve					
Are Vegetation, Soil, or Hydrology	-			'Normal Circumstances"		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		_ 110
SUMMARY OF FINDINGS – Attach site ma						ures, etc.
Hydrophytic Vegetation Present? Yes					<u>· </u>	·
	No ✓		the Sampled		No <u></u> ✓	
Wetland Hydrology Present? Yes	No ✓	W	rithin a Wetlar	na? Yes	No	
Remarks:		·				
Precipitation is high for water year.						
VEGETATION – Use scientific names of p	lants.					
20.4	Absolute		ant Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft) 1. Pseudotsuga menziesii	<u>% Cover</u> 70	Specie:	s? Status FACU	Number of Dominant S		
Arbutus menziesii	30	<u>'</u>	UPL	That Are OBL, FACW,	or FAC: 0	(A)
		-		Total Number of Domir	_	(5)
3				Species Across All Stra	ata: ⁵	(B)
4	100	- Total	Cover	Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: 30 ft)		_ = Total	Cover	That Are OBL, FACW,	or FAC: 0	(A/B)
1. Gaultheria shallon	40	Υ	FACU	Prevalence Index wor	ksheet:	
2. Holodiscus discolor	25	Υ	FACU	Total % Cover of:	Multiply b	y:
3. Amalanchier alnifolia	10	N	FACU	OBL species	x 1 =	
4. Malus fusca	5	N	FACW	FACW species	x 2 =	
5				FAC species	x 3 =	
5 ft	80	_ = Total	Cover	FACU species	x 4 =	
Herb Stratum (Plot size: 5 ft)	95	v	IIDI	UPL species		
1. Geranium molle				Column Totals:	(A)	(B)
2				Prevalence Index	c = B/A =	
3				Hydrophytic Vegetation		
4				Dominance Test is		
5				Prevalence Index i		
6				Morphological Ada		pporting
8		-		Wetland Non-Vaso	·	icct)
9		-		Problematic Hydro		xnlain)
10		-		¹Indicators of hydric so		. ,
11	_			be present, unless dist		
Woody Vine Stratum (Plot size: ^{30 ft}	5	_= Total (Cover			
1. Rubus ursinus	20	Υ	FACU	Hydrophytic		
2.				Vegetation	,	
	20	= Total (Cover	Present? Ye	es No_ <u>√</u>	_
% Bare Ground in Herb Stratum ⁹⁵						
Remarks:						

Profile Desc	ription: (Describe	e to the de	pth nee	ded to docur	ment the i	ndicator	or confirm	the absence	of indicators.)		
Depth (inches)	Matrix Color (moist)	%		Redo lor (moist)	x Feature %	s Type ¹	Loc ²	Texture	Don	narks	
0-2	10YR 2/1	100		or (moist)	70	 		Silt Loam	Nen	IGI NO	
2-7	10YR 3/3	100						Loam			
7-18+	7.5YR 4/4 100	100						Loam			
					-						
	-										
	-				-						
1- 0.0			4.5.					. 2,			
	oncentration, D=De Indicators: (Appli						ed Sand Gra		ation: PL=Pore Lir		
Histosol		cable to a		andy Redox (eu.)			n Muck (A10)	, riyunc 30ii	٥.
	pipedon (A2)			ripped Matrix	,				Parent Material (T	F2)	
Black Hi	. , ,			oamy Mucky N		1) (except	t MLRA 1)		y Shallow Dark Sur		
Hydroge	n Sulfide (A4)			oamy Gleyed			,		ner (Explain in Rem		
	d Below Dark Surfa	ice (A11)		epleted Matrix				_			
	ark Surface (A12)			edox Dark Su	` ,				rs of hydrophytic ve	-	
	lucky Mineral (S1) Bleyed Matrix (S4)		_	epleted Dark : edox Depress		-7)			nd hydrology must s disturbed or prob		
	_ayer (if present):			edox Depress	sions (Fo)			unies	s disturbed or prob	emanc.	
Type:	-uyo. (p. 000111).										
	ches):							Hydric Soil	Present? Yes	No	✓
Remarks:								11,411.10 0011	- 1000m: 100 <u>-</u>		
rtomanto.											
HYDROLO	GY										
Wetland Hyd	drology Indicators	S:									
Primary Indic	ators (minimum of	one requir	ed; chec	k all that appl	y)			Secon	ndary Indicators (2	or more requi	red)
Surface	Water (A1)		_	Water-Sta	ined Leav	es (B9) (e	except MLR	RA W	ater-Stained Leave	es (B9) (MLR .	A 1, 2,
_	ter Table (A2)			1, 2, 4	A, and 4B)			4A, and 4B)		
Saturation	, ,		_	Salt Crust					rainage Patterns (E		
	arks (B1)		-	Aquatic In		, ,			ry-Season Water T		
	nt Deposits (B2)		-	Hydrogen					aturation Visible on		ry (C9)
	posits (B3)		_			_	_		eomorphic Position		
_	it or Crust (B4)		_	_ Presence					hallow Aquitard (D3		
	osits (B5)		-	 '			d Soils (C6	· —	AC-Neutral Test (D		
· · · · · · · · · · · · · · · · · · ·	Soil Cracks (B6) on Visible on Aeria	l Imagary (_ Stunted or _ Other (Exp			(LKK A)		aised Ant Mounds rost-Heave Hummo		
	Vegetated Conca		-	_ Other (LX)	Jiaiii iii i Ke	illaiks)		''	ost-rieave ridiffilio	icks (DT)	
Field Observ		ve canace	(50)								
Surface Water		Yes	No. ✓	Depth (in	ches).						
Water Table				Depth (in							
Saturation Pr				Depth (in				and Hydrology	y Present? Yes	No	\checkmark
(includes cap	oillary fringe)								yrresent: res_		
Describe Red	corded Data (stream	m gauge, r	nonitorin	g well, aerial _l	photos, pr	evious ins	spections), i	if available:			
Remarks:											

Project/Site: WWSS WTP Site		City/County: Washington	Co.	Sampling Date: November 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsb	ooro		State: OR	
Investigator(s):		Section, Township, Ra	nge: see spreadsheet	
Landform (hillslope, terrace, etc.):				Slope (%): 0
Subregion (LRR): A- Northwest Forests and Coast	Lat: See	spreadsheet	Long: See spreadsheet	Datum: NAVD88
Soil Map Unit Name: See spreadsheet			NWI classifica	ation: See spreadsheet
Are climatic / hydrologic conditions on the site typical for				
Are Vegetation, Soil, or Hydrology	_			resent? Yes X No
Are Vegetation, Soil, or Hydrology			eeded, explain any answer	
SUMMARY OF FINDINGS – Attach site m				
Hydrophytic Vegetation Present? Yes✓	No	la tha Carranta	I A man	
Hydric Soil Present? Yes✓	No	Is the Sampled within a Wetlan		No
Wetland Hydrology Present? Yes <u>✓</u>	No	within a wetial	id: les	NO
Remarks: Precipitation is high for water year but did not all VEGETATION – Use scientific names of p				
VEGETATION - 03e scientific flames of p	Absolute	Dominant Indicator	Dominance Test works	shoot:
Tree Stratum (Plot size: 30 ft) 1. Fraxinus latifolia		Species? Status Y FACW	Number of Dominant Sp That Are OBL, FACW, of	pecies
2. 3.			Total Number of Domina Species Across All Strat	ant
4.		= Total Cover	Percent of Dominant Sp That Are OBL, FACW, o	pecies
Sapling/Shrub Stratum (Plot size: 30 ft)				
1			Prevalence Index work	sneet: Multiply by:
2.				x 1 =
3 4				x 2 =
5.			· ·	x 3 =
		= Total Cover		x 4 =
Herb Stratum (Plot size: 5 ft)			UPL species	x 5 =
1. Geranium molle			Column Totals:	(A) (B)
2			Prevalence Index	= B/A =
3			Hydrophytic Vegetatio	
4			✓ Dominance Test is	
5 6			Prevalence Index is	
7			Morphological Adap	otations ¹ (Provide supporting s or on a separate sheet)
8			Wetland Non-Vascu	ılar Plants ¹
9. 10.			Problematic Hydrop	phytic Vegetation¹ (Explain)
11.			¹ Indicators of hydric soil be present, unless distu	and wetland hydrology must
		= Total Cover	be present, unless distu	——————————————————————————————————————
Woody Vine Stratum (Plot size: 30 ft)				
1			Hydrophytic Vegetation	
2	•	Tabal C	Present? Yes	s_√ No
% Bare Ground in Herb Stratum ⁹⁹	-	= Total Cover		
Remarks:				
Bare ground cover is inundated substrate				

Profile Desc	cription: (Describe	e to the dep	th needed to docu	ment the	indicator	or confirm	the absence	e of indicators.)
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-2	10YR 2/1	100					Silt Loam	
2-14	10YR 2/1	100					Mucky SCL	Histic muck
14-18+	10YR 4/4	95	10YR 5/6	5	С	М	Loam	
			-		·			
l ———								·
			-					
1- 0.0							. 2,	
			=Reduced Matrix, CS LRRs, unless othe			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. ors for Problematic Hydric Soils ³ :
1 -		Cable to all			.eu.)			•
Histosol	oipedon (A2)		Sandy Redox (Stripped Matrix					m Muck (A10) d Parent Material (TF2)
	stic (A3)		Suipped Matrix Loamy Mucky I	. ,	1) (evcen	· MI RA 1)	· · · · · · · · · · · · · · · · · · ·	ry Shallow Dark Surface (TF-12)
	en Sulfide (A4)		Loamy Gleyed			t WEICH I)		ther (Explain in Remarks
	d Below Dark Surfa	ce (A11)	Depleted Matrix		-/			ther (Explain in Nemarks
	ark Surface (A12)	` '/	Redox Dark Su	. ,)		³ Indicate	ors of hydrophytic vegetation and
	Mucky Mineral (S1)		Depleted Dark	Surface (I	=7)		wetla	and hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unle	ss disturbed or problematic.
Restrictive	Layer (if present):							
Type:								
Depth (in	ches):						Hydric Soi	I Present? Yes <u>√</u> No <u>√</u>
Remarks:								
HYDROLO	GY							
Wetland Hy	drology Indicators	S :						
Primary India	cators (minimum of	one require	d; check all that appl	y)			Seco	ondary Indicators (2 or more required)
_✓ Surface	Water (A1)		Water-Sta	ined Leav	es (B9) (e	xcept MLF	RA \	Water-Stained Leaves (B9) (MLRA 1, 2,
✓ High Wa	ater Table (A2)		1, 2, 4/	A, and 4B	3)	•		4A, and 4B)
✓ Saturation	on (A3)		Salt Crust				[Orainage Patterns (B10)
	larks (B1)		Aquatic In	vertebrate	es (B13)		[Dry-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
	posits (B3)					Living Roo	· · · · · · · · · · · · · · · · · · ·	Geomorphic Position (D2)
	at or Crust (B4)		Presence		_	_		Shallow Aquitard (D3)
	oosits (B5)		Recent Iro	n Reduct	ion in Tille	d Soils (C6		FAC-Neutral Test (D5)
	Soil Cracks (B6)					1) (LRR A		Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (B						Frost-Heave Hummocks (D7)
	y Vegetated Conca		, — , ,		,			,
Field Obser			/					
Surface Wat		Yes ✓	No Depth (in	ches). 6				
Water Table			No Depth (in		face	_		
			No Depth (in			— \Math	and Usednala	gy Present? Yes No
Saturation P (includes car		Yes <u>▼</u>	No Depth (in	cnes):		weti	and Hydrolog	gy Present? Yes No
		m gauge, m	onitoring well, aerial	photos, pi	revious ins	spections),	if available:	
Remarks:								

Project/Site: WWSS WTP Site		City/Cou	unty: Washington	Co.	_ Sampling Date: _ ^N	November 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsb	oro			State: OR		
Investigator(s):		Section,	, Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.):					Slop	oe (%): 20
	Lat: See			Long: See spreadsheet		
Soil Map Unit Name: See spreadsheet				NWI classifi		
Are climatic / hydrologic conditions on the site typical for	or this time of ve					
Are Vegetation, Soil, or Hydrology	_			'Normal Circumstances"		No
						110
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site m				eeded, explain any answe		atures. etc
	_ _{No} _ ✓			<u> </u>	<u></u>	·
	No		s the Sampled			
Wetland Hydrology Present? Yes	No ✓	v	vithin a Wetlar	nd? Yes	No	
Remarks:						
Precipitation is high for water year.						
VEGETATION – Use scientific names of p	olants.					
To a Otraction (District 30 ft	Absolute		ant Indicator	Dominance Test work	ksheet:	
Tree Stratum (Plot size: 30 ft) 1. Quercus garryana	<u>% Cover</u> 25	Specie Y	es? Status FACU	Number of Dominant S		(4)
2. Arbutus menziesii	20	Y	UPL	That Are OBL, FACW,	or FAC:	(A)
3. Pseudotsuga menziesii	10	N	FACU	Total Number of Domin	7	(B)
4.				Species Across All Stra	ata: <u>'</u>	(B)
4.	55	= Total	Cover	Percent of Dominant S		(A /D)
Sapling/Shrub Stratum (Plot size: 30 ft)	-	_ = 10tai	Cover	That Are OBL, FACW,	or FAC:	(A/B)
1. Holodiscus discolor	15	Υ	FACU	Prevalence Index wo	rksheet:	
2. Mahonia aquilifolium	15	Υ	FACU	Total % Cover of:	Multiply	/ by:
3. Amalanchier alnifolia	10	Υ	FACU	OBL species	x 1 =	
4. Malus fusca	5	N	FACW	FACW species	x 2 =	
5				FAC species		
5ff	45	_ = Total	Cover	FACU species		
Herb Stratum (Plot size: ^{5 ft} 1. Polypodium glycyrrhiza	15	Υ	UPL	UPL species		
2. Lonicera ciliosa		· Y	UPL	Column Totals:	(A)	(B)
3		-		Prevalence Index	x = B/A =	
				Hydrophytic Vegetati		
4				✓ Dominance Test is		
5 6				Prevalence Index		
7				Morphological Ada	aptations¹ (Provide s	supporting
8					s or on a separate	sheet)
9				Wetland Non-Vaso		(Familia)
10				Problematic Hydro Indicators of hydric so		
11				be present, unless dist		
M(1) (1) (2) (3) ft	20	_= Total	Cover		<u> </u>	
Woody Vine Stratum (Plot size: 30 ft)				Thudraub. 41 -		
1				Hydrophytic Vegetation		,
2				Present? Ye	es No <u>'</u>	<u>/</u>
% Bare Ground in Herb Stratum 80		_= Total	Cover			
Remarks:				1		
Bare ground cover is leaf litter						

Profile Desc	ription: (Describe	to the de	pth nee	ded to docur	nent the i	indicator	or confirm	the absence	of indicators.)		
Depth (inches)	Matrix Color (moist)	%		Redo or (moist)	x Feature %	s Type ¹	Loc ²	Texture		Remarks		
0-2	10YR 2/1	100		or (moist)	70	ypc		Silt Loam		r comanto		
2-7	10YR 3/3	100	·					Loam				—
					· ———							—
7-18+	7.5YR 4/4		· 					Loam				
	-											
	-				-	· ——						—
1- 0.0								. 2,		1111		—
	oncentration, D=De Indicators: (Appli						ed Sand Gr		ation: PL=Por			
Histosol		cable to a		andy Redox (eu.)			n Muck (A10)	iadic Hydric	, Jons .	
	pipedon (A2)			ripped Matrix	,				Parent Materia	al (TF2)		
Black Hi				amy Mucky N		1) (except	t MLRA 1)		y Shallow Dark		- -12)	
Hydroge	n Sulfide (A4)			amy Gleyed			,		, ner (Explain in l		,	
	d Below Dark Surfa	ce (A11)		epleted Matrix				_				
	ark Surface (A12)			edox Dark Su	` ,				rs of hydrophyt	-		
	lucky Mineral (S1) Bleyed Matrix (S4)		_	epleted Dark : edox Depress		-7)			nd hydrology m s disturbed or p			
	_ayer (if present):			edox Depress	10115 (1-0)			unies	s distuibed of p	JIODIEITIALIC.		
Type:	ayor (ii procont).											
	ches):							Hydric Soil	Present? Y	es	No ✓	
Remarks:								11,4110 0011				
rtomanto.												
HYDROLO	GY											
Wetland Hyd	drology Indicators	:										
Primary Indic	ators (minimum of	one require	ed; chec	k all that appl	y)			Secon	dary Indicators	s (2 or more	required)	
Surface	Water (A1)		_	Water-Sta	ined Leav	es (B9) (e	except MLF	RA W	ater-Stained L	eaves (B9) (MLRA 1,	2,
_	ter Table (A2)			1, 2, 4	A, and 4B)			4A, and 4B)			
Saturation	, ,		_	_ Salt Crust					rainage Patterr			
	arks (B1)		_	Aquatic In		, ,			ry-Season Wat			
	nt Deposits (B2)		-	Hydrogen					aturation Visibl		magery (C	29)
	posits (B3)		_			_	_	ts (C3) G				
_	it or Crust (B4)		_	_ Presence					hallow Aquitaro			
	osits (B5)		-				d Soils (C6	· —	AC-Neutral Tes		3D A\	
· · · · · · · · · · · · · · · · · · ·	Soil Cracks (B6) on Visible on Aerial	Imagary (I		_ Stunted or _ Other (Exp			(LKK A)		aised Ant Moui ost-Heave Hui			
	Vegetated Conca		-	_ Other (LX)	Jiaiii iii i Ke	illaiks)			Ost-Fleave Flui	IIIIIOCKS (D1	,	
Field Observ		70 Odilado	(50)									
Surface Water		Yes	No. ✓	, Depth (in	ches).							
Water Table				Depth (in								
Saturation Pr				Depth (in				and Hydrology	, Present? V	oc.	No ✓	•
(includes cap	oillary fringe)								/ Fresent: 1		140	
Describe Red	corded Data (strear	n gauge, n	nonitorin	g well, aerial _l	photos, pr	evious ins	spections),	if available:				
Remarks:												

Project/Site: WWSS WTP Site		City/County	/: Washington	Co.	Sampling Date: Nove	mber 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro)			State: OR		
Investigator(s):		Section, To	wnship, Ra	nge: see spreadsheet		
				convex, none): concave	Slope ('	%): <u>0</u>
	Lat: See	spreadsheet		Long: See spreadsheet	Datum: 1	NAVD88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for t	his time of ve					
Are Vegetation, Soil, or Hydrology	-			"Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answei		. 110
SUMMARY OF FINDINGS – Attach site map						ıres, etc
Hydrophytic Vegetation Present? Yes✓	No			<u> </u>	<u> </u>	
Hydric Soil Present? Yes ✓	No		ne Sampled		,	
Wetland Hydrology Present? Yes ✓	No	with	nin a Wetlar	1d? Yes	No	
Remarks:		l .				
Precipitation is high for water year. Representative	of Wetland	E.				
VEGETATION - Use scientific names of pla	ants.					
20.5	Absolute		t Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft 1.		Species?		Number of Dominant Sp That Are OBL, FACW, o		(A)
2				Total Number of Domina	ant	
3				Species Across All Stra		(B)
4		-		Percent of Dominant Sp	pecies	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	_ = Total Co	over	That Are OBL, FACW, o		(A/B)
Saping/Snrub Stratum (Plot size:) 1. Spiraea douglasii	100	Υ	FACW	Prevalence Index worl	ksheet:	
2. Rosua nutkana	10	N	FAC		Multiply by:	,·
3. Malus fusca	3	N	FACW	OBL species		
4. Quercus garryana	3	N	FACU	FACW species		
5.		-		FAC species	·	
	116	= Total Co	over	FACU species		
Herb Stratum (Plot size: ^{5 ft}		_		UPL species		
1				Column Totals:	(A)	(B)
2					D/A	
3					= B/A =	
4				Hydrophytic Vegetation ✓ Dominance Test is		
5				Prevalence Index is		
6				Morphological Adap		porting
8		-		Wetland Non-Vasco		.Ct)
9				Problematic Hydrop		rplain)
10				¹ Indicators of hydric soil		
11	_			be present, unless distu		,,,
Woody Vine Stratum (Plot size: 30 ft)	0	_= Total Co	ver			
1.				Hydrophytic		
2.				Vegetation	/	
	^	= Total Co	ver	Present? Yes	s No	_
% Bare Ground in Herb Stratum 100		5.6.1 00				
Remarks:						
Bare ground cover is inundated substrate						

Depth Matrix		Redox Features			
(inches) Color (moist)	% Color (m		Type ¹ Loc ²	Texture	Remarks
0-8 10YR 2/1 10	00			Mucky loam	Histic
8-18 10YR 3/2 10	00			Sandy loam	Histic
				_	
					
				_	
				_	
·					
¹ Type: C=Concentration, D=Depletion	on, RM=Reduced M	latrix, CS=Covered	or Coated Sand	Grains. ² Loo	cation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators: (Applicable	to all LRRs, unle	ss otherwise noted	1.)	Indicato	ors for Problematic Hydric Soils ³ :
Histosol (A1)	-	Redox (S5)			n Muck (A10)
✓ Histic Epipedon (A2)		d Matrix (S6)			Parent Material (TF2)
Black Histic (A3)		Mucky Mineral (F1) Gleyed Matrix (F2)	(except MLRA		ry Shallow Dark Surface (TF-12)
Hydrogen Sulfide (A4)Depleted Below Dark Surface (A		ed Matrix (F3)		Ot	her (Explain in Remarks
Thick Dark Surface (A12)		Dark Surface (F6)		³ Indicato	ors of hydrophytic vegetation and
Sandy Mucky Mineral (S1)		ed Dark Surface (F7)		nd hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox	Depressions (F8)		unles	s disturbed or problematic.
Restrictive Layer (if present):					
Type:					,
Depth (inches):				Hydric Soil	Present? Yes No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:	required, about all	hat apply)		Saga	odani Indiantora (2 ar mana raguirad)
Wetland Hydrology Indicators: Primary Indicators (minimum of one r	•		(DO) (avaant M		ndary Indicators (2 or more required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one r ✓ Surface Water (A1)	•	ater-Stained Leaves	s (B9) (except M		Vater-Stained Leaves (B9) (MLRA 1, 2,
Wetland Hydrology Indicators: Primary Indicators (minimum of one rows of the surface Water (A1) High Water Table (A2)	W	ater-Stained Leaves	s (B9) (except M	LRA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference) Surface Water (A1) High Water Table (A2) Saturation (A3)	W	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11)		LRA V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the sec	W Sa Ad	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates	(B13)	LRA V D D	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	W S; A; H;	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odd	(B13) or (C1)	V C C S	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the sec	W S; A; H; O	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates	(B13) or (C1) s along Living R	V D	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	W Si Ai Hj O Pi	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odd xidized Rhizosphere	(B13) or (C1) s along Living Ro Iron (C4)	LRA V C C S oots (C3) G	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Oralinage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the sec	W S; A; H; O P; R	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced	(B13) or (C1) os along Living Reliron (C4) on in Tilled Soils (G	LRA V C C S oots (C3) G S C6) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) Praituration Visible on Aerial Imagery (C9) Praituration Position (D2) Phallow Aquitard (D3)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the sec	W Si Ai H O Pi Ri Si	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced ecent Iron Reduction	(B13) or (C1) os along Living Rel Iron (C4) or in Tilled Soils (Callants (D1) (LRR	LRA V C C S oots (C3) G S C6) F A) R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Staturation Visible on Aerial Imagery (C9) Secomorphic Position (D2) Shallow Aquitard (D3) AC-Neutral Test (D5)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surface	W Si Ai H O Pi R Si Si gery (B7) O	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced ecent Iron Reductior unted or Stressed P	(B13) or (C1) os along Living Rel Iron (C4) or in Tilled Soils (Callants (D1) (LRR	LRA V C C S oots (C3) G S C6) F A) R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) Praturation Visible on Aerial Imagery (C9) Promorphic Position (D2) Prailow Aquitard (D3) Prailow Aquitard (D3) Prailow Additional Test (D5) Prailow And Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of Surface Water (A1) ' High Water Table (A2) ' Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations:	W Si Ai Hi O Pi Ri Si gery (B7) O ourface (B8)	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced ecent Iron Reductior unted or Stressed P ther (Explain in Rem	(B13) or (C1) os along Living Rel Iron (C4) or in Tilled Soils (Callants (D1) (LRR	LRA V C C S oots (C3) G S C6) F A) R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) Praturation Visible on Aerial Imagery (C9) Promorphic Position (D2) Prailow Aquitard (D3) Prailow Aquitard (D3) Prailow Additional Test (D5) Prailow And Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the se	W Si Ai Hi O Pi Ri Si gery (B7) O O Variace (B8)	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem	(B13) or (C1) os along Living Rel Iron (C4) or in Tilled Soils (Calants (D1) (LRR earks)	LRA V C C S oots (C3) G S C6) F A) R	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) Praturation Visible on Aerial Imagery (C9) Promorphic Position (D2) Prailow Aquitard (D3) Prailow Aquitard (D3) Prailow Additional Test (D5) Prailow And Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reconstruction) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes Water Table Present?	W Si Ai Hi O Pi Ri Si Si gery (B7) O Inface (B8)	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced ecent Iron Reductior unted or Stressed P ther (Explain in Rem Depth (inches): 6 curfact	(B13) or (C1) os along Living Relation (C4) or in Tilled Soils (Callants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reconstruction) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes Saturation Present? Yes Saturation Present?	W Si Ai Hi O Pi Ri Si Si gery (B7) O Inface (B8)	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem	(B13) or (C1) os along Living Relation (C4) or in Tilled Soils (Callants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Prainage Patterns (B10) Pry-Season Water Table (C2) Praturation Visible on Aerial Imagery (C9) Promorphic Position (D2) Prailow Aquitard (D3) Prailow Aquitard (D3) Prailow Additional Test (D5) Prailow And Mounds (D6) (LRR A)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reconstruction) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Yes Water Table Present?	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reconstruction) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reconstruction) Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Image Sparsely Vegetated Concave Surfield Observations: Surface Water Present? Water Table Present? Yes Saturation Present? Yes (includes capillary fringe)	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the se	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the se	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)
Wetland Hydrology Indicators: Primary Indicators (minimum of one reference of the second of the se	W Si Ai Hi O Pi Ri Si Si Si No C No C No C	ater-Stained Leaves 1, 2, 4A, and 4B) alt Crust (B11) quatic Invertebrates ydrogen Sulfide Odo xidized Rhizosphere resence of Reduced resence of Reduced recent Iron Reductior runted or Stressed P ther (Explain in Rem Depth (inches): Surface Surface	(B13) or (C1) os along Living Relation (C4) on in Tilled Soils (Cellants (D1) (LRR parks)	LRA V C S oots (C3) S C6) F A) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Eaturation Visible on Aerial Imagery (C9) Decomorphic Position (D2) Challow Aquitard (D3) AC-Neutral Test (D5) Caised Ant Mounds (D6) (LRR A) Trost-Heave Hummocks (D7)

Project/Site: WWSS WTP Site		City/Co	unty: Washington	Co.	Sampling Date: Nove	ember 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbo	ro			State: OR		
Investigator(s): John Macklin, Tony Vingiello		Section	, Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): hillslope				convex, none): none	Slope (%): <u></u> 5
	Lat: See	spreadshe	eet	Long: See spreadsheet	Datum: 1	NAVD88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	this time of ve					
Are Vegetation, Soil, or Hydrology	_			'Normal Circumstances"		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site ma						ıres, etc.
Hydrophytic Vegetation Present? Yes	No <u>✓</u>		s the Sampled	LAron		
Hydric Soil Present? Yes	No <u> </u>		s the Sampled within a Wetlar		No <u></u> ✓	
Wetland Hydrology Present? Yes	No <u> </u>	'	Willilli a VVEllai	id: Tes		
Remarks: Precipitation is high for water year. VEGETATION – Use scientific names of pl	ants.					
20.4	Absolute		nant Indicator	Dominance Test worl	sheet:	
Tree Stratum (Plot size: 30 ft) 1 Pseudotsuga menziesii	<u>% Cover</u> 25	Specie Y	es? Status FACU	Number of Dominant S	•	
Quercus garryana	10	<u>'</u>	FACU	That Are OBL, FACW,	or FAC:	(A)
		<u> </u>		Total Number of Domir		(D)
3				Species Across All Stra	ata:	(B)
Sapling/Shrub Stratum (Plot size: 30 ft)	35	= Tota	l Cover	Percent of Dominant S That Are OBL, FACW,		(A/B)
1. Amalancier alnifolia	30	Υ	FACU	Prevalence Index wo	rksheet:	
2. Holodiscus discolor	30	Υ	FACU	Total % Cover of:	Multiply by	<u>':</u>
3. Mahonia aquilifolium	Trace	N	FACU	OBL species	x 1 =	
4. Populus balsamifera	Trace	N	FAC	FACW species	x 2 =	
5				FAC species	x 3 =	
	60	_ = Tota	l Cover	FACU species	x 4 =	
Herb Stratum (Plot size: ^{5 ft})	O.E.	V	LIDI	UPL species	x 5 =	
Geranium molle Polypodium glycyhrrhiza	95 15	Y N	UPL UPL	Column Totals:	(A)	(B)
				Prevalence Index	ς = B/A =	
3				Hydrophytic Vegetati		
4				Dominance Test is		
5				Prevalence Index		
6				Morphological Ada		porting eet)
8				Wetland Non-Vaso	·	,
9				Problematic Hydro		plain)
10				¹ Indicators of hydric so		gy must
11		= Total	Cover	be present, unless dist	urbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)	-	i Ulai	OUVEI			
1				Hydrophytic		
2				Vegetation Present? Ye	es No	
	•	_= Total	Cover	. 1000111:	~ NO	_
% Bare Ground in Herb Stratum ⁹⁵ Remarks:						
Bare ground cover is leaf litter						
g						

Profile Desc	ription: (Describ	e to the de	epth nee	ded to docun	nent the i	ndicator	or confirm	the absence	of indicators.)		
Depth (inches)	Matrix Color (moist)	%		Redox lor (moist)	x Feature: %	s Type ¹	Loc ²	Texture	Rema	arks	
0-1	10YR 2/1	100		ioi (iiioiat)	<u></u> 70	 - ypc		Organic	moderately decomp		
1-4	10YR 3/3	100						Loam			
4-8	7.5YR 4/4							Loam			
			_								
			_		· 						
1								. 2,			
	ncentration, D=Dendicators: (Appl						ed Sand Gr		cation: PL=Pore Lini		
Histosol		icable to a		andy Redox (S		eu.)			m Muck (A10)	riyuric oolis	•
	oipedon (A2)			tripped Matrix	,				d Parent Material (TF	2)	
Black His			· · · · · · · · · · · · · · · · · · ·	oamy Mucky M	. ,	1) (except	t MLRA 1)	· 	ry Shallow Dark Surfa	,	
Hydroge	n Sulfide (A4)			oamy Gleyed I			,		her (Explain in Rema		
	l Below Dark Surfa	ace (A11)		epleted Matrix	. ,			_			
	ark Surface (A12)			edox Dark Sur	. ,	\			ors of hydrophytic veg		
	lucky Mineral (S1) leyed Matrix (S4)		_	epleted Dark S edox Depressi		.7)			and hydrology must b ss disturbed or proble		
	_ayer (if present):		`	edox Depiess	10115 (1-0)			unie	ss disturbed or proble	illalic.	
Type: Roo											
Depth (inc								Hydric Soil	I Present? Yes	No	✓
Remarks:								Tiyano oon			
rtomanto.											
HYDROLO	GY										
Wetland Hyd	drology Indicators	s:									
Primary Indic	ators (minimum of	one requi	ed; chec	k all that apply	y)			<u>Seco</u>	ndary Indicators (2 o	r more require	<u>:d)</u>
Surface	Water (A1)		_	Water-Stai	ned Leav	es (B9) (e	xcept MLF	RA V	Vater-Stained Leaves	s (B9) (MLRA	1, 2,
_	ter Table (A2)			1, 2, 4A	, and 4B)			4A, and 4B)		
Saturatio	, ,		_	Salt Crust					Orainage Patterns (B1		
	arks (B1)		_	Aquatic Inv		, ,			Dry-Season Water Ta		
· · · · · · · · · · · · · · · · · · ·	t Deposits (B2)		_	Hydrogen :					Saturation Visible on A		<i>!</i> (C9)
	oosits (B3)		_			_	_		Geomorphic Position		
_	t or Crust (B4)		_	Presence of					Shallow Aquitard (D3)		
	osits (B5)		_	Recent Iron					FAC-Neutral Test (D5		
	Soil Cracks (B6) on Visible on Aeria	l Imagany /		Stunted or Other (Exp			(LKK A)		Raised Ant Mounds ([Frost-Heave Hummod	, ,	
	Vegetated Conca			Оптет (СХР	naiii iii ixe	iliaiks)		_ '	103t-1 leave 1 lullillilloc	,N3 (D1)	
Field Observ		vo oundoc	, (B0)								
Surface Water		Yes	No	Depth (inc	ches).						
Water Table				Depth (inc							
Saturation Pr				Depth (inc			- Wotls	and Hydrolog	y Present? Yes _	No	✓
(includes cap	oillary fringe)								ly riesellt: Tes _	NO	
Describe Red	corded Data (strea	m gauge, ı	monitorin	g well, aerial p	ohotos, pr	evious ins	spections),	if available:			
Remarks:											

Project/Site: WWSS WTP Site	(City/County	. Washington (Co.	Sampling Date: November 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR	
Investigator(s): John Macklin, Tony Vingiello	;	Section, To	wnship, Ran	nge: see spreadsheet	
Landform (hillslope, terrace, etc.): swale					Slope (%): <3
Subregion (LRR): A- Northwest Forests and Coast	Lat: See s	spreadsheet		Long: See spreadsheet	Datum: NAVD88
Soil Map Unit Name: See spreadsheet				NWI classifica	
Are climatic / hydrologic conditions on the site typical for this	time of vea				
Are Vegetation, Soil, or Hydrology si	-				resent? Yes X No
Are Vegetation, Soil, or Hydrology no				eded, explain any answers	
SUMMARY OF FINDINGS – Attach site map			•		,
Hydrophytic Vegetation Present? Yes ✓ No.)				
Hydric Soil Present? Yes ✓ No.)		e Sampled		No
Wetland Hydrology Present? Yes ✓ No.		with	in a Wetlan	d? Yes	NO
Remarks:					
Precipitation is high for water year. Plot is representa	tive of we	st side of \	Wetland F.		
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft)		Dominant Species?		Dominance Test works	
1. Fraxinus latifolia	75 COVE	Y	FACW	Number of Dominant Spe That Are OBL, FACW, or	•
2					` ` ,
3.				Total Number of Domina Species Across All Strata	4
4.				·	、 /
20.4	75	= Total Co	ver	Percent of Dominant Spe That Are OBL, FACW, or	
Sapling/Shrub Stratum (Plot size: 30 ft)	20	Υ	FAC		, ,
1. Rosa pisocarpa 2. Spiraea douglasii	15	<u>'</u>	FACW	Prevalence Index works	sneet: Multiply by:
3. Symphoricarpos albus	10	<u>Y</u>	FACU		x 1 =
4		-			x 2 =
5					x 3 =
<u> </u>	45	= Total Co	ver		x 4 =
Herb Stratum (Plot size: ^{5 ft}		•			x 5 =
1				Column Totals:	(A) (B)
2				Duescalence Index	- D/A -
3			1	Hydrophytic Vegetation	= B/A =
4				✓ Dominance Test is >	
5				Prevalence Index is	
6				Morphological Adapt	tations ¹ (Provide supporting
8					or on a separate sheet)
9				Wetland Non-Vascu	
10					hytic Vegetation ¹ (Explain) and wetland hydrology must
11.				be present, unless distur	
West-Visc Otestons (District 30 ft	0	= Total Cov	er er	· 	·
Woody Vine Stratum (Plot size: 30 ft 1. Rubus ursinus	5	Υ	FACU	Uvdranbytia	
				Hydrophytic Vegetation	1
2	5	= Total Cov	/er	Present? Yes	No
% Bare Ground in Herb Stratum 55		. 5.6 000			
Remarks:			•		

Depth	Matrix	the dep	oth needed to docum Redo:	x Feature	s		and absence	odivatoro.j
(inches)	Color (moist)	%	Color (moist)	%	_Type ¹	Loc ²	Texture	Remarks
0-5	10YR 2/2	100					Mucky Loam	many roots
5-18	10YR 4/2	85	7.5YR 3/4	15	С	M	Clay Loam	
	-					·		
					-			
	-		-					
			=Reduced Matrix, CS			ed Sand Gra		cation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applie	cable to all	LRRs, unless other	wise not	ed.)		Indicato	ors for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (S					n Muck (A10)
	pipedon (A2)		Stripped Matrix Loamy Mucky M	. ,	1) (aveen	4 MI D A 4\		Parent Material (TF2)
Black His	n Sulfide (A4)		Loamy Gleyed	•		T WILKA 1)		ry Shallow Dark Surface (TF-12)
	d Below Dark Surfac	ce (A11)	Depleted Matrix		•)		_ 0	her (Explain in Remarks
	ark Surface (A12)	,	Redox Dark Sur				³ Indicate	ors of hydrophytic vegetation and
	lucky Mineral (S1)		Depleted Dark S		7)			nd hydrology must be present,
-	Sleyed Matrix (S4)		Redox Depress	ions (F8)			unles	s disturbed or problematic.
_	_ayer (if present):							
Type:								5 10 11 11
	ches):		<u></u>				Hydric Soil	Present? Yes No
Remarks:								
HYDROLO(GY							
Wetland Hyd	drology Indicators	:						
Primary Indic	ators (minimum of	one require	d; check all that apply	/)			Seco	ndary Indicators (2 or more required)
	Water (A1)		Water-Stai	ned Leav	es (B9) (є	except MLR	EA V	Vater-Stained Leaves (B9) (MLRA 1, 2,
	ter Table (A2)			, and 4B)			4A, and 4B)
✓ Saturation			Salt Crust	` '				rainage Patterns (B10)
	arks (B1)		Aquatic Inv					Ory-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen			Lister Breek		saturation Visible on Aerial Imagery (C9)
	oosits (B3)				-	Living Roof		Geomorphic Position (D2)
	it or Crust (B4)		Presence o					hallow Aquitard (D3) AC-Neutral Test (D5)
_	osits (B5) Soil Cracks (B6)					ed Soils (C6) 01) (LRR A)	,	Raised Ant Mounds (D6) (LRR A)
	on Visible on Aerial	Imagery (B			,) (LIXIX A)	·	rost-Heave Hummocks (D7)
	Vegetated Concav				,		'	(21)
Field Observ			. ,					
Surface Wate		Yes	No ✓ Depth (inc	ches):				
Water Table			No Depth (inc			_		
Saturation Pr			No Depth (inc			Wetla	and Hydrolog	y Present? Yes No
(includes cap	oillary fringe)							
Describe Red	corded Data (strean	n gauge, m	onitoring well, aerial p	notos, pr	evious ins	spections), i	t available:	
Remarks:								

Project/Site: WWSS WTP Site		City/Count	y: Washington	Co.	Sampling Date: November 3	3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR		
Investigator(s):		Section, T	ownship, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): hillslope towards swale					Slope (%): _10	0
Subregion (LRR): A- Northwest Forests and Coast	Lat: See	spreadsheet		Long: See spreadsheet	Datum: NAVD88	8
Soil Map Unit Name: See spreadsheet				NWI classific	ation: See spreadsheet	
Are climatic / hydrologic conditions on the site typical for t	his time of ye					
Are Vegetation, Soil, or Hydrology	-				present? Yes X No _	
Are Vegetation, Soil, or Hydrology				eeded, explain any answei		
SUMMARY OF FINDINGS – Attach site map					,	etc.
Hydrophytic Vegetation Present? Yes✓	No					
Hydric Soil Present? Yes ✓	No		he Sampled		, No	
Wetland Hydrology Present? Yes <u>✓</u>	No	Wit	hin a Wetlar	id? Yes	NO	
Remarks:		•				
Precipitation is high for water year. Upslope of Plot	t 15.					
VEGETATION – Use scientific names of pla	ints.					
Tree Stratum (Plot size: 30 ft)	Absolute		t Indicator Status	Dominance Test works		
1				Number of Dominant Sp That Are OBL, FACW, o		(A)
2				Total Number of Domina		
3		-		Species Across All Stra	ta: 4 (I	(B)
4	0			Percent of Dominant Sp		
Sapling/Shrub Stratum (Plot size: 30 ft)	-	_ = Total C	over	That Are OBL, FACW, o	or FAC: 0 (/	A/B)
1. Mahonia aqufolium	35	Υ	FACU	Prevalence Index worl	ksheet:	
2. Arbutus menziesii	25	Υ	UPL	Total % Cover of:	Multiply by:	
3. Quercus garryana	5	N	FACU	OBL species	x 1 =	
4				FACW species	x 2 =	
5		-		· ·	x 3 =	
Herb Stratum (Plot size: ^{5 ft}	65	= Total C	over		x 4 =	
1. Geranium molle	60	Υ	UPL		x 5 =	(5)
2. Polypodium glycyhrrhiza	30	Υ	UPL	Column Totals:	(A)	(B)
3.		-		Prevalence Index	= B/A =	
4.				Hydrophytic Vegetation	on Indicators:	
5.				Dominance Test is	>50%	
6.				Prevalence Index is		
7				Morphological Adap	ptations ¹ (Provide supportings or on a separate sheet)	ıg
8		-		Wetland Non-Vasci	• • • • • • • • • • • • • • • • • • • •	
9					phytic Vegetation ¹ (Explain))
10					l and wetland hydrology mu	
11	_			be present, unless distu		
Woody Vine Stratum (Plot size: 30 ft)		= Total Co	over			
1. Toxicodendron diversilobum	30	Υ	FAC	Hydrophytic		
2.				Vegetation	. No 1	
	30	= Total Co	over	Present? Yes	s No_ <u>√</u>	
% Bare Ground in Herb Stratum 95				<u> </u>		
Remarks:						
Bare ground cover is leaf litter						

Profile Desc	ription: (Describe	to the de	pth need	ed to docur	nent the i	ndicator	or confirm	the absence	e of indicators.)	
Depth	Matrix Color (moist)	%	Colo		x Feature: %	4	Loc ²	Toytura	Domorto	
(inches) 0-2	10YR 2/2			or (moist)	<u>%</u>	Type'	LOC	<u>Texture</u> Loam	Remarks	·
2-18	10YR 3/3	100	-			-	. ———		Crovele et 15"	
2-10	10113/3	_ 100						Silt Loam	Gravels at 15"	
	-	_				-				
	-						· ——		=	
						-				
						-				
	oncentration, D=De						ed Sand Gr		ocation: PL=Pore Lining,	
-	ndicators: (Appli	cable to al				ed.)			ors for Problematic Hyd	Iric Soils":
Histosol				ndy Redox (S	,				m Muck (A10)	
Black Hi	pipedon (A2)			ipped Matrix amy Mucky N		1) (avaan	4 MI D A 1\		d Parent Material (TF2)	(TE 40)
	n Sulfide (A4)			amy Gleyed I			LIVILKA I)		ery Shallow Dark Surface	(11-12)
	l Below Dark Surfa	ce (A11)		pleted Matrix		.)		_ 0	ther (Explain in Remarks	
	rk Surface (A12)	` '		dox Dark Su				³ Indicate	ors of hydrophytic vegeta	ition and
	lucky Mineral (S1)		De	pleted Dark S	Surface (F	7)		wetla	and hydrology must be pr	resent,
	leyed Matrix (S4)		Re	dox Depress	ions (F8)			unle	ss disturbed or problema	tic.
Restrictive L	ayer (if present):									
Type:										,
Depth (inc	ches):							Hydric Soi	I Present? Yes	No
Remarks:										
HYDROLO	GY									
	drology Indicators									
_	ators (minimum of		ed: check	all that apply	<i>(</i>)			Seco	ondary Indicators (2 or mo	ore required)
	Water (A1)	ono roquire	orioon			es (R9) (e	except MLF		Water-Stained Leaves (B	•
	ter Table (A2)		-		, and 4B)		Moopt III.	··· — ·	4A, and 4B)	o) (, 2,
Saturatio				_ Salt Crust		,		Г	Drainage Patterns (B10)	
	arks (B1)			_ Aquatic Inv		s (B13)			Ory-Season Water Table	(C2)
	nt Deposits (B2)			_ ' _ Hydrogen		, ,			Saturation Visible on Aeri	
· · · · · · · · · · · · · · · · · · ·	oosits (B3)						Living Roo		Geomorphic Position (D2	
	t or Crust (B4)			Presence		_	_		Shallow Aquitard (D3)	,
Iron Dep	osits (B5)			_ Recent Iro	n Reducti	on in Tille	d Soils (C6		FAC-Neutral Test (D5)	
Surface	Soil Cracks (B6)			_ Stunted or	Stressed	Plants (D	01) (LRR A)) F	Raised Ant Mounds (D6)	(LRR A)
Inundation	on Visible on Aerial	Imagery (E	37)	Other (Exp	lain in Re	emarks)		F	Frost-Heave Hummocks ((D7)
Sparsely	Vegetated Concav	e Surface	(B8)							
Field Observ	vations:									
Surface Water	er Present?	Yes	No <u></u> ✓	_ Depth (inc	ches):					
Water Table	Present?	Yes	No <u></u> ✓	Depth (inc	ches):					
Saturation Pr				Depth (inc				and Hydrolog	gy Present? Yes	No ✓
(includes cap	illary fringe)									
Describe Red	corded Data (strear	n gauge, m	nonitoring	well, aerial p	photos, pr	evious ins	spections),	if available:		
Remarks:										

Project/Site: WWSS WTP Site		City/Cour	nty: Washington	Co.	_ Sampling Date: N	ovember 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hi	illsboro			State: OR		
Investigator(s): John Macklin, Tony Vingiello		Section,	Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): swale				convex, none): concave	Slop	e (%): 5
	Lat: See	spreadshee	et	Long: See spreadsheet	Datum	n: NAVD88
Soil Map Unit Name: See spreadsheet				NWI classif		
Are climatic / hydrologic conditions on the site typica						
Are Vegetation, Soil, or Hydrology	_			'Normal Circumstances"		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answ		
SUMMARY OF FINDINGS – Attach site						itures, etc
Hydrophytic Vegetation Present? Yes _ ✓	No	Π.				
Hydric Soil Present? Yes ✓	No		the Sampled ithin a Wetlar		√ No	
Wetland Hydrology Present? Yes <u>√</u>	No	l w	itnin a wetiai	id? fes	· NO	
Remarks:		•				
Precipitation is high for water year. Represent	ative of Wetland	F.				
VEGETATION – Use scientific names of	f plants.					
Tree Stratum (Plot size: 30 ft)	Absolute		ant Indicator s? Status	Dominance Test wor		
1				Number of Dominant S That Are OBL, FACW		(A)
2				Total Number of Domi	inant	
3		-		Species Across All Str	rata: ³	(B)
4		T.4.1		Percent of Dominant S		
Sapling/Shrub Stratum (Plot size: 30 ft) -	_ = Total (Cover	That Are OBL, FACW	, or FAC: 100	(A/B)
1. Fraxinus latifolia		Υ	FACW	Prevalence Index wo	rksheet:	
2				Total % Cover of:	Multiply	by:
3				OBL species	x 1 =	
4				FACW species	x 2 =	
5				FAC species		
Harle Christian (Dich size, 5ft	10	_ = Total (Cover	FACU species		
Herb Stratum (Plot size: ^{5 ft} 1. Agrostis capillaris	20	Υ	FAC	UPL species		
2. Juncus bufonius	10	Y	FACW	Column Totals:	(A)	(B)
3. Leucanthemum vulgare	5	N	FACU	Prevalence Inde	ex = B/A =	
4. Cirsium arvense	5	N	FAC	Hydrophytic Vegetat	ion Indicators:	
5. Varbascum thapsus	5	N	FACU	✓ Dominance Test i	is >50%	
6.				Prevalence Index	is ≤3.0 ¹	
7.				Morphological Ad	aptations ¹ (Provide s	upporting
8					ks or on a separate s	sheet)
9				Wetland Non-Vas		Evalaia)
10				¹ Indicators of hydric se		
11				be present, unless dis		
Woody Vine Stratum (Plot size: ^{30 ft}		_= Total C	Cover			
, , , , , , , , , , , , , , , , , , , ,				Hydrophytic		
1 2				Vegetation	/	
	•	= Total C	Cover	Present? Y	es No	
% Bare Ground in Herb Stratum ⁵⁵						
Remarks:						
Bare ground cover is leaf litter.						

Depth	Matrix	to the dep	needed to docun Redo	x Feature:		or commrm	i tile absence	or muicators.)
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 3/1	90	7.5YR 4/6	10	С	М	Sandy Loam	
3-18	10YR 4/2	85	7.5YR 4/6	15	С	M	Loam	
		_						
				-	-			
			=Reduced Matrix, CS			ed Sand Gra		ation: PL=Pore Lining, M=Matrix.
-		able to all	LRRs, unless other		ed.)			rs for Problematic Hydric Soils ³ :
Histosol	(AT) ipedon (A2)		Sandy Redox (S Stripped Matrix					n Muck (A10) Parent Material (TF2)
Black His			Loamy Mucky M		1) (except	MLRA 1)		y Shallow Dark Surface (TF-12)
	n Sulfide (A4)		Loamy Gleyed I			,	-	ner (Explain in Remarks
	Below Dark Surfac	ce (A11)	Depleted Matrix	. ,				
	rk Surface (A12)		Redox Dark Sur	, ,				rs of hydrophytic vegetation and
	ucky Mineral (S1) leyed Matrix (S4)		Depleted Dark S Redox Depress		.7)			nd hydrology must be present, s disturbed or problematic.
	ayer (if present):		Nodox Boprood	10110 (1 0)				o dictarboa or problematic.
Type:								
Depth (inc	:hes):						Hydric Soil	Present? Yes No
Remarks:								
HYDROLO	GY							
	Irology Indicators	:						
•	•		d; check all that apply	/)			Secon	dary Indicators (2 or more required)
Surface \	Water (A1)		Water-Stai	ned Leav	es (B9) (e	xcept MLR	RA W	ater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ter Table (A2)		1, 2, 4A	, and 4B))	•		4A, and 4B)
✓ Saturation	on (A3)		Salt Crust	(B11)			Dr	rainage Patterns (B10)
Water Ma	arks (B1)		Aquatic Inv	ertebrate/	s (B13)			ry-Season Water Table (C2)
	t Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)
	osits (B3)				_	Living Roo		eomorphic Position (D2)
	t or Crust (B4)		Presence of					nallow Aquitard (D3)
	osits (B5)		Recent Iro				· —	AC-Neutral Test (D5)
	Soil Cracks (B6) on Visible on Aerial	Imagany (B	Stunted or Other (Exp			1) (LRR A)		aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)
	Vegetated Concav			nani ili ixe	illaiks)		_ ''	ost-Heave Huminocks (DT)
Field Observ		C Curiace ((50)					
Surface Water		⁄es	No <u>✓</u> Depth (inc	ches):				
Water Table			No Depth (inc			_		
Saturation Pr			No Depth (inc		face	Wetla	and Hydrology	/ Present? Yes No
(includes cap	illary fringe)							
Describe Rec	corded Data (strean	n gauge, m	onitoring well, aerial p	onotos, pr	evious ins	pections), i	ıī available:	
Dament								
Remarks:								

Project/Site: WWSS WTP Site			City/C	ounty: Washingtor	Co.	Sampling Date:	November 3, 2016
Applicant/Owner: Tualatin Valley Water Distri					State: OR		
Investigator(s): John Macklin, Tony Vingiello			Section		nge: see spreadsheet		
Landform (hillslope, terrace, etc.): swale					convex, none): none	SI	ope (%): ⁵
Subregion (LRR): A- Northwest Forests and							
Soil Map Unit Name: See spreadsheet					NWI classif		
Are climatic / hydrologic conditions on the	ne site typical fo	r this time of ve					
Are Vegetation, Soil, or					"Normal Circumstances"		No
Are Vegetation, Soil, or					eeded, explain any answ		110
SUMMARY OF FINDINGS – A							eatures, etc.
Hydrophytic Vegetation Present?		. No ✓			<u> </u>	<u> </u>	·
Hydric Soil Present?	Yes	No <u>✓</u>		Is the Sample			
Wetland Hydrology Present?	Yes			within a Wetla	nd? Yes	No✓	_
Remarks:			!				
Precipitation is high for water year							
VEGETATION – Use scientific	names of p	lants.					
	<u> </u>	Absolute	Dom	ninant Indicator	Dominance Test wor	rksheet:	
<u>Tree Stratum</u> (Plot size: 30 ft)			cies? Status	Number of Dominant	Species	
Prunus emarginata Fraxinus latifolia		10	Y Y	FACU FAC	That Are OBL, FACW	, or FAC: 2	(A)
Quercus garryana		10	Y	FACU	Total Number of Dom	^	(-)
			<u> </u>		Species Across All St	rata: 6	(B)
4		30	- Tot	tal Cover	Percent of Dominant S	Species	(4.47)
Sapling/Shrub Stratum (Plot size: 30	ft)		101	iai Covei	That Are OBL, FACW	, or FAC:	(A/B)
1. Rosa nutkana		20	Υ	FAC	Prevalence Index wo	orksheet:	
2. Amalanchier alnifolia		10	Υ	FACU	Total % Cover of:	. Multir	oly by:
3. Fraxinus latifolia		5	N	FACW	OBL species		
4					FACW species		
5					FAC species		
Herb Stratum (Plot size: ^{5 ft})		_ = Tot	tal Cover	FACU species		
1. Geranium molle	/	70	Υ	UPL	UPL species Column Totals:	x 5 =	
2. Polypodium glycyhrrhiza		5	N	UPL	Column Totals.	(^)	(В)
3					Prevalence Inde	ex = B/A =	
4					Hydrophytic Vegetat		
5					Dominance Test		
6					Prevalence Index		
7					Morphological Ad	daptations ' (Provid rks or on a separat	e supporting te sheet)
8					Wetland Non-Vas	•	
9					Problematic Hydr		n¹ (Explain)
10.					¹ Indicators of hydric se		
11		_		-1.0	be present, unless dis	sturbed or problem	atic.
Woody Vine Stratum (Plot size: 30 ft)	-	_= 10ta	al Cover			
1					Hydrophytic		
2.					Vegetation Present? Y	'es No	✓
		_	_= Tota	al Cover	i rescrit!	NO_	<u> </u>
% Bare Ground in Herb Stratum ⁹⁵ Remarks:							
Bare ground cover is leaf litter							
g							

Profile Desc	ription: (Describe	e to the de	pth needed to	document the	indicator	or confirm	the absence	of indicators.)		
Depth (inches)	Matrix Color (moist)	%	Color (moi	Redox Feature	es Type ¹	Loc ²	Texture	Rem	arke	
0-12	10YR 2/2	100	<u></u> Coloi (IIIoi		<u></u>		Loam	surface thin layer		litter
12+							rock			
121							TOCK			
								-		
1			4 Deduced Me				21			
	ncentration, D=Dendicators: (Appli					ed Sand Gra		cation: PL=Pore Lin		
Histosol		ouble to u	Sandy Re		toui,			n Muck (A10)	,	
	ipedon (A2)		-	Matrix (S6)				l Parent Material (TF	(2)	
Black His	. , ,			ucky Mineral (F	-1) (excep	t MLRA 1)	·	ry Shallow Dark Surf	,	
	n Sulfide (A4)			leyed Matrix (F	2)		Ot	her (Explain in Rema	arks	
	Below Dark Surfa	ice (A11)		Matrix (F3)			3, ,, ,			
	rk Surface (A12) ucky Mineral (S1)			ark Surface (F6 Dark Surface (ors of hydrophytic ve and hydrology must b	-	
	leyed Matrix (S4)			epressions (F8)	' '			ss disturbed or proble		
	ayer (if present):			(/					
Type: rock										
Depth (inc	thes): <u>12</u>						Hydric Soil	Present? Yes	No	✓
Remarks:										
HYDROLO	2V									
-	Irology Indicators		adı abaalı all the	ot annly)			Casa	ndami Indicatora (2 a	r mara raguira.	٦/
	ators (minimum of	one require			voo (PO) (e	voont MI D		ndary Indicators (2 o Vater-Stained Leave	-	
	Water (A1) ter Table (A2)			er-Stained Lea , 2, 4A, and 4 E		except with	v	4A, and 4B)	S (D9) (WLKA	1, 2,
Saturatio				Crust (B11)	-)		Г	Prainage Patterns (B	10)	
Water M	, ,			atic Invertebrat	es (B13)			ry-Season Water Ta		
	t Deposits (B2)			rogen Sulfide C	` ,			Saturation Visible on		(C9)
· 	osits (B3)			-		Living Root		Seomorphic Position		()
	t or Crust (B4)			ence of Reduc	_	_		Shallow Aquitard (D3)		
Iron Dep	osits (B5)		Rec	ent Iron Reduc	tion in Tille	ed Soils (C6	j) F	AC-Neutral Test (D5	5)	
Surface	Soil Cracks (B6)		Stur	ited or Stresse	d Plants (D	01) (LRR A)) F	Raised Ant Mounds (D6) (LRR A)	
Inundation	on Visible on Aeria	l Imagery (E	37) Othe	er (Explain in R	temarks)		F	rost-Heave Hummo	cks (D7)	
Sparsely	Vegetated Concar	ve Surface	(B8)							
Field Observ										
Surface Water			No De _l							
Water Table	Present?	Yes	No De _l	oth (inches):						/
Saturation Pr		Yes	No De _l	oth (inches):		Wetla	and Hydrolog	y Present? Yes _	No	<u> </u>
(includes cap Describe Red	illary fringe) corded Data (streal	m gauge. m	nonitoring well	aerial photos. n	revious ins	spections) i	if available:			
		gg.,	· · · · · · · · · · · · · · · · · · ·	, ,						
Remarks:										
. toidi.ito.										

Project/Site: WWSS WTP Site		City/Cour	nty: Washington	Co.	Sampling Date: No	ovember 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbor	то			State: OR		
Investigator(s): John Macklin, Tony Vingiello		Section, ⁻	Township, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): swale				convex, none): none	Slope	e (%): 0
	Lat: See	spreadshee	t	Long: See spreadsheet	Datum	. NAVD88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	this time of ve					
Are Vegetation, Soil, or Hydrology	-			"Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site ma						tures, etc
Hydrophytic Vegetation Present? Yes✓	No	la la	the Committee			
Hydric Soil Present? Yes ✓	No		the Sampled ithin a Wetlar		/ No	
Wetland Hydrology Present? Yes✓	No	**	itiiiii a vvetiai	iu: 165		
Remarks: Precipitation is high for water year . Representative VEGETATION – Use scientific names of pl		l G shrul	b layer.			
20.6	Absolute		nt Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft 1. Malus fusca	<u>% Cover</u> 30	Species Y	S? Status FACW	Number of Dominant S		(4)
2. Fraxinus latifolia	20	<u>Y</u>	FACW	That Are OBL, FACW,	or FAC: 4	(A)
3		-		Total Number of Domin	4	(B)
4				Species Across All Stra		(D)
	50	= Total (Cover	Percent of Dominant Sport That Are OBL, FACW,		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)		_				(٨/٥)
1. Spiraea douglasii	80	<u>Y</u>	FACW	Prevalence Index wor		
2. Salix lasiandra	80	Y	FACW		Multiply I	-
3		-		OBL species		
4				FAC species		
5	160			FACULARISIS		
Herb Stratum (Plot size: ^{5 ft})	100	_= Total (Cover	FACU species		
1				Column Totals:		
2.				Column Totals.	(^)	(D)
3				Prevalence Index	= B/A =	
4				Hydrophytic Vegetation	on Indicators:	
5				✓ Dominance Test is		
6				Prevalence Index i		
7 8				Morphological Ada data in Remark	ptations¹ (Provide su s or on a separate sl	upporting heet)
9.				Wetland Non-Vaso		
10.				Problematic Hydro		
11.				¹ Indicators of hydric soil be present, unless distu		
	_	= Total C	Cover	Do prodont, unless disti	and or problematic	·-
Woody Vine Stratum (Plot size: 30 ft)						
1				Hydrophytic Vegetation	_	
2	•			Present? Ye	s <u> </u>	
% Bare Ground in Herb Stratum 0	0	_= Total C	Cover			
Remarks:				<u> </u>		

Profile Desc	ription: (Describe	to the dep	th needed to docur	ment the	indicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Feature	es				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-4	10YR 2/1	100					Org. Loam	50% mod. decomposed litter	
4-8	10YR 2/1	100					Mucky Loam		
8-18	10YR 3/2	98	7.5YR 4/6	2	С	М	Clay Loam		
1- 0.0							. 21		
			Reduced Matrix, CS			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :	
1 -		Cable to all			ieu.)			•	
Histosol	oipedon (A2)		Sandy Redox (3 Stripped Matrix					n Muck (A10) I Parent Material (TF2)	
	stic (A3)		Suipped Matrix Loamy Mucky N	. ,	1) (eycen	· MI RA 1)	· · · · · · · · · · · · · · · · · · ·	ry Shallow Dark Surface (TF-12)	
	en Sulfide (A4)		Loamy Gleyed			t will (A I)		her (Explain in Remarks	
	d Below Dark Surfa	ce (A11)	Depleted Matrix		-)		_ 00	nei (Explain in Remarks	
	ark Surface (A12)	()	Redox Dark Su)		³ Indicato	ors of hydrophytic vegetation and	
	Mucky Mineral (S1)		Depleted Dark	Surface (l	F7)			and hydrology must be present,	
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unles	ss disturbed or problematic.	
Restrictive	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 require	d; check all that appl	y)			Seco	ndary Indicators (2 or more required)	
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9) (e	xcept MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2,	
High Wa	ater Table (A2)		1, 2, 4	A, and 4B	3)	-		4A, and 4B)	
✓ Saturation	on (A3)		Salt Crust		,		D	Prainage Patterns (B10)	
Water M	larks (B1)		Aquatic In	vertebrate	es (B13)		D	Ory-Season Water Table (C2)	
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)	
<u> </u>	posits (B3)					Living Roo	· · · · · · · · · · · · · · · · · · ·	Geomorphic Position (D2)	
	at or Crust (B4)		Presence		_	_		Shallow Aquitard (D3)	
	oosits (B5)		Recent Iro	n Reduct	ion in Tille	d Soils (C6		AC-Neutral Test (D5)	
	Soil Cracks (B6))1) (LRR A)		Raised Ant Mounds (D6) (LRR A)	
	on Visible on Aerial	Imagery (B				, ,		rost-Heave Hummocks (D7)	
	/ Vegetated Conca				,			, ,	
Field Obser	<u> </u>		- /						
Surface Wat	er Present?	Yes	No <u>✓</u> Depth (in	ches):					
Water Table			No Depth (in		rface	_			
Saturation P			No Depth (in			- Wotle	and Uvdralag	y Present? Yes No	
(includes cap		165	No Deptii (iii	cries)		_ well	and nydrolog	y Fresent? Tes NO	
	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
Remarks:									

Project/Site: WWSS WTP Site		City/Co	unty: Washington	Co.	_ Sampling Date: November 3, 2016		
Applicant/Owner: Tualatin Valley Water District and City of Hillsb		-	-	State: OR			
				nge: see spreadsheet			
					Slope (%): 10		
			•	, -	Datum: NAVD88		
Soil Map Unit Name: See spreadsheet				NWI classific			
Are climatic / hydrologic conditions on the site typical for	or this time of ve						
Are Vegetation, Soil, or Hydrology					present? Yes X No		
Are Vegetation, Soil, or Hydrology				eeded, explain any answe			
SUMMARY OF FINDINGS – Attach site m	ap showing	samp	oling point le	ocations, transects	i, important features, etc		
Hydrophytic Vegetation Present? Yes	No ✓		la (b Oannala d	A			
Hydric Soil Present? Yes	No		Is the Sampled within a Wetlar		No <u>√</u>		
Wetland Hydrology Present? Yes	No ✓		within a wettar	iur res	NO		
Remarks:							
Precipitation is high for water year							
VEGETATION – Use scientific names of p	lants.						
Tree Chartery (Diet size, 30 ft	Absolute		nant Indicator	Dominance Test work	sheet:		
Tree Stratum (Plot size: 30 ft 1. Arbutus menziesii	50	Y	es? Status UPL	Number of Dominant S			
2 Pseudotsuga menziesii	50	Υ	FACU	That Are OBL, FACW,	or FAC: 1 (A)		
3				Total Number of Domir			
4		-		Species Across All Stra	ata: 6 (B)		
7.	100	= Tota	al Cover	Percent of Dominant S			
Sapling/Shrub Stratum (Plot size: 30 ft)	-	1018	ii Oovei	That Are OBL, FACW,	or FAC: 17 (A/B)		
1. Amalanchier alnifolia	50	Υ	FACU	Prevalence Index wor	ksheet:		
2. Corylus cornuta	20	N	FACU	Total % Cover of:	Multiply by:		
3. Gaultheria shallon	20	N	FACU	OBL species	x 1 =		
4. Mahonia aquifolium		N	FACU		x 2 =		
5. Malus fusca	10	N	FACU FACU		x 3 =		
Herb Stratum (Plot size: ^{5 ft})	120	_ = Tota	al Cover		x 4 =		
Polystichum munitum	30	Υ	FACU		x 5 =		
2. Geranium molle	20	Y	FACU	Column Totals:	(A) (B)		
3. Glyceria striata	10	N	FACW	Prevalence Index	c = B/A =		
4 Pteridium aquilinum	10	N	FACU	Hydrophytic Vegetati			
5				Dominance Test is			
6				Prevalence Index i	s ≤3.0 ¹		
7.				Morphological Ada	aptations ¹ (Provide supporting		
8.					s or on a separate sheet)		
9.				Wetland Non-Vaso			
10					phytic Vegetation ¹ (Explain)		
11				Indicators of hydric so be present, unless dist	il and wetland hydrology must		
		= Total	l Cover	Do process, amost alex			
Woody Vine Stratum (Plot size: 30 ft 1 Toxicodendron diversilobum	20	Υ	FAC				
		<u> </u>	FAC	Hydrophytic Vegetation			
2	20				es No		
% Bare Ground in Herb Stratum 30		_= I otal	I Cover				
Remarks:				I .			
Bare ground cover is leaf litter							

Profile Desc	ription: (Describ	e to the de	pth need	ed to docun	nent the i	ndicator	or confirm	the absence	e of indicators.)	
Depth	Matrix Color (moist)	%	Colo		x Features %		Loc ²	Toyturo	Domorko	
(inches) 0-1	10YR 2/1			r (moist)	<u></u> %	Type ¹	LOC	Texture Org. litter	Remarks	
1-12	10YR 3/2	100								
1-12	1011 3/2							Loam		
			_							
			-							
			-				· 			
			-							
			-							
	oncentration, D=De						ed Sand Gr		cation: PL=Pore Lining, M=N	
-	ndicators: (Appl	icable to a				ed.)			ors for Problematic Hydric	Soils":
Histosol				ndy Redox (S	,				m Muck (A10)	
Black His	nipedon (A2)			ipped Matrix amy Mucky M		I) (evcen	+ MI D A 1)		d Parent Material (TF2) ry Shallow Dark Surface (TF	12)
	n Sulfide (A4)			amy Gleyed I	•		(WILKA I)		ther (Explain in Remarks	-12)
	l Below Dark Surfa	ace (A11)	·	pleted Matrix	•	,		_ 0	iner (Expiairi iri Kemarks	
	rk Surface (A12)	, ,		dox Dark Sur				³ Indicate	ors of hydrophytic vegetation	and
Sandy M	lucky Mineral (S1)		De	pleted Dark S	Surface (F	7)		wetla	and hydrology must be prese	nt,
	leyed Matrix (S4)		Red	dox Depress	ions (F8)			unle	ss disturbed or problematic.	
	ayer (if present):									
Type: Roo										,
Depth (inc	ches): 12							Hydric Soi	I Present? Yes	No <u> </u>
Remarks:										
HYDROLO	GY									
	drology Indicators									
_	ators (minimum of		od: obook	all that apply	٨			2000	ondary Indicators (2 or more r	oguirod\
-	•	one requir	eu, check			oo (PO) (a	woont MI E		•	-
· · · · · · · · · · · · · · · · · · ·	Water (A1)						except MLF	XA \	Nater-Stained Leaves (B9) (N	VILKA I, Z,
_	ter Table (A2)				, and 4B))		-	4A, and 4B)	
Saturatio	arks (B1)			Salt Crust Aquatic In\		o (D12)			Orainage Patterns (B10) Ory-Season Water Table (C2)	
	arks (B1) it Deposits (B2)			- •		, ,			Saturation Visible on Aerial In	
	oosits (B3)			_ Hydrogen :			Living Doo		Saturation visible on Aeriai in Geomorphic Position (D2)	lagery (C9)
	it or Crust (B4)			Presence		_	_		Shallow Aquitard (D3)	
	osits (B5)			Recent Iro					FAC-Neutral Test (D5)	
	Soil Cracks (B6)			Stunted or					Raised Ant Mounds (D6) (LR I	RΔ)
	on Visible on Aeria	l Imagery (Other (Exp			/		Frost-Heave Hummocks (D7)	
	Vegetated Conca			_ Оптот (Ехр		markoj		_ '	Tool Floave Flammooks (BT)	
Field Observ		ve canace	(B0)							
Surface Water		Ves	No	_ Depth (inc	ches).					
Water Table				_ Depth (ind						
Saturation Pr								and Hudralas	gy Present? Yes	No
(includes cap		165	NO	_ Depth (ind			well	and Hydrolog	gy Fresent? Tes	NO
	corded Data (strea	m gauge, n	nonitoring	well, aerial p	hotos, pre	evious ins	spections),	if available:		
Remarks:										

Project/Site: WWSS WTP Site			City/Co	ounty: Washington	Co.	_ Sampling	Date: Novem	ber 3, 2016
Applicant/Owner: Tualatin Valley Water District	ct and City of Hillsbor	0			State: OR	_ Sampling	Point: Plot 21	
Investigator(s): John Macklin, Tony Vingiello			Section	n, Township, Ra	nge: see spreadsheet			
Landform (hillslope, terrace, etc.): swale					convex, none): none		Slope (%	o): <u>0</u>
Subregion (LRR): A- Northwest Forests and C	Coast	Lat: See	spreadsh	neet	Long: See spreadsheet		Datum: NA	AVD88
Soil Map Unit Name: See spreadsheet					NWI classi			
Are climatic / hydrologic conditions on th	e site typical for	this time of ve	ar? Ye					
Are Vegetation, Soil, or I		-			'Normal Circumstances'		es X	No
Are Vegetation, Soil, or I					eeded, explain any answ			
SUMMARY OF FINDINGS - A	-							es, etc.
Hydrophytic Vegetation Present?	Yes✓	No		la tha Camulad	I Avec			
Hydric Soil Present?	Yes ✓			Is the Sampled within a Wetlar		√ No_		
Wetland Hydrology Present?	Yes <u>✓</u>			within a wetiar	id? fes	· NO		
Remarks:								
Precipitation is high for water year	. Representativ	e of deeper i	inunda	ated part of We	etland G.			
VEGETATION – Use scientific	names of pl	ants.						
		Absolute	Domi	nant Indicator	Dominance Test wo	rksheet:		
Tree Stratum (Plot size: 30 ft 1.				ies? Status	Number of Dominant That Are OBL, FACW	Species ', or FAC: _2	2	_ (A)
2					Total Number of Dom	inant	_	
3					Species Across All St	rata: 2	2	_ (B)
4. Sapling/Shrub Stratum (Plot size: 301		0	= Tota	al Cover	Percent of Dominant That Are OBL, FACW		100	_ (A/B)
1					Prevalence Index wo	orksheet:		
2.					Total % Cover of	<u>: </u>	Multiply by:	
3.					OBL species	x 1	=	<u> </u>
4.					FACW species			
5					FAC species	x 3	=	
		0	_ = Tota	al Cover	FACU species	x 4	=	
Herb Stratum (Plot size: ^{5 ft})	50	V	FACIN	UPL species	x 5	=	
Glyceria striata Typha latifolia		30	Y Y	OBL	Column Totals:	(A)		(B)
Nuphar advena		20	N	OBL	Prevalence Inde	y = R/Δ =		
4. Polygonum hydropiperoides		15	N	OBL	Hydrophytic Vegeta			
W i i			N	OBL	✓ Dominance Test		13.	
J					Prevalence Index			
6					Morphological Ac		rovide supp	ortina
7 8					data in Remar	ks or on a se	parate shee	t)
9					Wetland Non-Vas	cular Plants ¹		
10.					Problematic Hydr	ophytic Vege	tation¹ (Expl	lain)
11.					¹ Indicators of hydric s be present, unless dis			/ must
		400	= Tota	l Cover	be present, unless dis	- Lurbeu or pro	biematic.	
Woody Vine Stratum (Plot size: 30 ft)		-					
1					Hydrophytic			
2					Vegetation Present? Y	es ✓	No	
% Bare Ground in Herb Stratum ⁰		0	_= Tota	l Cover				
Remarks:					1			

Profile Desc	cription: (Describ	e to the dept	h needed to docu	ment the	indicator	or confirm	the absence of inc	licators.)	
Depth	Matrix			ox Feature			_		
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks	
0-12	10YR 2/1	100					Mucky Loam		
12+							rock		
				_	· ——				
¹Type: C=C	oncentration, D=D	epletion, RM=	Reduced Matrix, C	S=Covere	d or Coate	ed Sand Gr	rains. ² Location:	PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators: (Appl	licable to all I	LRRs, unless other	erwise not	ed.)		Indicators for	Problematic Hydric Soils ³ :	
Histosol	` '		Sandy Redox	(S5)			2 cm Muc	k (A10)	
	pipedon (A2)		Stripped Matri	, ,			Red Parer	nt Material (TF2)	
	istic (A3)	,	Loamy Mucky			MLRA 1)	Very Sha	llow Dark Surface (TF-12)	
	en Sulfide (A4)	(8.4.4)	Loamy Gleyed		2)		Other (E	xplain in Remarks	
	d Below Dark Surfa ark Surface (A12)	ace (A11)	Depleted Matr Redox Dark S				3Indicators of L	nydrophytic vegetation and	
	Ark Surface (A12) Aucky Mineral (S1)		Depleted Dark	` ,				drology must be present,	
	Gleyed Matrix (S4)	'	Redox Depres	,	')		-	urbed or problematic.	
	Layer (if present)	<u>.</u>	_ '	(- /				'	
Type: Ro	ck								
Depth (in	ches): <u>12</u>						Hydric Soil Prese	ent? Yes √ No	
Remarks:	·						1		
	CV								
HYDROLO									
_	drology Indicator						0 1		
	•	f one required	; check all that app					ndicators (2 or more required)	
l —	Water (A1)			ained Leav		xcept MLF		Stained Leaves (B9) (MLRA 1, 2,	
	ater Table (A2)			A, and 4B)			and 4B)	
<u>√</u> Saturati			Salt Crus	. ,	(5.40)			ge Patterns (B10)	
<u>√</u> Water M			Aquatic II				-	ason Water Table (C2)	
	nt Deposits (B2)			Sulfide O		Listan Dan		ion Visible on Aerial Imagery (C9)	
	posits (B3) at or Crust (B4)			Rhizosphe of Reduce	_	_		rphic Position (D2) / Aquitard (D3)	
	posits (B5)			on Reducti				eutral Test (D5)	
	Soil Cracks (B6)			or Stressed		•	· —	Ant Mounds (D6) (LRR A)	
	on Visible on Aeria	al Imagery (B7		ρlain in Re		I) (LIXIX A		eave Hummocks (D7)	
·	y Vegetated Conca		, —	piaiii iii i ke	inanco)		11031-11	cave Hummocks (D1)	
Field Obser		ave Gariage (E							
Surface Wat		Yes ✓ N	No Depth (ii	nches). 12					
Water Table			No Depth (ii						
						- Wetl	and Hydrology Pres	sent? Yes ✓ No	
(includes car	Saturation Present? Yes No Depth (inches): surface Wetland Hydrology Present? Yes No Saturation Present? Yes No								
Describe Re	corded Data (strea	ım gauge, mo	nitoring well, aerial	photos, pr	evious ins	pections),	if available:		
Remarks:									
Water mark	s on adjacent wi	llow thicket i	ndicates water le	evel reach	es 3 ft de	еер.			

Project/Site: WWSS WTP Site		City/Cou	ınty: Washington	Co.	Sampling Date: No	ovember 3, 2016		
Applicant/Owner: Tualatin Valley Water District and City of Hillsbor	°0			State: OR				
Investigator(s): John Macklin, Tony Vingiello		Section,	Township, Ra	nge: see spreadsheet				
Landform (hillslope, terrace, etc.): hillslope toward wetland frin				convex, none): none	Slope	e (%): ⁴⁰		
	Lat: See			Long: See spreadsheet				
Soil Map Unit Name: See spreadsheet	Lui			NWI classification: See spreadsheet				
	41.1.41							
Are climatic / hydrologic conditions on the site typical for	_							
Are Vegetation, Soil, or Hydrology				'Normal Circumstances"		No		
Are Vegetation, Soil, or Hydrology	_ naturally pro	blematio	c? (If ne	eeded, explain any answe	ers in Remarks.)			
SUMMARY OF FINDINGS - Attach site ma	p showing	samp	ling point le	ocations, transects	s, important fea	tures, etc		
Hydrophytic Vegetation Present? Yes	No. ✓							
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes			s the Sampled		./			
Wetland Hydrology Present? Yes	No ✓	v	vithin a Wetlar	nd? Yes	No <u></u> ✓			
Remarks:								
Precipitation is high for water year. Southwest sid	e of Wetland	G; imm	nediately nort	h of powerlines.				
, ,		-,	, , , , , , , , , , , , , , , , , , , ,					
VEGETATION – Use scientific names of pl	ants							
	Absolute	Domin	ant Indicator	Dominance Test wor	ksheet:			
Tree Stratum (Plot size: 30 ft)			es? Status	Number of Dominant S				
1. Quercus garryana	90	Υ	FACU	That Are OBL, FACW,	'	(A)		
2. Rhamnus purshiana	50	Y	FAC	Total Number of Domi	nant			
3. Arbutus menziesii	20	N	UPL	Species Across All Stra	•	(B)		
4				Percent of Dominant S	`nooioo			
20.6	160	_ = Total	Cover	That Are OBL, FACW,		(A/B)		
Sapling/Shrub Stratum (Plot size: 30 ft)	60	Υ	FACIL					
1. Corylus cornuta	<u>60</u> 50	Y Y	FACU	Prevalence Index wo				
2. Gaultheria shallon	10	 N	FACU FAC		Multiply	-		
Rosa nutkana Amalanchier alnifolia	10	N N	FACU	OBL species				
	10	N N	FACU	FACW species				
5. Symphoicarpos albus	150	· 		FACILIANA SIGNA				
Herb Stratum (Plot size: ^{5 ft}	150	_ = Total	Cover	FACU species				
1 Polystichum munitum	30	Υ	FACU	UPL species				
2. Geranium molle	20	Y	UPL	Column Totals:	(A)	(B)		
3.				Prevalence Index	x = B/A =			
4.				Hydrophytic Vegetati	on Indicators:			
5.				Dominance Test is	s >50%			
6.				Prevalence Index	is $\leq 3.0^{1}$			
7.				Morphological Ada	aptations¹ (Provide s	upporting		
8.					s or on a separate s	sheet)		
9				Wetland Non-Vaso				
10				Problematic Hydro				
11				¹ Indicators of hydric so be present, unless dist				
		= Total	Cover	be precent, amore diet	arboa or problematic			
Woody Vine Stratum (Plot size: 30 ft)								
1				Hydrophytic				
2	•			Vegetation Present? Ye	es No_ √	<u>/</u>		
% Bare Ground in Herb Stratum ⁵⁰	0	= Total	Cover					
Remarks:								
Bare ground cover is leaf litter								

		to the dept	n needed to docum			or commi	the absence	e of indicators.)		
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	s Type ¹	Loc ²	Texture	Remarks		
0-1	10YR 2/2	100					Org. litter	moderately decomposed		
1-5	10YR 2/2	100					Loam			
5 +		<u> </u>					Rock			
		·								
	-	· ·								
		· ·								
		- ——— .								
			Reduced Matrix, CS			d Sand Gra		cation: PL=Pore Lining, M=Matrix.		
Hydric Soil I	ndicators: (Applic	able to all I	_RRs, unless other	wise note	ed.)			ors for Problematic Hydric Soils ³ :		
Histosol (· ,		Sandy Redox (S	,				m Muck (A10)		
	ipedon (A2)		Stripped Matrix		1\	MI DA 4\		d Parent Material (TF2)		
Black His	n Sulfide (A4)		Loamy Mucky N Loamy Gleyed I			WILKA 1)		ry Shallow Dark Surface (TF-12)		
	Below Dark Surfac	e (A11)	Depleted Matrix)		_ 0	her (Explain in Remarks		
	rk Surface (A12)	,	Redox Dark Sui				³ Indicate	ors of hydrophytic vegetation and		
Sandy M	ucky Mineral (S1)		Depleted Dark S	Surface (F	7)		wetla	and hydrology must be present,		
	eyed Matrix (S4)		Redox Depress	ions (F8)			unles	ss disturbed or problematic.		
	ayer (if present):									
Type: rock			<u></u>					,		
Depth (inc	hes): <u>5</u>						Hydric Soil	I Present? Yes No✓		
Remarks:										
HYDROLOG	gY									
	rology Indicators:									
_			; check all that apply	<i>(</i>)			Seco	ndary Indicators (2 or more required)		
	Water (A1)		Water-Stai		es (B9) (e	xcept MLR		Vater-Stained Leaves (B9) (MLRA 1, 2,		
	er Table (A2)			, and 4B)		Koopt III.	··· — '	4A, and 4B)		
Saturatio			Salt Crust		•			Orainage Patterns (B10)		
Water Ma	, ,		Aquatic Inv	` '	s (B13)		Dry-Season Water Table (C2)			
	t Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)		
	osits (B3)		Oxidized R			Living Roof		Geomorphic Position (D2)		
Algal Ma	t or Crust (B4)		Presence	of Reduce	ed Iron (C4	·)	s	Shallow Aquitard (D3)		
Iron Depo	osits (B5)		Recent Iro	n Reductio	on in Tille	d Soils (C6) F	FAC-Neutral Test (D5)		
Surface S	Soil Cracks (B6)		Stunted or	Stressed	Plants (D	1) (LRR A)	F	Raised Ant Mounds (D6) (LRR A)		
Inundatio	n Visible on Aerial l	lmagery (B7) Other (Exp	lain in Re	marks)		F	Frost-Heave Hummocks (D7)		
Sparsely	Vegetated Concave	e Surface (E	38)							
Field Observ										
Surface Water			lo <u>√</u> Depth (ind			1				
Water Table I			lo <u>√</u> Depth (ind			l l		,		
Saturation Pro		'es N	lo✓ Depth (ind	ches):		Wetla	and Hydrolog	y Present? Yes No _✓		
(includes cap		gauge mo	nitoring well, aerial p	photos pre	evious ins	pections) i	f available			
200020 . 100	5.454 Zata (51.541)	. gaage,e		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		p = =,, .				
Remarks:										
. torriarito.										

Project/Site: WWSS WTP Site		City/County	Washington	Co.	Sampling Date: Nover	mber 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsbo	oro			State: OR	Sampling Point: Plot 2	3
Investigator(s): John Macklin, Tony Vingiello		Section, To	wnship, Ra	nge: see spreadsheet		
Landform (hillslope, terrace, etc.): swale				convex, none): none	Slope (%	%): <u>5</u>
	Lat: See	spreadsheet		Long: See spreadsheet	Datum: N	IAVD88
Soil Map Unit Name: See spreadsheet				NWI classific		
Are climatic / hydrologic conditions on the site typical for	r this time of ve					
Are Vegetation, Soil, or Hydrology	-			"Normal Circumstances" p		No
Are Vegetation, Soil, or Hydrology				eeded, explain any answe		
SUMMARY OF FINDINGS – Attach site ma			,		,	res, etc.
	. No		<u> </u>	<u>-</u>	, I	
Hydric Soil Present? Yes ✓	No		e Sampled		, No	
Wetland Hydrology Present? Yes ✓	No	with	in a Wetlar	1d? Yes	No	
Remarks:						
Precipitation is high for water year. Plot at south	vest part of W	etland G r	near bound	dary. Paired with upland	d plot 22.	
VEGETATION – Use scientific names of p	lants.					
20 ft	Absolute			Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft 1. Malus fusca	<u>% Cover</u> 70	Species?	Status FACW	Number of Dominant Sp That Are OBL, FACW, o	4	(A)
2.						_ ('')
3.				Total Number of Domin- Species Across All Stra		(B)
4.						_ ()
20.5	70	= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of		(A/B)
Sapling/Shrub Stratum (Plot size: 30 ft)	00	V	EA (C) A /			
1. Salix lasiandra	90	<u>Y</u> Y	FACW FACW	Prevalence Index worl		
2. Spiraea douglasii			FACW		Multiply by:	
3				OBL species FACW species		
4				FAC species		
5	130	= Total Co		FACU species		
Herb Stratum (Plot size: ^{5 ft}		_ Total Co	vei	UPL species		
1. Carex obnupta	20	Υ	OBL	Column Totals:		
2						
3					= B/A =	
4				Hydrophytic Vegetatio		
5				✓ Dominance Test is		
6				Prevalence Index is		4:
7				Morphological Adap data in Remarks	ptations (Provide supp s or on a separate shee	orting et)
8				Wetland Non-Vasc		,
9				Problematic Hydron	ohytic Vegetation¹ (Exp	olain)
10				¹ Indicators of hydric soil		y must
11		- Total Car		be present, unless distu	irbed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)		= Total Cov	vei			
1				Hydrophytic		
2				Vegetation	s_ √_ No	
	•	= Total Cov	/er	Present? Yes	3 · NO	-
% Bare Ground in Herb Stratum 80				<u> </u>		
Remarks: Bare ground cover is leaf litter						
Date ground devel is lear fitter						

Profile Desc	cription: (Describe	e to the dep	th needed to docur	ment the	indicator	or confirm	the absence	of indicators.)		
Depth	Matrix			x Feature						
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc ²	<u>Texture</u>	Remarks		
0-2	10YR 2/1	100					Org. Litter	moderately decomposed		
2-6	10YR 2/1	100					Mucky loam			
6-18+	10YR 4/1	98	10YR 4/4	2	С	M	Silt			
-			-		-			·		
			-			-				
					-					
1 _{Tympo} , C=C		nlation DM	-Daduard Matrix Co		d or Coate		21 o	ection: DI -Doro Lining M-Metrix		
			=Reduced Matrix, CS LRRs, unless other			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :		
Histosol		ouble to un	Sandy Redox (icu.,			m Muck (A10)		
l —	oipedon (A2)		Stripped Matrix					Parent Material (TF2)		
	stic (A3)		Loamy Mucky N	` '	1) (excep	t MLRA 1)		ry Shallow Dark Surface (TF-12)		
	en Sulfide (A4)		Loamy Gleyed			· ,		her (Explain in Remarks		
	d Below Dark Surfa	ce (A11)	Depleted Matrix		,		0	nor (Explain in Normano		
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)		³ Indicate	ors of hydrophytic vegetation and		
	Mucky Mineral (S1)		Depleted Dark				wetla	and hydrology must be present,		
	Gleyed Matrix (S4)		Redox Depress	sions (F8)			unles	ss disturbed or problematic.		
Restrictive	Layer (if present):									
Type:								,		
Depth (in	ches):						Hydric Soil	Present? Yes No		
Remarks:										
HYDROLO										
Wetland Hy	drology Indicators	5 :								
Primary India	cators (minimum of	one require	d; check all that appl					ndary Indicators (2 or more required)		
Surface	Water (A1)		Water-Sta	ined Leav	/es (B9) (e	xcept MLF	RA V	Vater-Stained Leaves (B9) (MLRA 1, 2,		
High Wa	ater Table (A2)		1, 2, 4	A, and 4B	3)		4A, and 4B)			
Saturation	on (A3)		Salt Crust	(B11)			Drainage Patterns (B10)			
Water M	larks (B1)		Aquatic In	vertebrate	es (B13)		Dry-Season Water Table (C2)			
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide O	dor (C1)		s	Saturation Visible on Aerial Imagery (C9)		
Drift De	posits (B3)		Oxidized F	Rhizosphe	eres along	Living Roo	ots (C3) <u>√</u> G	Geomorphic Position (D2)		
	at or Crust (B4)		Presence					shallow Aquitard (D3)		
	oosits (B5)		Recent Iro	n Reduct	ion in Tille	d Soils (C6	S) <u>√</u> F	AC-Neutral Test (D5)		
	Soil Cracks (B6)		Stunted or	Stressed	l Plants (D	1) (LRR A) F	Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aeria		, , ,	olain in Re	emarks)		F	rost-Heave Hummocks (D7)		
	y Vegetated Conca	ve Surface (B8)							
Field Obser	vations:									
Surface Wat			No <u>✓</u> Depth (in							
Water Table	Present?	Yes	No Depth (in	ches):		_		,		
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No										
(includes cap		m dollac ***	anitoring wall sarie!	nhotos =	rovious is	noctions)	if available:			
Describe Re	Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:										

Project/Site: WWSS WTP Site		City/Count	y: Washington	Co.	Sampling Date: Nove	mber 3, 2016		
Applicant/Owner: Tualatin Valley Water District and City of Hillsbo	oro			State: OR				
Investigator(s): John Macklin, Tony Vingiello		Section, T	ownship, Ra	nge: see spreadsheet				
Landform (hillslope, terrace, etc.): wetland depression				convex, none): none	Slope (%): <u>0</u>		
	Lat: See	spreadsheet		Long: See spreadsheet	Datum: 1	NAVD88		
Soil Map Unit Name: See spreadsheet				NWI classification: See spreadsheet				
Are climatic / hydrologic conditions on the site typical for	r this time of ve							
Are Vegetation, Soil, or Hydrology	-			'Normal Circumstances" p		No		
Are Vegetation, Soil, or Hydrology				eeded, explain any answe				
SUMMARY OF FINDINGS – Attach site ma				-		ıres, etc		
Hydrophytic Vegetation Present? Yes✓	No				<u>· </u>			
Hydric Soil Present? Yes ✓	No	l l	he Sampled		/ No			
Wetland Hydrology Present? Yes ✓	No	Wit	hin a Wetlar	nd? Yes <u> </u>	No			
Remarks:								
Precipitation is high for water year Represents in	undated portion	on of wes	t side of W	etland G.				
VEGETATION – Use scientific names of p	lants.							
To a Otto to an (Distance 30 ft	Absolute		nt Indicator	Dominance Test work	sheet:			
Tree Stratum (Plot size: 30 ft) 1.			Status	Number of Dominant S That Are OBL, FACW,		(A)		
2				Total Number of Domir	ıant			
3				Species Across All Stra	ıta: ²	(B)		
4				Percent of Dominant S				
Sapling/Shrub Stratum (Plot size: 30 ft)	0	_ = Total C	over	That Are OBL, FACW,	or FAC: 100	(A/B)		
1. Spiraea douglasii	60	Υ	FACW	Prevalence Index wor	ksheet:			
2. Salix lasiandra	50	Υ	FACW	Total % Cover of:	Multiply by:	·		
3.				OBL species	x 1 =			
4				FACW species	x 2 =			
5				FAC species	x 3 =			
5 ft	110	_ = Total C	over	FACU species	x 4 =			
Herb Stratum (Plot size: 5 ft)				UPL species				
1				Column Totals:	(A)	(B)		
2				Prevalence Index	z = B/A =			
3 4				Hydrophytic Vegetation				
5.				✓ Dominance Test is				
6.				Prevalence Index i	s ≤3.0 ¹			
7				Morphological Ada data in Remark	ptations ¹ (Provide sup s or on a separate she	porting et)		
8				Wetland Non-Vaso	ular Plants ¹			
9				Problematic Hydro	phytic Vegetation ¹ (Ex	plain)		
10 11				¹ Indicators of hydric so		gy must		
111.	_	= Total Co		be present, unless distr	urbed or problematic.			
Woody Vine Stratum (Plot size: 30 ft)	-							
1		-		Hydrophytic				
2				Vegetation Present? Ye	s V No			
Of Dans Crawd in 11-st Officer 0	0	_= Total Co	over	10		_		
% Bare Ground in Herb Stratum 0 Remarks:								
Bare ground is inundated organic substrate								
Date ground to intilidated organic substrate								

	Matrix	to the dep	tn needed to docur	x Features		or commitm	ule absence	oi iliulcators.)		
Depth (inches)	Color (moist)	%	Color (moist)	% reatures	Type ¹	Loc ²	Texture	Remarks		
0-12+	10YR 2/1	100					Mucky Loam			
						-				
-						-				
				·						
				·						
1		-l-ti DM	Deduced Metric Of					ation Di Dona Lining M Matrix		
			Reduced Matrix, CS			a Sana Gra		ation: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils ³ :		
Histosol		Jabic to all	Sandy Redox (.u.,			n Muck (A10)		
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)		
Black His			Loamy Mucky N) (except	MLRA 1)	· 	y Shallow Dark Surface (TF-12)		
	n Sulfide (A4)		Loamy Gleyed	Matrix (F2)		-	ner (Explain in Remarks		
	d Below Dark Surfac	ce (A11)	Depleted Matrix				_			
	ark Surface (A12)		Redox Dark Su	. ,	_\			rs of hydrophytic vegetation and		
	lucky Mineral (S1) sleyed Matrix (S4)		Depleted Dark Services Redox Depress		7)			nd hydrology must be present, s disturbed or problematic.		
	_ayer (if present):		Redox Depress	ions (Fo)			unies	s disturbed or problematic.		
Type:	ayer (ii present).									
· · ·	ches):						Hydric Soil	Present? Yes No		
Remarks:							Tiyane oon	11030H: 103 NO		
Nemarks.										
HYDROLO	GY									
Wetland Hyd	drology Indicators	:								
Primary Indic	ators (minimum of	one required	d; check all that appl	y)			Secon	dary Indicators (2 or more required)		
✓ Surface	` '		Water-Sta	ined Leave	es (B9) (e :	xcept MLR	RA W	ater-Stained Leaves (B9) (MLRA 1, 2,		
	ter Table (A2)		1, 2, 4	A, and 4B))			4A, and 4B)		
✓ Saturation			Salt Crust	,			Drainage Patterns (B10)			
	arks (B1)		Aquatic In					ry-Season Water Table (C2)		
	nt Deposits (B2)		Hydrogen					aturation Visible on Aerial Imagery (C9)		
	posits (B3)				_	Living Roof		eomorphic Position (D2)		
	it or Crust (B4)		Presence					nallow Aquitard (D3)		
	osits (B5)					d Soils (C6)		AC-Neutral Test (D5)		
	Soil Cracks (B6)	Imaganı (D.	Stunted or			1) (LRR A)		aised Ant Mounds (D6) (LRR A)		
	on Visible on Aerial Vegetated Concav			nain in Re	marks)		<u> </u>	rost-Heave Hummocks (D7)		
Field Observ		e Surface (i	50)							
Surface Water		ves √	No Depth (in	ches). 12						
Water Table			No Depth (in		ace	_				
Saturation Pr			No Depth (in			- Wotla	and Hydrology	Present? Yes No		
(includes cap		165	No Deptil (iii	CHES)		_ vveila	and riyurology	/ Flesent: TesNO		
Describe Red	corded Data (stream	n gauge, mo	onitoring well, aerial	photos, pre	evious ins	pections), i	if available:			
Remarks:										

Project/Site: WWSS WTP Site	(City/County	. Washington	Co.	Sampling Date: November	3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR		
Investigator(s): John Macklin, Tony Vingiello	;	Section, To	wnship, Rar	nge: _see spreadsheet		
Landform (hillslope, terrace, etc.): swale					Slope (%): <u>{</u>	5
Subregion (LRR): A- Northwest Forests and Coast				Long: See spreadsheet	Datum: NAVD	188
Soil Map Unit Name: See spreadsheet				NWI classifica		
Are climatic / hydrologic conditions on the site typical for this	time of vea					
Are Vegetation, Soil, or Hydrology si	-			Normal Circumstances" pr		
Are Vegetation, Soil, or Hydrology na				eded, explain any answers		
SUMMARY OF FINDINGS – Attach site map s						, etc.
Hydrophytic Vegetation Present? Yes ✓ No.)					
Hydric Soil Present? Yes ✓ No			ie Sampled iin a Wetlan		No	
Wetland Hydrology Present? Yes No		WILI	iii a vvetiaii	u! les	NO	
Remarks:						
Precipitation is high for water year.						
VEGETATION – Use scientific names of plant				<u>, </u>		
Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?		Dominance Test works		
1				Number of Dominant Spe That Are OBL, FACW, or		(A)
2				Total Number of Domina	unt	
3				Species Across All Strata		(B)
4				Percent of Dominant Spe	ecies	
Sapling/Shrub Stratum (Plot size: 30 ft)	0	= Total Co	ver	That Are OBL, FACW, or		(A/B)
1 Rosa pisocarpa	60	Υ	FAC	Prevalence Index work	sheet:	
2. Spiraea douglasii	30	Y	FACW	Total % Cover of:	Multiply by:	_
3				OBL species	x 1 =	_
4				FACW species	x 2 =	_
5				FAC species	x 3 =	-
Hart Otratage (Dietains 5ff	90	= Total Co	ver		x 4 =	
Herb Stratum (Plot size: 5 ft)					x 5 =	
1 2				Column Totals:	(A)	_ (B)
3				Prevalence Index	= B/A =	_
4				Hydrophytic Vegetation	n Indicators:	
5.				✓ Dominance Test is >	>50%	
6				Prevalence Index is	≤3.0 ¹	
7				Morphological Adapt	tations ¹ (Provide supportion on a separate sheet)	ng
8				Wetland Non-Vascul	'	
9					hytic Vegetation ¹ (Explain	1)
10					and wetland hydrology m	
11	_	= Total Co		be present, unless distur	bed or problematic.	
Woody Vine Stratum (Plot size: 30 ft)	-	- Total Co	vei			
1				Hydrophytic		
2				Vegetation Present? Yes	√ No	
0/ Page Craying in 11 at Ottation, 100	0	= Total Co	ver	1.000111. 163		
% Bare Ground in Herb Stratum 100 Remarks:						
Bare ground cover is leaf litter and inundated substra	ite.					
_						

Depth	Matrix	to the dep	needed to docun	x Feature		or commi	the absence	or indicators.)		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks		
0-14	10YR 2/1	100					Mucky loam			
14-18+	10YR 3/1	95	10YR 5/3	5	С	M	Clay loam			
-			-	-	-					
					-					
			=Reduced Matrix, CS			ed Sand Gra		ation: PL=Pore Lining, M=Matrix.		
-		able to all	LRRs, unless other		ed.)			rs for Problematic Hydric Soils ³ :		
Histosol			Sandy Redox (S					Muck (A10)		
Black His	ipedon (A2)		Stripped Matrix Loamy Mucky M		1) (evcen	+ MI D A 1)		Parent Material (TF2) / Shallow Dark Surface (TF-12)		
	n Sulfide (A4)		Loamy Gleyed N			(WILKA I)	-	er (Explain in Remarks		
	l Below Dark Surfac	ce (A11)	Depleted Matrix	•	,		0	er (Explain in Remarks		
	rk Surface (A12)	. ,	Redox Dark Sur				³ Indicato	rs of hydrophytic vegetation and		
	ucky Mineral (S1)		Depleted Dark S		7)			nd hydrology must be present,		
	leyed Matrix (S4)		Redox Depress	ions (F8)			unless	s disturbed or problematic.		
	ayer (if present):									
Type:	Janah.						Unadaia Cail	Brassut2 Vas √ Na		
	ches):						nyaric Soil	Present? Yes / No		
Remarks:										
HYDROLO	GY									
Wetland Hyd	Irology Indicators:									
Primary Indic	ators (minimum of o	one require	d; check all that apply	/)			Secon	dary Indicators (2 or more required)		
,	Water (A1)		Water-Stai	ned Leav	es (B9) (e	except MLR	RA W	ater-Stained Leaves (B9) (MLRA 1, 2,		
	ter Table (A2)			, and 4B)			4A, and 4B)		
✓ Saturation			Salt Crust	• •			Drainage Patterns (B10)			
Water Ma			Aquatic In\		. ,		Dry-Season Water Table (C2)			
	t Deposits (B2)		Hydrogen			5		aturation Visible on Aerial Imagery (C9)		
	osits (B3)				_	Living Roof		eomorphic Position (D2)		
	t or Crust (B4)		Presence o				· 	nallow Aquitard (D3)		
	osits (B5) Soil Cracks (B6)					d Soils (C6) 01) (LRR A)		AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)		
	on Visible on Aerial	Imagery (F				/		ost-Heave Hummocks (D7)		
	Vegetated Concav							201100101101101010101010101010101010101		
Field Observ			,							
Surface Water	er Present? Y	es/es	No <u>✓</u> Depth (inc	ches):						
Water Table			No Depth (inc							
Saturation Pr			No Depth (inc			Wetla	and Hydrology	Present? Yes No		
(includes cap	illary fringe)									
Describe Rec	corded Data (stream	ı gauge, m	onitoring well, aerial p	pnotos, pr	evious ins	spections), i	ı avallable:			
Domanic:										
Remarks:										

Project/Site: WWSS WTP Site	(City/Count	y: Washington	Co.	Sampling Date: November 3, 2016
Applicant/Owner: Tualatin Valley Water District and City of Hillsboro				State: OR	
Investigator(s):	;	Section, To	ownship, Rar	nge: see spreadsheet	
Landform (hillslope, terrace, etc.): hillslope toward wetland fringe					Slope (%): 100
	Lat: See s				Datum: NAVD88
Soil Map Unit Name: See spreadsheet				NWI classifica	
Are climatic / hydrologic conditions on the site typical for th	is time of you				
	-				
Are Vegetation, Soil, or Hydrology					resent? Yes X No
Are Vegetation, Soil, or Hydrology	naturally pro	blematic?	(If ne	eded, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS – Attach site map	showing	samplir	ng point lo	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes N	do ✓				
Hydric Soil Present? Yes N			he Sampled		🗸
Wetland Hydrology Present? Yes N	No ✓	with	hin a Wetlan	nd? Yes	No
Remarks:					
Precipitation is high for water year Adjoins Wetland	I G.				
VEGETATION – Use scientific names of plan	nts.				
	Absolute	Dominan	t Indicator	Dominance Test works	sheet:
<u>Tree Stratum</u> (Plot size: 30 ft)	% Cover			Number of Dominant Sp	
1. Quercus garryana	90	Y	FACU	That Are OBL, FACW, o	r FAC: 1 (A)
2. Rhamnus purshiana	_ 50	Y	FAC	Total Number of Domina	ant
3. Arbutus menziesii		N	UPL	Species Across All Strat	a: <u>6</u> (B)
4			·	Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 30 ft)	160	= Total C	over	That Are OBL, FACW, o	
1 Corylus cornuta	60	Υ	FACU	Prevalence Index work	sheet:
2 Gaultheria shallon	50	Y	FACU		Multiply by:
3. Rosa nutkana	10	N	FAC		x 1 =
4. Amalanchier alnifolia	10	N	FACU		x 2 =
5. Symphoicarpos albus	10	N	FACU	· ·	x 3 =
	150	= Total C	over	*	x 4 =
Herb Stratum (Plot size: 5 ft)		•			x 5 =
1. Polystichum munitum		<u>Y</u>		Column Totals:	(A) (B)
2. Geranium molle		<u>Y</u>	UPL		
3		ī			= B/A =
4				Hydrophytic Vegetatio	
5				Dominance Test is	
6				Prevalence Index is	
7					otations ¹ (Provide supporting or on a separate sheet)
8				Wetland Non-Vascu	• • • • • • • • • • • • • • • • • • • •
9					hytic Vegetation ¹ (Explain)
10.					and wetland hydrology must
11				be present, unless distu	rbed or problematic.
Woody Vine Stratum (Plot size: 30 ft)		= Total Co	over		
1				Hydrophytic	
2.				Vegetation	/
	0	= Total Co	ver	Present? Yes	No <u>√</u>
% Bare Ground in Herb Stratum 50	<u></u>				
Remarks:	o ole				
Bare ground cover is leaf litter and moss covered ro	JCK.				
j					

	ription: (Describe	to the depti				or confirm	the absence	of Indicators.)		
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type ¹	Loc ²	Texture	Remarks		
0-1	10YR 2/2	100 -	-			-	Org. litter	moderately decomposed		
1-5	10YR 2/2	100 -	-				Loam			
5+		·					rock			
				-						
		· —— -		-						
		· —— -								
	ncentration, D=Dep					d Sand Gra		cation: PL=Pore Lining, M=Matrix.		
Histosol (ndicators: (Applic	able to all L	Sandy Redox (S		a.)			ors for Problematic Hydric Soils ³ : m Muck (A10)		
	ipedon (A2)	_	Stripped Matrix	•				d Parent Material (TF2)		
Black His		_	Loamy Mucky N		l) (except	MLRA 1)		ry Shallow Dark Surface (TF-12)		
	n Sulfide (A4)	_	Loamy Gleyed N)			her (Explain in Remarks		
	Below Dark Surfac	e (A11) _	Depleted Matrix				3, ,, ,			
	rk Surface (A12) ucky Mineral (S1)	-	Redox Dark Sur Depleted Dark S	. ,	7)			ors of hydrophytic vegetation and and hydrology must be present,		
	leyed Matrix (S4)	_	Redox Depress		')			ss disturbed or problematic.		
	ayer (if present):		<u> </u>					·		
Type: rock										
Depth (inc	hes): <u>5</u>		<u>—</u>				Hydric Soil	Present? Yes No/		
Remarks:							•			
HYDROLOG	ΒΥ									
	rology Indicators:									
_	ators (minimum of c		check all that apply	/)			Seco	ndary Indicators (2 or more required)		
Surface \	Nater (A1)		Water-Stai	ned Leave	es (B9) (e :	xcept MLR				
High Wat	ter Table (A2)			, and 4B)		·		4A, and 4B)		
Saturatio	n (A3)		Salt Crust	(B11)			·	Prainage Patterns (B10)		
Water Ma			Aquatic In\					Ory-Season Water Table (C2)		
	t Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)		
	osits (B3)		Oxidized R		_	_		Geomorphic Position (D2)		
_	t or Crust (B4)		Presence o					Shallow Aquitard (D3)		
Iron Depo	Soil Cracks (B6)		Recent Iron Stunted or				· —	FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)		
	on Visible on Aerial I	magery (B7)				I) (LKK A)		Frost-Heave Hummocks (D7)		
	Vegetated Concave						<u> </u>	(2.7)		
Field Observ	rations:	`	,							
Surface Wate	er Present? Y	es N	o <u>√</u> Depth (ind	ches):		_				
Water Table I	Present? Y	es N	o <u>✓</u> Depth (ind	ches):		_		,		
Saturation Pro		es N	o <u>√</u> Depth (ind	ches):		Wetla	and Hydrolog	y Present? Yes No		
(includes cap	illary fringe) orded Data (stream	dalide mor	uitoring well aerial r	photos pre	avious ins	nections) i	f available.			
Describe Neo	orded Data (Stream	gauge, mor	morning well, aeriai p	niotos, pre	cvious iris	pections), i	ii avallabic.			
Remarks:										

APPENDIX D: SITE PHOTOGRAPHS



Photo 1: Facing east at the inundated portion of Wetland A (November 3, 2016).



Photo 2: Facing north at Wetland B (November 3, 2016).



Photo 3: Facing west at Wetland B (November 3, 2016).



Photo 2: Facing north at the west side of the Wetland C boundary marked by orange flagging. (November 3, 2016).



Photo 5: Facing west towards Wetland C (November 3, 2016



Photo 6: Facing southwest along the Wetland C boundary. (November 3, 2016).



Photo 7: Facing south toward the inundated portion of Wetland D (November 3, 2016).



Photo 8: Facing northeast at Wetland D (November 3, 2016).



Photo 9: Facing east at the western end of Wetland E (November 3, 2016).



Photo 10: Facing northwest toward the northern boundary of Wetland F (November 3, 2016).



Photo 11: Facing southwest at the southern end of Wetland F (November 3, 2016).



Photo 12: Facing southwest toward the northern boundary of Wetland F (November 3, 2016).



Photo 13: Facing west at the eastern boundary of Wetland G (November 4, 2016).



Photo 14: Facing southwest toward the center of Wetland G (November 4, 2016).

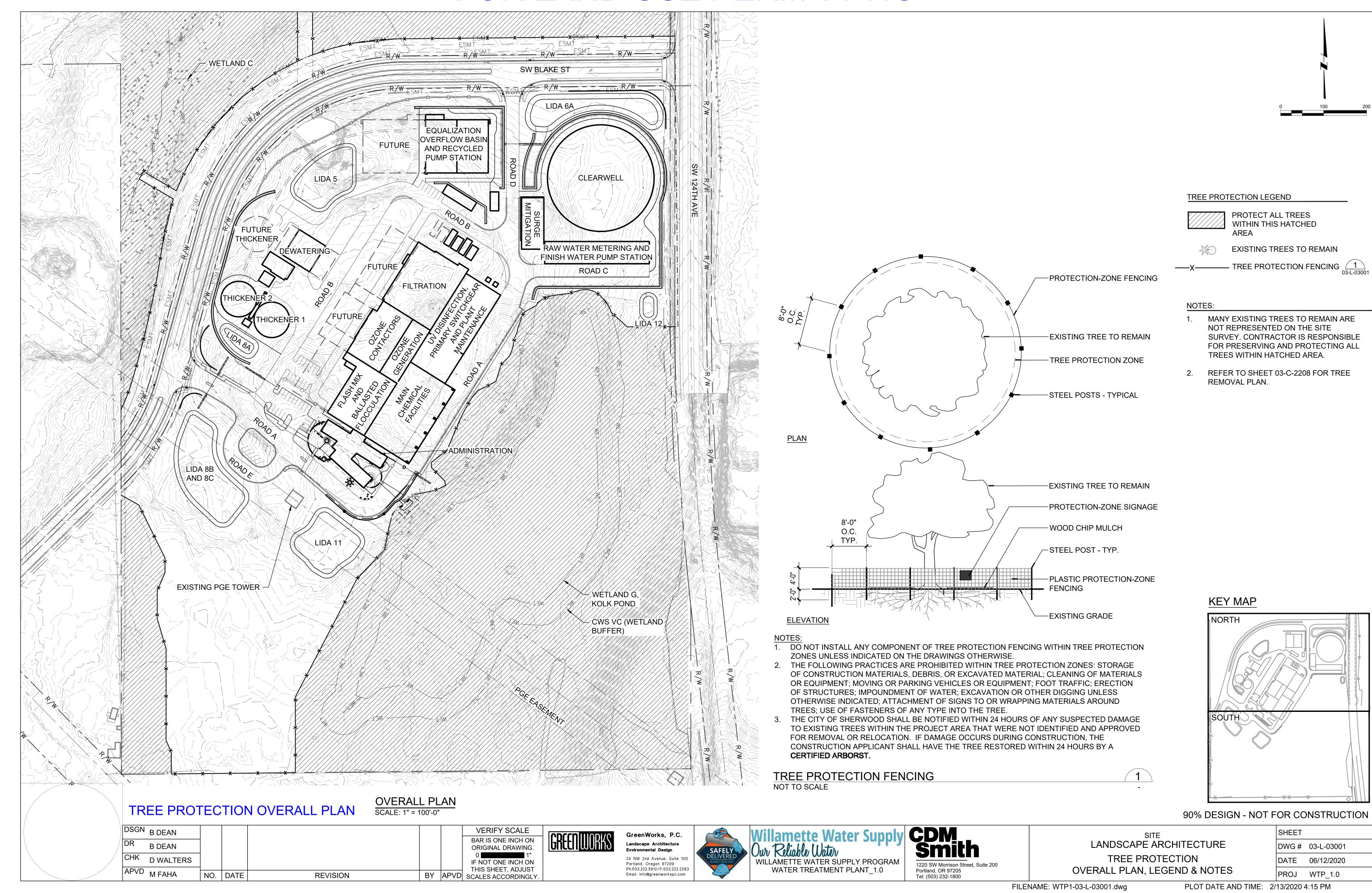


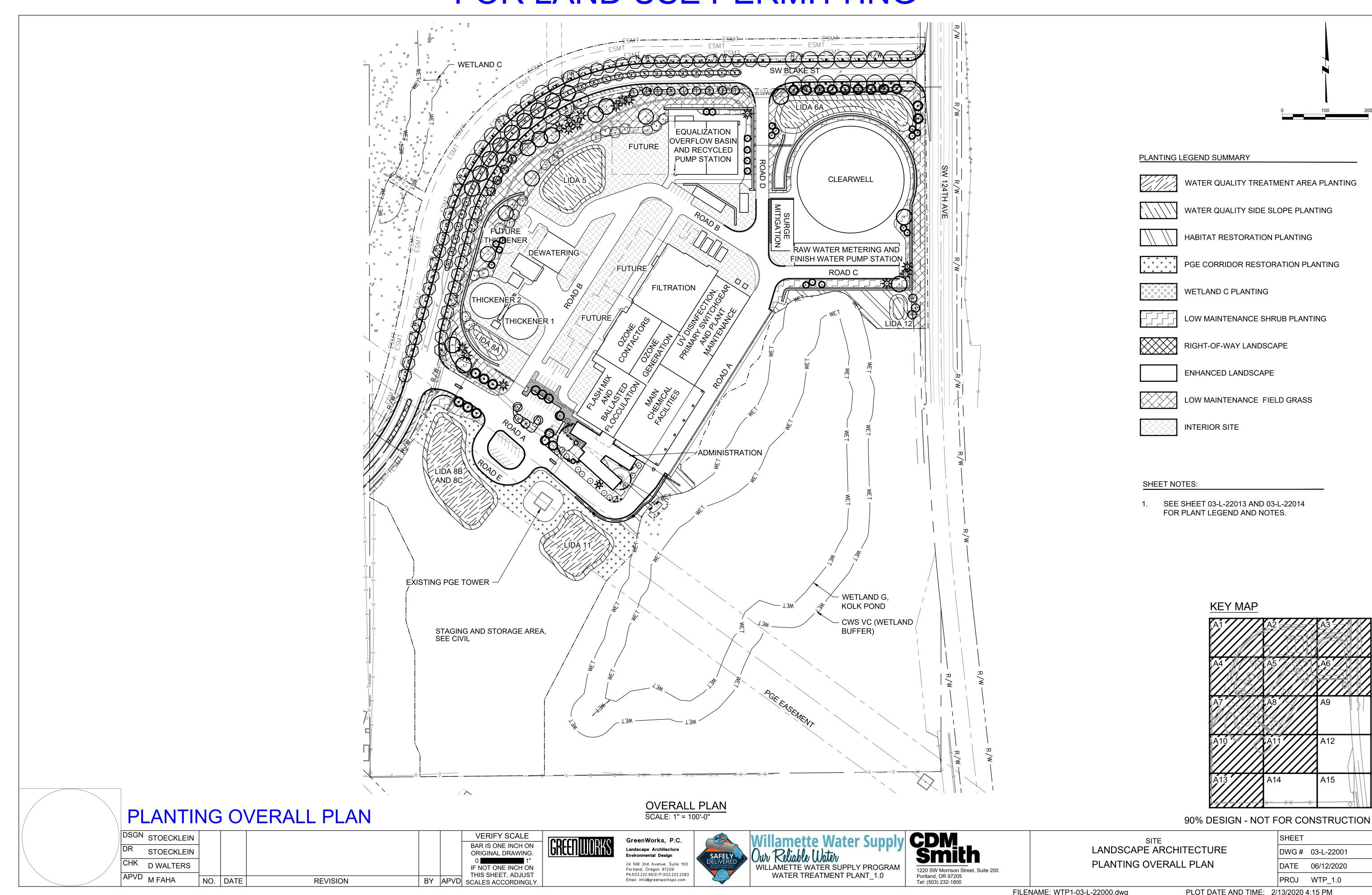
Photo 15: Facing east from the eastern boundary of Wetland G toward Plot 20 (November 4, 2016).



Photo 16: Facing west from within Wetland G toward the western boundary (November 4, 2016).

APPENDIX E: LANDSCAPE DESIGN SHEETS

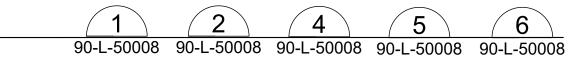




PLANTING SCHEDULE

	SITE TREES	90-L-50008 90-L-5	8 50008 90-L-50008	9 90-L-50008	90-L-50009
	BOTANICAL NAME	COMMON NAME	SIZE & TYPE	SPACING	QTY.
+	ACER CIRCINATUM	VINE MAPLE	5 GAL. CONT.	AS SHOWN	
	— ACER TRIFLORUM	ROUGH BARK MAPLE	2" CAL., B&B	AS SHOWN	
	— ACER MACROPHYLLUM	BIGLEAF MAPLE	2" CAL., B&B	AS SHOWN	
The state of the s	CALOCEDRUS DECURRENS	INCENSE CEDAR	6' HT. MIN., B&B	AS SHOWN	
+	- CERCIS CANADENSIS	MULTI-TRUNK EASTERN REDBUD	2" CAL., B&B	AS SHOWN	
÷ + =	CORNUS FLORIDA 'EDDIES WHITE WONDER'	FLOWERING DOGWOOD	2" CAL., B&B	AS SHOWN	
+ =	— PINUS PONDEROSA WILLAMETTENSIS	WILLAMETTE VALLEY PONDEROSA PINE	6' HT. MIN., B&B	AS SHOWN	
	PSEUDOTSUGA MENZIESII	DOUGLAS FIR	6' HT. MIN., B&B	AS SHOWN	
	— QUERCUS GARRYANA	OREGON OAK	2" CAL., B&B	AS SHOWN	
	RHAMNUS PURSHIANA	CASCARA	2" CAL., B&B	AS SHOWN	
	STREET TREES				
+	- GLEDITSIA TRIACANTHOS INERMIS	THORNLESS HONEYLOCUST	2" CAL., B&B	AS SHOWN	
	NYSSA SYLVATICA	BLACK TUPELO	2" CAL., B&B	AS SHOWN	
	— QUERCUS PALUSTRIS	PIN OAK	2" CAL., B&B	AS SHOWN	
	— ZELKOVA SERRATA 'GREEN VASE'	GREEN VASE SAWLEAF ZELKOVA	2" CAL., B&B	AS SHOWN	

SITE PLANTING



26,500 SF

LOW MAINTENANCE SHRUB PLANTING INSTALL THE FOLLOWING PLANTS IN GROUPS OF 7, 9 OR 11 - GROUPS TO BE EVENLY DISTRIBUTED THROUGHOUT PLANTING ZONE.

BOTANICAL NAME COMMON NAME SPACING SIZE & TYPE 2 GAL. CONT. ST. HELENA MANZANITA 36" O.C. ARCTOSTAPHYLOS MANZANITA 'ST. HELENA' CEANOTHUS THYRSIFLORUS 'OREGON MIST' OREGON MIST WILD LILAC 2 GAL. CONT. 36" O.C. **HOLODISCUS DISCOLOR** OCEANSPRAY 1 GAL. CONT. 24" O.C. MAHONIA AQUIFOLIUM OREGON GRAPE 24" O.C. 1 GAL. CONT. PACIFIC WAX MYRTLE 2 GAL. CONT 36" O.C. MYRICA CALIFORNICA PHILADELPHUS LEWISII 'BLIZZARD' **BLIZZARD MOCK ORANGE** 2 GAL. CONT. 36" O.C. PHYSOCARPUS CAPITATUS PACIFIC NINEBARK 2 GAL. CONT. 36" O.C. RIBES SANGUINEUM RED FLOWERING CURRANT 36" O.C. 2 GAL. CONT. **ROSA GYMNOCARPA BALDHIP ROSE** 36" O.C. 2 GAL. CONT. 1 GAL. CONT. 24" O.C. SYMPHORICARPOS ALBUS SNOWBERRY

APPLY SUNMARK SEEDS NATIVE ECO PRAIRIE SEED MIX TO ACHIEVE FULL COVERAGE 1.5 LBS/SQ. FT.

RIGHT-OF-WAY LANDSCAPE

SPACING QTY. **BOTANICAL NAME COMMON NAME** SIZE & TYPE 10,835 SF 24" O.C. **ROCK ROSE** 1 GAL. CONT. CISTUS X HYBRIDUS CORNUS SERICEA 'KELSEYI' KELSEY DOGWOOD 24" O.C. 1 GAL. CONT. TUFTED-HAIR GRASS DESCHAMPSIA CESPITOSA 24" O.C. 1 GAL. CONT. GAILLARDIA X 'ARIZONA SUN' 1 GAL. CONT. 24" O.C. ROZANNE CRANESBILL 12" 0.C. OREGON IRIS 1 GAL. CONT. COMPACT MUGO PINE PINUS MUGO 'SHERWOOD COMPACT' 2 GAL. CONT. 24" O.C.

17,380 SF

ENHANCED LANDSCAPE BOTANICAL NAME COMMON NAME SPACING SIZE & TYPE QTY. ARCTOSTAPHYLOS UVA-URSI KINNIKINNICK 1 GAL. CONT. 24" O.C. CORNUS SERICEA 'KELSEYI' KELSEY DOGWOOD 1 GAL. CONT. 24" O.C. DESCHAMPSIA CESPITOSA TUFTED HAIR GRASS 1 GAL. CONT. 24" O.C.

IRIS SIBERICA SIBERIAN IRIS 1 GAL. CONT. 24" O.C. MUHLENBERGIA CAPILLARIS PINK MUHLY GRASS 1 GAL. CONT. 24" O.C. RIBES SANGUINEUM RED-FLOWERING CURRANT 2 GAL. CONT. 36" O.C. CEANOTHUS X PALLIDUS 'MINMARI' MARIE BLEU NEW JERSEY TEA 2 GAL. CONT. 24" O.C.

83,020 SF

LOW MAINTENANCE FIELD GRASS

SUNMARK SEEDS: NATIVE UPLANDS SEED MIX

43.71 LBS/ACRE

OTHER

120,300 SF

INTERIOR SITE

SEE SHERWOOD CITY CODE

PLANTING LEGEND AND NOTES 1

DSGN STOECKLEIN STOECKLEIN CHK D WALTERS APVD M FAHA

NO. DATE **REVISION**

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST BY APVD SCALES ACCORDINGLY.



GreenWorks, P.C. Landscape Architecture Environmental Design 24 NW 2nd Avenue, Suite 100 Portland, Oregon 97209 Ph:503.222.5612/F:503.222.2283 Email: info@greenworkspc.com





90% DESIGN - NOT FOR CONSTRUCTION

LANDSCAPE ARCHITECTURE PLANTING LEGEND AND NOTES 1 SHEET DWG # 03-L-22013 DATE 06/12/2020 PROJ WTP 1.0

PLANTING SCHEDULE WATER QUALITY, RESTORATION PLANTING AND SEED AREAS 90-L-50008 90-L-50008 90-L-50008 90-L-50008 90-L-50008 **BOTANICAL NAME COMMON NAME** SIZE & TYPE # PER PLOT **SPACING TOTAL QTY** WATER QUALITY TREATMENT AREA PLANTING **CAREX DENSA** DENSE SEDGE 1" PLUG 6 / SF **SLOUGH SEDGE** 6 / SF **CAREX OBNUPTA** 1" PLUG XX SF 6 / SF JUNCUS EFFUSUS VAR. PACIFICUS SOFT RUSH 1" PLUG 6 / SF JUNCUS PATENS CALIFORNIA GRAY RUSH 1" PLUG **SCIRPUS MICROCARPUS** 6 / SF SMALL-FRUITED BULLRUSH 1" PLUG WATER QUALITY SIDE SLOPE PLANTING **CORNUS SERICEA** RED-OSIER DOGWOOD 2 GAL CONT PHILADELPHUS LEWISII **MOCK ORANGE** 2 GAL CONT **ROSA PISOCARPA SWAMP ROSE** 1 GAL CONT XX SF SPIRAEA DOUGLASII DOUGLAS' SPIRAEA 1 GAL CONT SYMPHORICARPOS ALBUS **SNOWBERRY** 1 GAL CONT APPLY SUNMARK SEEDS NATIVE RIPARIAN SEED MIX TO ACHIEVE FULL COVERAGE 1 LB/1,000 SF HABITAT RESTORATION PLANTING VINE MAPLE 2 GAL CONT ACER CIRCINATUM ACER MACROPHYLLUM **BIGLEAF MAPLE** 2 GAL CONT 238,300 SF AMELANCHIER X GRANDIFLORA APPLE SERVICEBERRY 2 GAL CONT PACIFIC MADRONE 2 GAL CONT ARBUTUS MENZIESII **DOUGLAS FIR** 2 GAL CONT PSEUDOTSUGA MENZIESII **QUERCUS GARRYANA OREGON OAK** 2 GAL CONT **CASCARA** RHAMNUS PURSHIANA 2 GAL CONT SHRUBS **OCEANSPRAY** 1 GAL CONT. HOLODISCUS DISCOLOR **OREGON GRAPE** MAHONIA AQUIFOLIUM 1 GAL CONT. **RIBES SANGUINEUM RED-FLOWERING CURRANT** 2 GAL CONT. **ROSA NUTKANA NOOTKA ROSE** 2 GAL CONT. 1 GAL CONT. VACCINIUM OVATUM **EVERGREEN HUCKLEBERRY** 2 GAL CONT. APPLY SUNMARK SEEDS NATIVE MEADOW MIX TO ACHIEVE FULL COVERAGE 1 LB/1,000 SF PGE CORRIDOR RESTORATION PLANTING HOLODISCUS DISCOLOR **OCEANSPRAY** 1 GAL CONT. MAHONIA AQUIFOLIUM **OREGON GRAPE** 1 GAL CONT. RIBES SANGUINEUM **RED-FLOWERING CURRANT** 2 GAL CONT. XX SF **ROSA NUTKANA NOOTKA ROSE** 2 GAL CONT. SYMPHORICARPUS ALBUS **SNOWBERRY** 1 GAL CONT. VACCINIUM OVATUM **EVERGREEN HUCKLEBERRY** 2 GAL CONT. APPLY SUNMARK SEEDS NATIVE MEADOW MIX TO ACHIEVE FULL COVERAGE 1 LB/1,000 SF **WETLAND C PLANTING** PSEUDOTSUGA MENZIESI **DOUGLAS FIR** 2 GAL CONT., 3' MIN. 25' O.C. 11 1,080 SF **SHRUBS** 1 GAL CONT., 1.5' MIN. HOLODISCUS DISCOLOR **OCEANSPRAY** 2.5' O.C. 22 2.5' O.C. RIBES SANGUINEUM RED FLOWERING CURRANT 1 GAL CONT., 1.5' MIN. **ROSA GYMNOCARPA BALDHIP ROSE** 1 GAL CONT., 1.5' MIN. 2.5' O.C. 11 APPLY SUNMARK SEEDS NATIVE UPLANDS MIX TO ACHIEVE FULL COVERAGE 1 LB/1,000 SF

WATER QUALITY AND RESTORATION PLANTING NOTES

- 1. PRIOR TO INSTALLING PLANTING SOIL, VERIFY SUBGRADE IS SET AT PROPER ELEVATIONS TO ACCOMMODATE FULL PLANTING SOIL AND MULCH DEPTHS. CONFIRM SUBGRADE MEETS ALL REQUIRED CONDITIONS INCLUDING DEBRIS AND STONE REMOVAL, COMPACTION LEVELS, SCARIFICATION, ETC.
- 2. CONTRACTOR SHALL PROVIDE PLANTING SOIL TO ALL PLANTING AREAS TO DEPTHS SHOWN IN THE DETAILS. APPLY MULCH TO ALL PLANTING AREAS EXCEPT THE TREATMENT AREA AT A DEPTH OF 3" AND 18" DIAMETER TO ALL SHRUBS AND TREES INSTALLED.
- 3. FOR TREATMENT AREA, DETENTION/MID-SLOPE AREA, AND FREEBOARD AREA PLANTING ZONES, TILL THE SUBGRADE TO A DEPTH OF 4". INSTALL 12 INCH DEPTH OF PLANTING SOIL. PLANTING SOIL SHALL BE A BLEND OF LOAMY SOIL, SAND AND COMPOST THAT IS 30-40% COMPOST (BY VOLUME).
- 4. FOR UPSLOPE AND UPLAND AREA PLANTING ZONES, TILL THE SUBGRADE TO A DEPTH OF AT LEAST 4 INCHES. INCORPORATE CLEAN COMPOST WITH TOPSOIL (TO MAKE PLANTING SOIL) AND INSTALL TO A DEPTH OF 12 INCHES PER CLEAN WATER SERVICE'S STANDARDS. APPENDIX A, PLANTING REQUIREMENTS.
- 5. ALL PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS PROVIDED AS PART OF THE CONSTRUCTION DOCUMENT PACKAGE. WATER QUALITY FACILITIES SHALL BE PLANTED PER CWS R&O 19-5 Appendix A 2.3.c-e. & 2.5a-c & 2.6b,c,d,e 2.4a-f.
- QUANTITIES ARE LISTED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL COUNTS MUST BE VERIFIED BY THE CONTRACTOR. IN THE CASE OF A DISCREPANCY BETWEEN THE LEGEND AND THE PLAN, PLANTS INDICATED ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN THE LEGEND.
- DEEP ROOTING TREES AND SHRUBS (E.G. WILLOW) SHALL NOT BE PLANTED ON TOP OF CONCRETE PIPES, OR WITHIN 10 FEET OF RETAINING WALLS. INLET/OUTLET STRUCTURES OR OTHER CULVERTS. ACTUAL DEPTH AND LOCATION OF UNDERGROUND OR OVERHEAD UTILITIES MAY VARY BASED ON THE PLANS. PLANTING CONFLICTS THAT ARISE IN THE FIELD SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- 8. LARGE TREES OR SHRUBS SHALL NOT BE PLANTED ON BERMS OVER FOUR FEET TALL THAT IMPOUND WATER. SMALL TREES OR SHRUBS WITH FIBROUS ROOT SYSTEMS MAY BE INSTALLED ON BERMS THAT IMPOUND WATER AND ARE LESS THAN FOUR FEET TALL. PLANTING CONFLICTS THAT ARISE IN THE FIELD SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- 9. ALL PLANTING AREAS TO BE SERVICED WITH TEMPORARY IRRIGATION.

PLANTING NOTES

- 1. CONTRACTOR SHALL PROVIDE PLANTING SOIL, SOIL AMENDMENTS, AND BARK MULCH TO THE COMPOSITION AND DEPTHS IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS OF THE CONTRACT DOCUMENTS.
- 2 ALL PLANTS SHALL BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS AND THE SPECIFICATIONS PROVIDED AS PART OF THE CONTRACT DOCUMENTS.
- 3. QUANTITIES ARE LISTED FOR THE CONTRACTOR'S CONVENIENCE ONLY. ALL COUNTS MUST BE VERIFIED BY THE CONTRACTOR. IN THE CASE OF A DISCREPANCY BETWEEN THE LEGEND AND THE PLAN. PLANTS INDICATED ON THE PLAN SHALL SUPERCEDE QUANTITIES LISTED IN THE LEGEND.
- 4. UTILITY LOCATIONS SHOWN ON PLANS MAY DIFFER FROM FIELD CONDITIONS. CONTRACTOR TO FIELD VERIFY ALL UTILITIES BEFORE INSTALLATION. CONFLICTS BETWEEN ANY EXISTING AND PROPOSED UTILITIES ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY.
- 5. ALL EDGES BETWEEN SEEDED AND MULCH AREAS TO BE SHOVEL-CUT. SEE DETAIL 2/90-L-50009.

WETLAND C VEGETATED CORRIDOR PLANTING RATE CALCULATION

PLANT COMMUNITY	PLANT TYPE	PLANTING AREA (SF)	PLANTING DENSITY (# PER SF)	PLANT QTY.	# OF SPECIES
UPLAND FOREST	TREES	1,080	0.010	11	1
UPLAND FOREST	SHRUBS	1,080	0.050	54	3

PLANTING LEGEND AND NOTES 2

REVISION

DSGN STOECKLEIN STOECKLEIN

CHK D WALTERS APVD M FAHA

NO. DATE

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST

BY APVD SCALES ACCORDINGLY.









LANDSCAPE ARCHITECTURE PLANTING LEGEND AND NOTES 2

SHEET DWG # 03-L-22014

DATE 06/12/2020

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PROJ WTP 1.0 PLOT DATE AND TIME: 2/13/2020 4:15 PM