

City of Milwaukie HCA Determination Report
Tax Lots 3200 and 3300 in T1S R1E S35
12205 & 12225 SE 19th St



Evaluated by: John McConnaughey
John McConnaughey, PWS & Annakate Martin, NRS

DATE June 6, 2018

PREPARED FOR:
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Cover Photo This picture is looking south onto the property where the fill material is evident and the road through the middle of the tax lots can be seen. The Right of way (ROW) is along the south border of the property.

INTRODUCTION

This report addresses the City of Milwaukie’s requirement to determine the HCA boundaries of the subject properties prior to issuing a land use decision. Milwaukie Municipal Code, (MMU), Section 19.402.15. The applicant, Mathew Gillis, is seeking land use approval to construct eight single-family dwellings on the subject property located on these properties.

This report presents evidence that the City’s HCA maps do not correctly show where the HCA boundaries truly are, and we also present what we believe are corrected HCA maps based on MMU Section 19.402.15.

The physical addresses of 12225 & 12205 SE 19th Avenue, Milwaukie, Oregon. The legal description is tax lot 3200, T1S R1E 35 and tax lot and tax lot 3300, T1S R1E 35. Tax lot 3200 is 1.34 acres and tax lot 3300 is 2.32 acres for a total of 3.66 acres. The building class category for these lots is single family residence, zoned R-5. The Milwaukie County Assessor’s office indicated that the houses on the subject properties were built in 1938 with their current configurations. The property is located on the west side of SE 19th Avenue and north of Sparrow Street ROW.

STUDY AREA

This investigation concerns only those portions of the subject lots that lay eastward of the ordinary high-water mark, (OHWM), of the Willamette River. Although the lots extend westward across a side channel and include portions of two small islands, those areas are not considered in this study, nor are developments currently contemplated westward of OHWM. Those areas are assumed to be correctly mapped by Milwaukie’s HCA mapping.

Table 1. Lot Areas and Areas within the Study Boundary defined as those areas laying eastward of the Ordinary High Water Mark, (OHWM), of the Willamette River.

AREAS	TOTAL LOT AREA		STUDY AREA ONLY	
	SQFT	ACRES	SQFT	ACRES
Lot 3300	101,059	2.32	43,550	1.00
Lot 3200	58,370	1.34	25,416	0.58
In Sparrow ROW	xx	xx	19,988	0.46
In 19th Ave ROW	xx	xx	9,596	0.22
Total Lots	189,014	4.34	98,550	2.26

Historically, the land has been a single-family residence since 1938. Most of the land in the study area has been filled with 3 to 4 feet of filled material. The fill is a hard-sandy clayey material that appears to inhibit plant root development. Early aerial photos (1939 and 1948) show the Willamette River and the slough in use for log rafting and storage. We suspect that the fill material was dredged from the slough to make the slough more suitable for transportation related uses, and possibly also to fill wetland areas that may have existed on the property and make it more suitable for farming and other uses.

The vegetation is an eclectic mix of weeds, an association not typically found on vacant lots in this area. Root development is surprisingly shallow, in general plant roots penetrate only the top inch or two of the soil. The purpose of the fill is not clear, as the homes and structures on the property are built as far back from the river as possible. The homes also appear to have been constructed after the fill was placed, suggesting the fill dates to around 1938. From the aerial photos as early as 2000 it appears that the lots have had cars driving on the subject lots and there is a road in the middle of property and historically numerous cars have been parked behind the houses which has made the undeveloped portion of the lots degraded and sparsely vegetated. The study area is generally flat and drops off very steeply about 10 or 15 feet to the Willamette River.

Most of the property is mapped within the Milwaukie's Habitat Conservation Area (HCA) and Water Quality Resource (WRQ) map. The only area out of the HCA/WQR map on the subject site is the furthest east where the two single-family residences are currently located, (Figure 7A). Offsite to the south is a Right of Way (ROW) that is a swale and was determined wetland. The buffer would extend onto the subject site 50 feet.

Code Requirements. The area selected for the single-family residences is mostly within areas currently mapped as Habitat Conservation Areas (HCA), and the Vegetated Corridor of an identified Water Quality Resource Area, (WQR).

MATERIALS AND METHODS

For this investigation ETC used Wetland Biologist John McConnaughey and Natural Resource Specialist Annakate Martin, who performed the site review according to the procedures outlined in Milwaukie Municipal Code chapter 19.402.

Methods:

The methods employed in this investigation were a modification of the standard methodology used in a routine site analysis. The entire eastern portion (not crossing the slough) of the subject sites has proposed

development of single-family homes was investigated and the ROW to the south. We used our Topcon GPS unit to locate wetlands, OHWM, Top-of-bank, and our data points, and also some common points located in a survey by:

Andy Paris and Associates, Inc.
 16057 Boones Ferry Rd
 Lake Oswego, OR 97035
 503-635-3341

A. Code Requirements from 19.402.15 Natural Resources.

Given that the subject property has long since been developed, as evidenced by the fill that covers all lands in the study area, we believe that those portions of the property eastward of the Willamette River Top of Bank should be removed from the HCA per the code section below:

19.402.15.B.2.b. HCAs

When disturbances are allowed within HCAs, in accordance with the applicable standards of Section 19.402, the City may update the NR Administrative Map to show that the permanently disturbed area is no longer considered an HCA.

RESPONSE: The study area certainly qualifies as “permanently disturbed”, and the evidence presented shows the disturbance long predates the adoption of MMC Section 19. Should the Planning Director agree with this determination, then the fill area should be removed from the HCA.

ETC estimates the remaining HCA area (within the study area boundary only) as follows. These areas are calculated as the area between OHWM and Top-of-Bank. Eastward of Top-of-Bank is all fill material, and has been in various uses that qualify as permanent disturbances since before 1939.

Table 1. HCA Area per 19.402.15.2.b where permanently disturbed areas are removed from the HCA.		
Area Within Study Boundary	SQFT	ACRES
On lot 3300	2,556	0.06
On lot 3200	1,288	0.03
In Sparrow ROW	11,525	0.26
In 19th Ave ROW	0	0.00
TOTAL within Study Area	15,369	0.35
NOTE: Areas are for the study boundary only. Most of the HCA area is east of the study boundary, (OHWM of the Willamette River)		

Early photos show farming and other activity in the Sparrow Street ROW through the 1960’s, however later aerials show ROW as turning into the forested area we observed in our study. The Planning Director may determine that the re-establishment of forest vegetation has converted the ROW into an undisturbed area, and so the City HCA maps may correctly show the ROW as HCA in spite of past disturbances.

19.402.15 Boundary Verification and Map Administration

The NR Administrative Map shows the locations of WQRs and HCAs. For WQRs, the NR Administrative Map is a general indicator of protected water features and their associated vegetated corridors; the location of actual WQRs is determined according to the parameters established in Table 19.402.15. With respect to HCA locations, the NR Administrative Map is assumed to be correct unless demonstrated otherwise.

Protected Water

Primary protected water features include: all perennial streams, streams draining 100 or more acres, Title 3 wetlands, and natural lakes and springs. See Section 19.201 for the full definition.

RESPONSE: The Willamette River is a primary protected water feature per this section. The wetlands in the SE Sparrow St. ROW do not appear on the Metro Water Quality and Flood Management Area Map, and so they are not a Title 3 wetlands.

Vegetated corridor width shall be applied to the outer boundaries of water features, such as the edge of a wetland and both banks of a watercourse.

Vegetated corridors in excess of 50 ft for primary protected features, or in excess of 15 ft for secondary protected features, apply on steep slopes only in the uphill direction from the protected water feature.

Where the protected water feature is confined by a ravine or gully, the top of ravine is the break in the > 25% slope. A maximum reduction of 25 ft may be permitted in the width of the vegetated corridor beyond the slope break if a geotechnical report demonstrates that the slope is stable. To establish the width of the vegetated corridor, slope should be measured in 25-ft increments away from the water feature until the slope is less than 25% (top of ravine).

Secondary protected water features include intermittent streams draining 50 to 100 acres. See Section 19.201 for the full definition.

RESPONSE: The slope adjacent to the OHWM of the Willamette River is very steep, approaching vertical in areas, and levels off abruptly at the edge of fill, which is the Top-of-Bank. The Width of the vegetated Corridor per Table 19.402.15 is then 50FT starting at the Top-of-Bank going Eastward in to the study area.

The fill extends into the Sparrow Street ROW, making the slope adjacent to the wetland in the Sparrow Street ROW is also > 25%. The slope only rises up to 3' and flattens out close to the property boundary. Wetlands "A" and "B" are secondary protected water features, the width of the vegetated corridor per Table 19.402.15 is 50FT starting at the wetland boundary generally going Northward into the study area.

Boundary Verification

To determine whether the standards of Section 19.402.15 apply to a proposed activity at any given location, the boundaries of any designated natural resource(s) on or near the site shall be verified.

Agreement with the accuracy of the NR Administrative Map does not constitute or require a land use decision. However, for activities proposed within 100 ft of a wetland or its associated vegetated corridor, the boundary verification process outlined in Subsection 19.402.15.A.2.a(1)(b) shall be followed to identify the specific location of wetlands on the subject property. The Planning Director may waive the requirement for official wetland delineation, depending on the specific circumstances of the site and the proposed activity. Such circumstances may include, but are not

limited to, the scale and potential impacts of the proposed activity, the proximity of the proposed activity to the mapped resource, and the Director's confidence in the accuracy of the NR Administrative Map relative to the resource in question. An applicant may challenge the accuracy of the NR Administrative Map through either of the boundary verification processes outlined in Subsections 19.402.15.A.1 and 2.

RESPONSE: Wetlands "A" and "B" are offsite and no impacts are proposed. The HCA boundary from the Willamette River is based on the location of Top-of-Bank as opposed to the boundary defined by OHWM. Therefore, the Director may consider waiving the requirement for an official wetland delineation.

I. Type I Boundary Verification

The following minor corrections to mapped HCAs may be proposed according to one of the following procedures, and are subject to Type I review per Section 19.1004:

a. Simple Incongruities

In some cases, the vegetative cover data shown on the NR Administrative Map might not align with the location of existing legally established development or tree cover. An applicant who believes that the NR Administrative Map is inaccurate, based on such an obvious misalignment, shall submit the following information regarding the property:

(1) A detailed property description and site plan of the property that includes all existing conditions plans listed on the City's Site Plan Requirements.

RESPONSE: Both tax lots have single-family residences that were built in 1938 with their east boundary along 19th Avenue. Tax lot 3200 has 1.34 acres and tax lot 3300 has 2.32 acres. They are at an elevation of 20 feet above sea level. The subject sites are degraded patches of grasses and weeds with no trees or shrubs, there are patches of Japanese knotweed on the properties.

(2) A copy of the applicable NR Administrative Map section.

RESPONSE: See Figure 7.

(3) The latest available aerial photograph of the property, with lot lines shown, at a scale of at least 1 map inch equal to 50 ft for lots of 20,000 or fewer square feet, and a scale of 1 map inch equal to 100 ft for larger lots.

RESPONSE: See Figure 5F from the Wetland Delineation report.

(4) A documented demonstration of the misalignment between the NR Administrative Map and the property's tax lot boundary lines and/or the location of existing legally established development.

RESPONSE: See Figures 7A, 7B, and 7C.

(5) Any other factual information that the applicant wishes to provide to support boundary verification.

RESPONSE: The subject lots have a long history of impacts dating to the 1930's when 3 to 4 feet of fill material, probably dredging's from the slough, were spread across the property, and then houses built on the eastern end. Historical aerials show other structures existed at various times, and the lots used for farming and vehicle parking at various times.

The properties are currently vacant, although it appears some renovation activities are on-going. The vegetation is mostly non-native and invasive weeds. They do not have any qualities that make them ideal habitat for wildlife or vegetation. It does have 10' densely vegetated slope on the west side along the Top-of-bank of the Willamette River. There is some native vegetation but primarily invasive weeds. The Sparrow Street ROW south of the lots is a mixture of native and invasive weeds but does have a nice canopy cover approximately 80% coverage of *Alnus rubra* (Red Alder, FAC) and *Populus balsamifera* (Black Cottonwood, FAC), the shrub layer is primarily *Rubus armeniacus* (Himalayan blackberry, FAC) and the herbaceous layer was primarily *Phalaris arundinacea* (Reed canarygrass, FAC) and *Hedra helix* (English Ivy) there was a good variety of native species mixed in, just at lower percentages. This area is believed to be a constructed ditch that has been determined wetland in the ROW.

b. Legal Development Prior to Adoption Date If a property was legally developed between the summer of 2002 (when the aerial photograph used to determine the regional habitat inventory was taken) and September 15, 2011, the effective date of Ordinance #2036, the applicant shall submit the following information regarding the property:

RESPONSE: Not applicable, the property appears to have been developed around 1938.

2. Type II Boundary Verification

Corrections to mapped WQRs and/or detailed verification of mapped HCAs may be proposed according to the following procedures and are subject to Type II review per Section 19.1005.

a. Corrections to WQRs

(1) Submittal Requirements

To propose a correction to a WQR shown on the NR Administrative Map, the applicant shall submit the following information, depending on the type of water feature in question:

(a) Drainages

In the case of drainages; including rivers, streams, springs, and natural lakes; the applicant shall submit a hydrology report, prepared by a professional engineer, demonstrating whether or not the drainage meets the definition of a protected water feature. If the drainage is demonstrated to be a protected water feature, the applicant shall provide a topographic map of the site, with contour intervals of 5 ft or less, that shows the specific location of the drainage on the subject property.

RESPONSE: There is no need for a hydrology report to show the Willamette River meets Milwaukie's criteria of a protected feature. The problem is the HCA map incorrectly applies a buffer on an area meeting the criteria of "permanently disturbed" per 19.402.15.B.2.b. Further, the HCA appears to be drawn as an offset from some feature other than the correct top-of-bank per Table 19.402.15.

The Willamette slough is part of the study area for the proposed development due to potential buffers. The proposed development has offset the buildings 45 feet from the top of bank.

See Figure 2 for topography and location of the drainage.

(b) Wetlands

In the case of wetlands, the applicant shall submit a wetland delineation report, prepared by a professional wetland specialist in accordance with the 1996 Oregon Freshwater Wetland Assessment Methodology and following the wetlands delineation process established by DSL, demonstrating the location of any wetlands on the site. The delineation report will be accepted only after approval by DSL. If the wetland is demonstrated to be a primary protected water feature, the

applicant shall provide a topographic map of the site, with contour intervals of 5 ft or less, that shows the specific location of the wetland on the subject property. The Planning Director shall confer with DSL and Metro to confirm delineation and hydrology reports, as may be needed, prior to issuing a notice of decision on a requested map correction.

RESPONSE: The Planning Director may not need to confer with DSL and Metro for the following reasons: There were no wetlands found above OHWM on the subject parcels. As the project impacts are all above OHWM and within the subject parcels, the project proposes no wetland impacts.

The OHWM of the Willamette River was used as the Western study area boundary, ETC determined OHWM to the 20FT elevation line drawn by the surveyors. Although waters and wetlands exist on the parcels west of OHWM, they were not examined for this study. Should DSL determine that OHWM was an elevation other than 20FT, it would not change the mapping of the HCA, as the HCA projects from Top-of-Bank per Table 19.402.15. Moving the OHWM up or down by as much as 10FT would not affect the HCA boundary determination.

Two small wetlands were found in the Sparrow Street ROW, Wetland "A" is 8FT South of the property at it's nearest point. Wetland "B" is 12FT South at it's nearest point. These are secondary protected features.

(2) Approval Criteria

The City shall update the NR Administrative Map if the wetland or hydrology report submitted demonstrates any of the following:

- (a) That there was an error in the original mapping.
- (b) That the boundaries of the WQR have changed since the most recent update to the NR Administrative Map.
- (c) That a primary protected water feature no longer exists because the area has been legally filled, culverted, or developed prior to January 16, 2003, the effective date of Ordinance #1912.

RESPONSE: The update to the administrative map should be as per (2)(a), that there was an error in the original mapping.

b. Detailed Verification of HCAs

An applicant who believes that an HCA shown on the NR Administrative Map should be corrected for a reason other than those described in Subsections 19.402.15.A.1.a or b may propose a detailed verification.

(1) Submittal Requirements

The applicant shall submit a report prepared and signed by either a knowledgeable and qualified natural resource professional; such as a wildlife biologist, botanist, or hydrologist; or a civil or environmental engineer registered in Oregon to design public sanitary or storm systems, storm water facilities, or other similar facilities. The report shall include:

- (a) A description of the qualifications and experience of all persons that contributed to the report and, for each person that contributed, a description of the elements of the analysis to which the person contributed.

QUALIFICATIONS OF JOHN MCCONNAUGHEY, PWS

I earned a Bachelor of Science degree from the University of Oregon in 1978 and in 1984 I earned a Masters of Fisheries Science degree from the University of Alaska at Juneau, (since renamed as the University of Alaska, Southeast). The Juneau curriculum specializes in the study of Pacific salmon. I held positions with agencies tasked with salmon research and management beginning with summer jobs in 1979 in Rogue

River, the Oregon Dept of Fish and Wildlife, and then with the Alaska Department of Fish and Game in Ketchikan, Alaska in 1980. I worked on salmon projects with ADF&G in Anchorage and Juneau for 5 years before moving to American Samoa to serve as a fisheries projects leader for the Department of Marine and Wildlife Resources. Upon returning stateside, I worked for the Yakama/Klickitat Fisheries Project out of Yakima Washington for 5 years leading four research projects studying aspects of salmon supplementation projects in the Yakima River.

I have been employed with Environmental Technology Consultants since 2006. In 2010 I earned certification as a Professional Wetland Scientist, (PWS) from the Society of Wetlands Scientists, (SWS). No part of my compensation is dependent on the outcome of my investigations or conclusions I may draw from the observed data.

QUALIFICATIONS OF ANNAKATE MARTIN, NRS

I received my Bachelor of Science degree in Natural Resources from Washington State University in 2002. In 2002 I worked for the University of Idaho on MAP tracking steelhead and salmon on the Snake River out of Clarkston, Washington. 2002-2003 I worked for Idaho Fish and Game as a field technician for identifying fish in remote streams in Idaho. In 2004, 2016 and currently I have worked for Environmental Technology Consultants conducting wetland delineations and all other environmental reports. From 2007-2014 I worked for 3 Kings Environmental conducting Phase I ESA reports, asbestos and lead surveys. In 2011 I started my own company primarily providing erosion control services and conducting Phase I ESA habitat assessments. I was employed with Clark Public Utilities as a Watershed Coordinator in which I oversaw property restoration with native plants and maintained a nursery in 2017 before coming back to ETC in 2018.

I am currently working on getting my certification as a Professional Wetland Scientist from Portland State University. I have 20 years working in the environmental field specializing in many different areas. No part of my compensation is dependent on the outcome of my investigations or conclusions I may draw from the observed data.

(b) The information described in Subsection 19.402.15.A.1.a.

RESPONSE: See subsection 19.402.15A.1.a explained above.

(c) The information described in Subsection 19.402.15.A.1.b, if the applicant believes such information is relevant to the verification of habitat location on the subject lot or parcel.

RESPONSE: See subsection 19.402.15A.1.a explained above.

(d) Additional aerial photographs, if the applicant believes they provide better information regarding the property, including documentation of the date and process used to take the photos and an expert's interpretation of the additional information they provide.

RESPONSE: See Figures 5A through 5E in the Wetland Delineation Report.

(e) A map showing the topography of the property shown by 2-ft vertical contours in areas of slopes less than 15%, and at 5-ft vertical contours of slopes 15% or greater.

RESPONSE: See Figure 6B.

(f) Any additional information necessary to address each of the detailed verification criteria provided in Subsection 19.402.15.A.2.b(2); a description of where any HCAs are located on the property, based on the application of the detailed verification criteria; and factual documentation to support the analysis.

RESPONSE: In our opinion the HCA as mapped is incorrect for two reasons per Chapter 19.402.15:

- Per section 19.402.15.B.2.b, legally permanently disturbed areas should be removed from an HCA designation. We have presented evidence that the study area was significantly disturbed long before the adoption of Chapter 19. The disturbed area is the area covered by fill material, essentially those portions of the property laying east of Top-of-Bank.
- Per table 19.402.15, the WQR should extend 50' from the Top-of-Bank of the Willamette River, and 50' from the delineated boundaries of Wetlands "A" and "B". The HCA maps suggest some other reference point was used.

(2) Approval Criteria

A boundary verification request submitted under Subsection 19.402.15.A.2.b shall be evaluated according to the following three-step process:

(a) Verify Boundaries of Inventoried Riparian Habitat. Locating habitat and determining the riparian habitat class of the designated natural resource is a four-step process:

(i) Locate the water feature that is the basis for identifying riparian habitat. Locate the top of bank of all streams, rivers, and open water within 200 ft of the property. Locate all flood areas within 100 ft of the property.

RESPONSE: A Willamette river slough runs through the western portion of the tax lots and divides the properties between the study area for this project, and a small island that was not included in this study.

Ordinary High Water was determined on May 25, when the high flows in the Columbia had backed water up in the Willamette. Water levels on this day were above any visible drift deposits or other water marks, and about 6' below Top-of-Bank. In our estimation the water level on May 25 was a reasonable estimate of OHWM.

The bank is very steep in this section, with slopes from 50% to near vertical. The exact elevation of OHWM is not critical, as per Table 19.402.15 the vegetated corridor begins at Top-of-Bank, not at OHWM. OHWM, Top-of-Bank, and FEMA 100-year flood areas are shown in Figure 6.

Locate all wetlands within 150 ft of the property, based on the NR Administrative Map. Identified wetlands shall be further delineated consistent with methods currently accepted by DSL and the Corps.

RESPONSE: Wetland determinations and delineations discussed in this report were conducted in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual ("the manual"), including regional supplements and applicable guidance, and supporting technical or guidance documents issued by the Department of State Lands.

We located a wetland south of the tax lots in the SE Sparrow Street ROW that is within 150'. This wetland appears to be previously unmapped by the NR Administrative Map. No other wetlands within 150 ft of the property were found.

The ditch that cuts through the middle of Sparrow Street ROW drains impervious runoff from the surrounding roads and buildings. The northern bank close to the property was construction rocks that appears was for the tax lots when they were being developed and built up with fill material in 1938. There is a berm half way through the swale and we didn't identify a culvert but suspect one is or was there for water flow at one time. We did not observe evidence of flow at the time of the site visit and the ditch did not appear to drain into the Willamette River as the channel ceased to exist before the river.

The center of the ditch is primarily bare ground where the concentration of hydrologic indicators were present. There was small percentages of *Equisetum arvense* (Horsetail, FAC) and *Epilobium alpestre* (Willowherb, NOL) in the bottom of the ditch.

Along the slopes the primary habitat is *Hedra helix* (English Ivy, FACU), *Rubus ameriacus* (Himalayan Blackberry, FAC), *Corylus cornuta* (Beaked hazelnut, *Phalaris arundinacea* (Reed Canarygrass, FAC) and *Populus balsamifera* (Black Cottonwood, FAC). The swale has a mix of invasive species and natives and is good habitat for wildlife.

In the bottom of the swale/ditch has hydric soils with colors 10YR3/1 and 10YR4/1, which is a depleted matrix. There was hydrology at less than 12".

(ii) Identify the vegetative cover status of all areas on the property that are within 200 ft of the top of bank of streams, rivers, and open water; are wetlands or are within 150 ft of wetlands; and are flood areas and within 100 ft of flood areas. Vegetative cover status shall be as identified on the latest Metro Vegetative Cover Map (available from the City and/or the Metro Data source Center). The vegetative cover status of a property may be adjusted only if: (1) the property was legally developed prior to September 15, 2011, the effective date of Ordinance #2036 (see subsection 19.402.15.A.1.b); or (2) an error was made at the time the vegetative cover status was determined. To assert the latter type of error, applicants shall submit an analysis of the vegetative cover on their property, using the aerial photographs on which the latest Metro Vegetative Cover Map is based and the definitions of the different vegetative cover types identified in Table 19.402.15.A.2.b(2)(a)(iv).

RESPONSE: The subject sites were developed prior to 2011 and were established in 1938. The vegetative cover for the study area of these tax lots was misidentified on city maps in our professional opinions since the tax lots on the eastern portion after the Willamette slough is degraded mowed yard grasses and non-native weeds, (See Plot P7 in the Wetland Delineation report. Aerial photos dating back to 2000 are included in Figure 3 of this report clearly showing the property as it is today. It has been used as a parking and driveway for the past 18 years. There are no trees or native vegetation located on the study area where the proposed development would be.

The top of bank along the Willamette slough has a 10-foot vegetated area that has approximately 15% canopy of Black Cottonwood and a shrub layer of 85% Himalayan blackberry. There are small patches of Red Osier Dogwood. It would be considered degraded due to the high percentage of blackberry.

The majority of the study area within 200 ft of the Willamette River is a weedy lawn with a strange plant assemblage. It is dominated by Narrowleaf plantain (~50%), and a very short unidentified grasses at approximately 40%, Curly Dock at 20%, at about 20% Trefoil, and Bull Thistle at 15%. There are patches of Japanese knotweed (roughly 7% of the lawn area), and Blackberry, (roughly 10%). Roughly 10% of the

lawn area is bare ground. It appears the area has been irregularly maintained, and variously used for parking vehicles and as a yard.

The Sparrow Street ROW to the south of the property is densely vegetated with 65% canopy of Black Cottonwood, Beaked Hazelnut 5%, and Red Alder 10%. The shrub layer is Himalayan blackberry 70%, some Indian plum 5%, and Holly 10%. The herbaceous strata were Reed Canarygrass 50%, Willowherb 15%, high percentages in various spots of English Ivy and Cleavers on the upland areas and small percentages of Horsetail and grasses in the bottom of the ditch. The bottom of the ditch was patchy vegetation and bare ground. The upland area was on the slope of the ditch 3 feet away from the center of the ditch.

(iii) Determine whether the degree that the land slopes upward from all streams, rivers, and open water within 200 ft of the property is greater than or less than 25%, using the methodology outlined in Table 19.402.15.

RESPONSE: An inclinometer was used but was hardly necessary to determine where slopes were greater than 25% for the banks of the Willamette River. Indeed, we could not walk in those areas, as we would risk tumbling down a very steep slope through a tangle of blackberries and end up in the river. The slopes along the river are greater than 25% and are actually very steep up to near vertical.

The slopes adjacent to Wetland “A” were formed by the fill covering the two lots. According to our inclinometer that slope was up to 60%, rising 3 to 4 feet and then level on the property.

The slopes adjacent to Wetland “B” are the in line with Wetland “A” and would be one contiguous feature if there wasn’t a dam between them. The slopes were between 40-60% rising 3 to 4 feet and level on the property.

(iv) Identify the riparian habitat classes applicable to all areas on the property using Table 19.402.15.A.2.b(2)(a)(iv) and the data identified in Subsections 19.402.15.A.2.b(2)(a)(i) through (iii).

RESPONSE: The Development/Vegetation Status for the study area is “Low Structure Vegetation or Open Soils”, and the classification per table Table 19.402.15.A.2.b(2)(a)(iv) is then figured from the Top-of-Bank as 0 feet:

- Class I from 0 to 50 FT
- Class II from 51 to 100 FT
- Class II from 101 to 200 FT (slopes are less than 25%).

IMPACT EVALUATION

Lot 3300 with the physical address of 12225 SE 19th Avenue is impacted by the Willamette river slough buffer but doesn't have any restrictions due to wetlands in the surrounding area or on the property. The buffer from the river is 150' which encroaches on the proposed development.

Lot 3200 with the physical address of 12205 SE 19th Avenue has restrictions from the Willamette river slough buffers and wetland buffers to the south. The buffer from the south encroaches on the property 50', approximately where the current house is located. The proposed development encroaches the wetland buffer and is on the southern property line, there is no vegetation in the buffer that is encroached except degraded grasses.

The total proposed impacts for the subject sites is 1.14 acres, the proposed plan as shown in Figure 1 has 8 single family residences, 6 homes 50 feet away from the top of bank of the Willamette slough, and one within the 50 feet of the offsite wetland buffer. The proposed development is subject to change but none of the proposed plans impact the buffers more than the one shown in Figure 1. These buffers do not have any critical habitats or native vegetative species at this time, the buffers are degraded grasses and fill material.

Below is a table of proposed construction disturbances:

Table 3. Proposed Disturbed Areas (SQFT). Permanent disturbances include the paved areas of the roads, driveways and houses. The temporary disturbance is a 5' construction buffer which will be planted as part of the mitigation. The total project area is about 31,050 SQFT of which 29,316 SQFT are outside the HCA boundary.			
Mapping	Permanent disturbance (SQFT)	Temporary disturbance (SQFT)	Total (SQFT)
WQR	995	543	1,538
HCA	-	198	196
OUTSIDE	24,730	4,586	29,316
Total	25,725	5,327	31,050

The current condition of the site is degraded and has many invasive species (Shiny geranium, Reed Canary grass, Thistle, Curly dock, Japanese knotweed, Himalayan blackberry, English ivy, Holly, ect.) The proposed plan would be an improvement to the area and the past development of the lots predates the City of Milwaukie's designation of HCA in 2011.

CONCLUSION

The study area has been in its degraded state since 1938 when the property had approximately 3-4 feet of fill to establish the tax lots and construct the two single-family residences. This report proposes

corrections to HCA boundaries, that if the Planning Director agrees, will remove the HCA designation from much of the study area.

The OHWM along the Willamette River is approximately 10 feet below the top of the bank and the banks are very steep with slopes greater than 25%, the slopes are heavily vegetated with Himalayan Blackberry and English Ivy on the herbaceous/shrub strata on the trees strata there is Black Cottonwood at 15%.

The suggested buffers are on fill material that have no native species for vegetation and the grasses that are at present patchy with 33% bare ground.

It is our recommendation that the proposed development will not harm the present state of the habitat and with mitigation to plant native plants and remove invasive species such as Japanese Knotweed, unknown grasses and Plantain which may improve the study area with mitigation of native plants.

Study Area Photographs



Photo 1: This is a photo looking North down the dirt road through the middle of the study area. The view is from south to north. ETC Photo 5/25/2018



Photo 2: A clear view of the fill that is the study area. The house is 12225 SE 19th Avenue. ETC Photo 5/25/2018



Photo 3: Japanese Knotweed on the study site. ETC Photo 5/25/2018



Photo 4: Photo from the northwest corner, a good example of the study area.



Photo 5: Plots 4 and 5 along the slope to the Willamette river. The OHWM is between the two plots at the river level observed on 5/25/2018. ETC Photo 6/18/2018.



Photo 6: OHWM along the Willamette river. ETC Photo 5/25/2018.



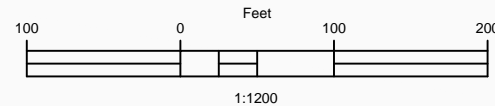
Photo 7: Plots 1 and 2 in Sparrow Street ROW. ETC Photo 5/25/2018.



Photo 8: Plot 7 in approximately the middle of the lawn area. ETC Photo 5/25/2018

Figures

- Figure 7A** **HCA as mapped by the City**
- Figure 7B** **Proposed correction to HCA by removing permanently disturbed areas.**
- Figure 7B** **Proposed WQR based on Table 19.402.**
- Figure 8** **Proposed Development**



SUBJECT PROPERTY

3100

3200

3300

SLOUGH

WREN STREET

3101

SE 19TH AVENUE

WILLAMETTE RIVER OHWM
ELEVATION = 20FT

TOP OF BANK

ORANGE REPRESENTS
HCA MAPPED AREA

GREEN REPRESENTS
VEGETATED CORRIDOR
PER HCA MAPPING

P7

P5

P6

P4

P3

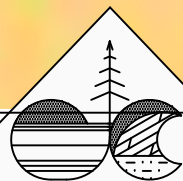
P1

P2

SE SPARROW ST

WETLAND "B"
188 SQFT

WETLAND "A" 3,175 SQFT
WITHIN STUDY AREA.
CONTINUES SOUTH PAST
STUDY AREA BOUNDARY



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technology
consultants

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Vancouver, WA 98682
360-696-4403

CITY OF MILWAUKIE HCA MAP WITH WETLANDS AND
OHWM AS DETERMINED BY ENVIRONMENTAL
TECHNOLOGY CONSULTANTS.

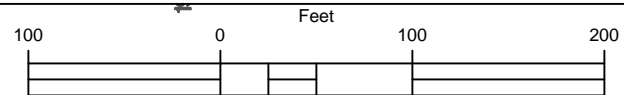
MILWAUKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

Jul 30, 2018

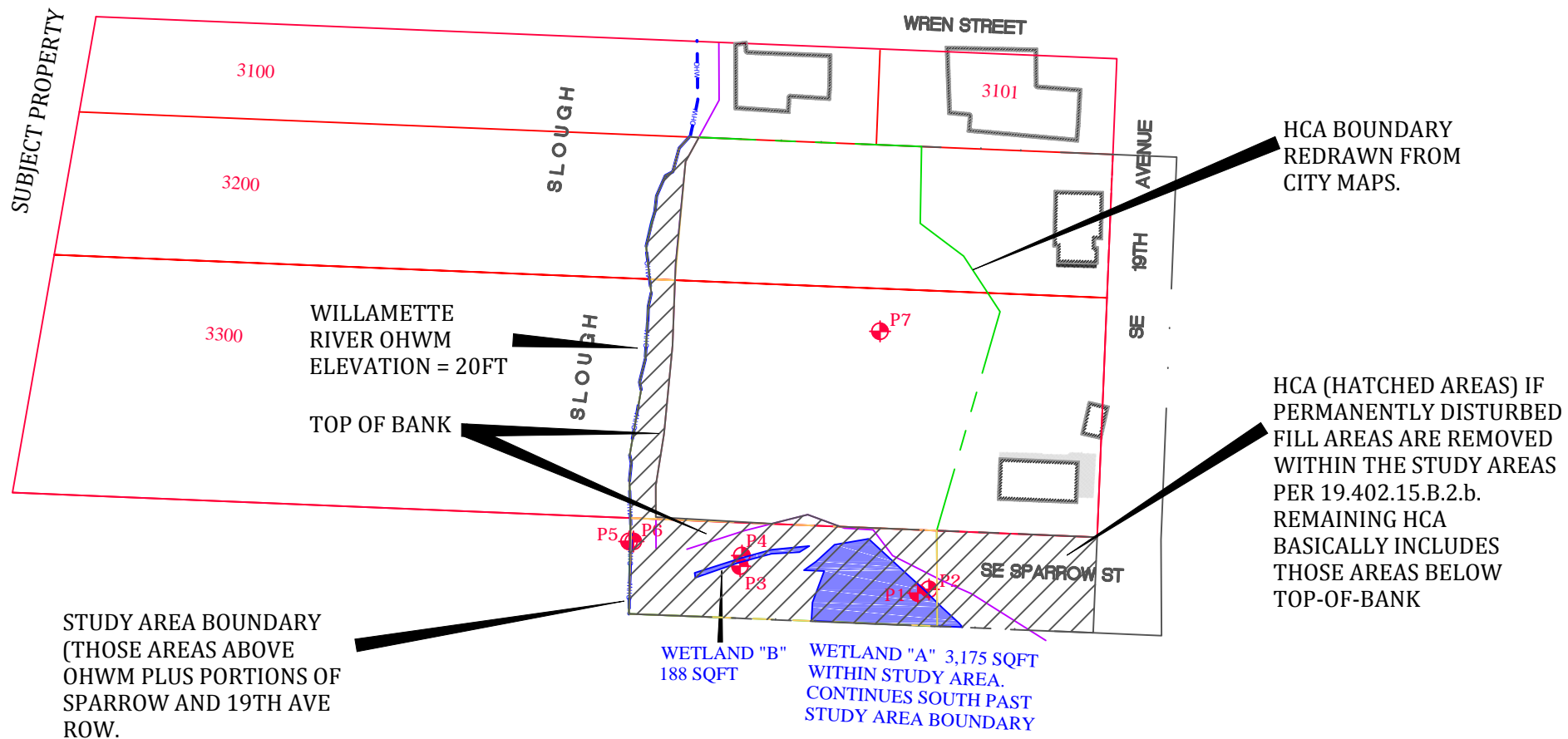
7A

SHEET

24



1"=100FT FORMATTED FOR 8.5X11



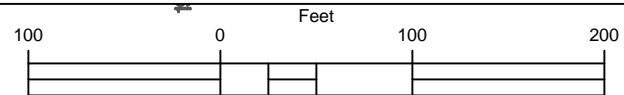
STUDY AREA BOUNDARY
(THOSE AREAS ABOVE
OHWM PLUS PORTIONS OF
SPARROW AND 19TH AVE
ROW.

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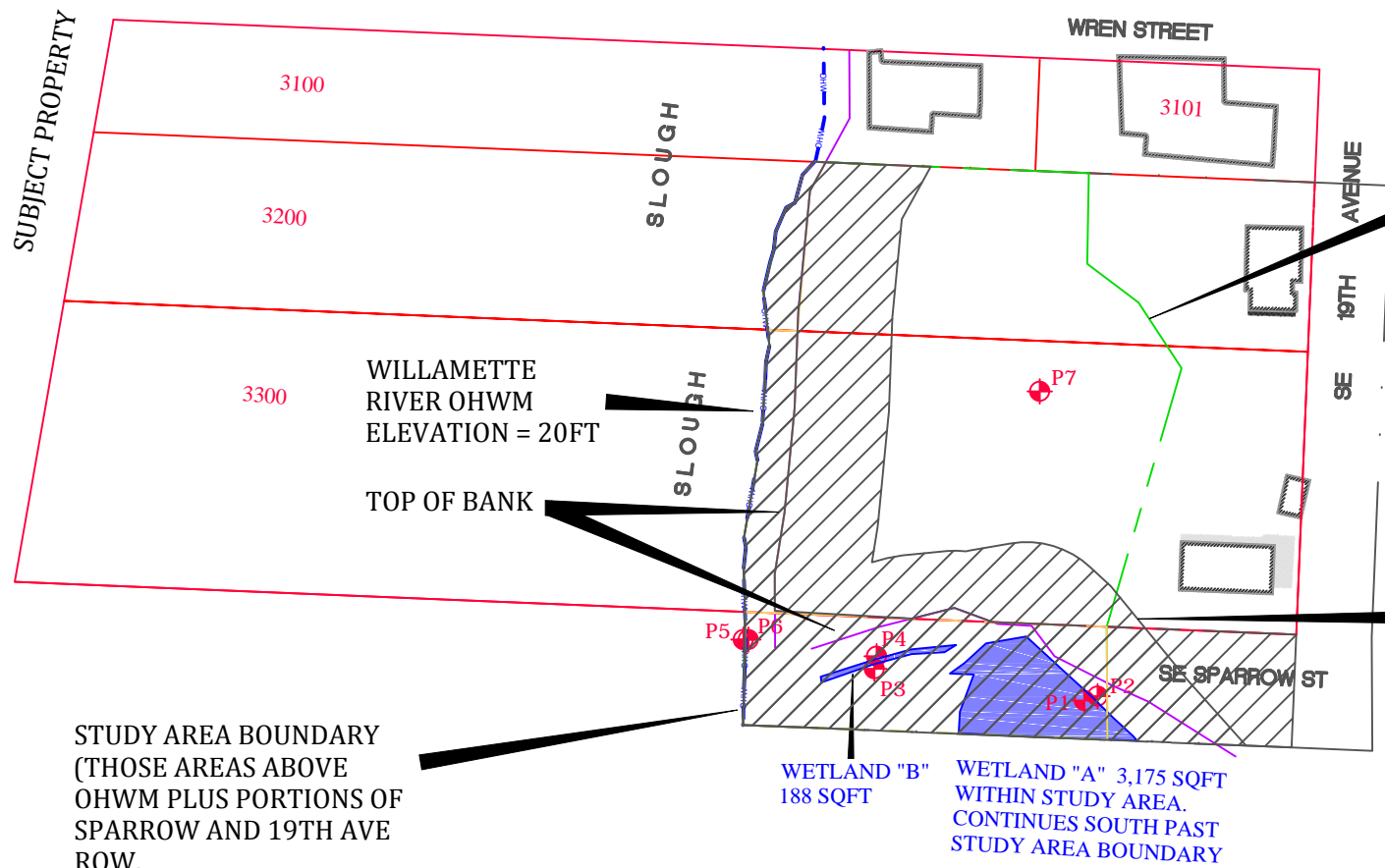
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HCA BOUNDARIES IF PERMANENTLY DISTURBED
AREAS ARE REMOVED FROM THE HCA PER
19.402.15.B.2.b. .

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068



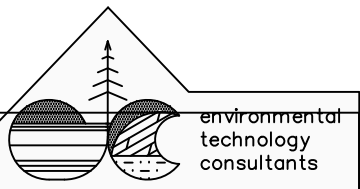
1"=100FT FORMATTED FOR 8.5X11



HCA BOUNDARY REDRAWN FROM CITY MAPS.

HCA (HATCHED AREAS) PER TABLE 19.402.15 WHERE HCA EXTENDS 50' FROM TOP OF BANK OF A PRIMARY PROTECTED WATER FEATURE (WILLAMETTE RIVER), AND 50' FROM DELINEATED WETLAND BOUNDARY OF A SECONDARY PROTECTED WATER FEATURE.

STUDY AREA BOUNDARY (THOSE AREAS ABOVE OHWM PLUS PORTIONS OF SPARROW AND 19TH AVE ROW.

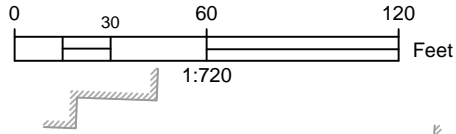


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HCA BOUNDARIES PER HCA BOUNDARY VERIFICATION AND TABLE 19.402.15

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068



OHWM
TOP OF BANK

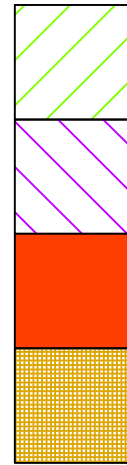
WQR
AREA

71

50

19TH
AVENUE

LEGEND



WQR AREA

HCA AREA

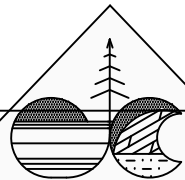
PERMANENT
DISTURBANCE

TEMPORARY
DISTURBANCE

HCA
AREA

SPARROW
STREET

DISTURBANCES TO WQR AND HCA ARE CAUSED BY THE ROAD. 995 SQFT OF PERMANENT DISTURBANCE, 1,734 SQFT OF TEMPORARY DISTURBANCE



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technology
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DEVELOPMENT PLAN AND PROPOSED IMPACTS TO WQR AND HCA AREAS

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

Jul 30, 2018

SHEET

8

PO Box 821185
Vancouver, WA 98682
360-696-4403

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 or include a hard copy of the completed form with a CD/DVD that includes a single PDF file of the report cover form and report (minimum 300 dpi resolution) and submit to: **Oregon Department of State Lands, 775 Summer Street NE, Suite 100, Salem, OR 97301-1279**. A single PDF attachment of the completed cover form and report may be e-mailed to **Wetland_Delineation@dsl.state.or.us**. For submittal of PDF files larger than 10 MB, e-mail instructions on how to access the file from your ftp or other file sharing website. Fees can be paid by check or credit card. Make the check payable to the Oregon Department of State Lands. To pay the fee by credit card, call 503-986-5200.

<input checked="" type="checkbox"/> Applicant <input checked="" type="checkbox"/> Owner Name, Firm and Address: Matthew Gillis 4776 Carolina avenue, NE Salem, OR 97305	Business phone # 661-810-2344 Mobile phone # E-mail: matthew.gillis@me.com
---	--

<input checked="" type="checkbox"/> Authorized Legal Agent, Name and Address: Environmental Technology Consultants 375 Portland Ave, Gladstone, OR 97027	Business phone # 360-696-4403 Mobile phone # 503-580-2465 E-mail: JohnM@etcEnvironmental.net AnnakateM@etcEnvironmental.net
--	---

I either own the property described below or I have legal authority to allow access to the property. I authorize the Department to access the property for the purpose of confirming the information in the report, after prior notification to the primary contact.
 Typed/Printed Name: Matthew Gillis Signature: _____
 Date: **May 29, 2018** Special instructions regarding site access: **Contact owner or agent**

Project and Site Information (using decimal degree format for lat/long of site or start & end points of linear project)

Project Name: Matthew Gillis Milwaukie	Latitude: N 45.43470	Longitude: W -121.64527
Proposed Use: Single Family Homes	Tax Map # 031s1e35dd	
Project Street Address (or other descriptive location): 12225 SE 19th Avenue	Township 1S	Range 1E Section 35 QQ DD
City: Milwaukie	County: Clackamas	Tax Lot(s) 03300 and 03200 and portions of adjacent ROWs
	Waterway: Willamette River	River Mile: NWI Quad(s):

Wetland Delineation Information

Wetland Consultant Name, Firm and Address: John McConnaughey, PWS Environmental Technology Consultants 375 Portland Ave, Gladstone, OR 97027 360-696-4403 desk 503-580-2465 cell The information and conclusions on this form and in the attached report are true and correct to the best of my knowledge. Consultant Signature: <i>[Signature]</i>	Phone # 360-696-4403 Mobile phone # 503-580-2465 E-mail: JohnM@etcEnvironmental.net Date: May 29, 2018
---	--

Primary Contact for report review and site access is Consultant Applicant/Owner Authorized Agent

Wetland/Waters Present? Yes No Study Area size **2.26 acres** Total Wetland Acreage: **0.08 acres**

Check Box Below if Applicable: Fees: \$437 (2018)

<input type="checkbox"/> R-F permit application submitted <input type="checkbox"/> Mitigation bank site <input type="checkbox"/> Wetland restoration/enhancement project (not mitigation) <input type="checkbox"/> Industrial Land Certification Program Site <input type="checkbox"/> Reissuance of a recently expired delineation Previous DSL # _____ Expiration date _____	<input checked="" type="checkbox"/> Fee payment submitted \$437 <input type="checkbox"/> Fee (\$100) for resubmittal of rejected report <input type="checkbox"/> No fee for request for reissuance of an expired report
---	--

Other Information:

Has previous delineation/application been made on parcel?	Y	N	
	<input type="checkbox"/>	<input type="checkbox"/>	
Does LWI, if any, show wetland or waters on parcel?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

For Office Use Only

DSL Reviewer: _____	Fee Paid Date: ____ / ____ / ____	DSL WD # _____
Date Delineation Received: ____ / ____ / ____	DSL Project # _____	DSL Site # _____
Scanned: <input type="checkbox"/> Final Scan: <input type="checkbox"/>	DSL WN # _____	DSL App. # _____

WETLAND DELINEATION REPORT
Tax lots 03300 and 03200
N.W.1/4 S.W.1/4 SEC.35 T.1S. R.1E. W.M.



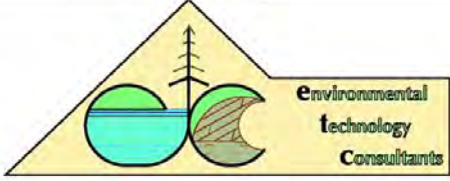
Milwaukie, Oregon

Evaluated by:

John McConnaughey, PWS# 2009 Annakate Martin, NRS

May 29, 2018

Matthew Gillis
4776 Carolina Avenue, NE
Salem, OR 97305



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A Division of Sisul Enterprises, Inc.
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PO Box 821185, Vancouver, WA 98682
(360) 696-4403 Fax: (503) 657-5779
WA Landscape Contractors License #: ENVIRTCO23RB
Web: www.etcEnvironmental.net
Email: etc@etcEnvironmental.net

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Cover Photo.

The cover photo shows what we believe is fill material on the subject properties.

INTRODUCTION

This study is for Matthew Gillis’s proposed 12 house single family residences which will have an open space playground in the middle of the development, and a dock built out over the slough. The dock will be subject of a future application This delineation and accompanying HCA determination is not concerned with the dock.

STUDY AREA. This study area includes only those portions of tax lots 3200 and 3300 that lay east of the Willamette River OHWM, and also includes portions of the adjacent Right Of Way of Sparrow Street and 19th Avenue. The tax lots do cross the slough of the Willamette River onto Elk Island. Those areas were not including in the study area because they are not included in the proposed development. The Willamette river slough is approximately 25 feet down slope and to the west of the subject sites study area.

TABLE 1. Areas discussed in this report				
AREAS	TOTAL LOT AREA		STUDY AREA ONLY	
	SQFT	ACRES	SQFT	ACRES
Lot 3300	101,059	2.32	43,550	1.00
Lot 3200	58,370	1.34	25,416	0.58
In Sparrow ROW	19,988	0.46	19,988	0.46
In 19th Ave ROW	9,596	0.22	9,596	0.22
TOTAL	189,014	4.34	98,550	2.26

This report is intended to assist the permittee, the City of Milwaukie evaluate the application and determine what environmental conditions or mitigations may be required to move the project along.

QUALIFICATIONS OF JOHN MCCONNAUGHEY, PWS

I earned a Bachelor of Science degree from the University of Oregon in 1978 and in 1984 I earned a Masters of Fisheries Science degree from the University of Alaska at Juneau, (since renamed as the University of Alaska, Southeast). The Juneau curriculum specializes in the study of Pacific salmon. I held positions with agencies tasked with salmon research and management beginning with summer jobs in 1979 in Rogue River, the Oregon Dept of Fish and Wildlife, and then with the Alaska Department of Fish and Game in Ketchikan, Alaska in 1980. I worked on salmon projects with ADF&G in Anchorage and Juneau for 5 years before moving to American Samoa to serve as a fisheries projects leader for the Department of Marine and Wildlife Resources. Upon returning stateside, I worked for the Yakama/Klickitat Fisheries Project out of Yakima Washington for 5 years leading four research projects studying aspects of salmon supplementation projects in the Yakima River.

I have been employed with Environmental Technology Consultants since 2006. In 2010 I earned certification as a Professional Wetland Scientist, (PWS) from the Society of Wetlands Scientists, (SWS).

No part of my compensation is dependent on the outcome of my investigations or conclusions I may draw from the observed data.

QUALIFICATIONS OF ANNAKATE MARTIN, NRS

I earned a Bachelor of Science degree in Natural Resources from Washington State University in 2002. In 2002 I worked for the University of Idaho on MAP tracking steelhead and salmon on the Snake River out of Clarkston, Washington. 2002-2003 I worked for Idaho Fish and Game as a field technician for

identifying fish in remote streams in Idaho. In 2004, 2016 and currently I have worked for Environmental Technology Consultants conducting wetland delineations and all other environmental reports. From 2007-2014 I worked for 3 Kings Environmental conducting Phase I ESA reports, asbestos and lead surveys. In 2011 I started my own company primarily providing erosion control services. I was employed with Clark Public Utilities as a Watershed Coordinator in which I oversaw property restoration and maintaining a nursery.

I am currently working on getting my certification as a Professional Wetland Scientist from Portland State University. I have 16 years working in the environmental field specializing in many different areas.

No part of my compensation is dependent on the outcome of my investigations or conclusions I may draw from the observed data.

A) Landscape Setting and Land Use:

Lots 3200 and 3300 are bisected by a slough of the Willamette River with over half of the lot's areas laying westward of OHWM. A cursory look at those areas shows they are undeveloped and provide some high value habitat.

Eastward of OHWM has been filled and used for various purposes since the 1930's. Currently there are two older homes in various states of disrepair and renovation, and a large lawn area that is mostly invasive weeds.

The study area raises sharply from 20' elevation at OHWM, to about 28' and remains nearly constant at this level until approaching the homes and 19th Avenue. It appears that about 3 to 4 feet of a sandy clay fill material was spread out over the property probably before the homes were constructed. We suspect the fill may be dredge spoils from the slough, as the 1939 aerial shows the slough and adjoining river areas were used for docks and log storage, and deepening of the slough would have provided a safe harbor area.

The subject site has historically been two single family residences built in 1938, and the surrounding properties are single family residences, and used for farming and other uses since then. The Sparrow Street ROW and Spring Park are now undeveloped, however aerial photos show that it also had homes and was used for farming into the 1960's.

There is now a dirt road that runs through the middle of the properties and evidence of vehicles driving on the west area of the lots. The dirt road and vehicles appear in aeriels about 1970, before that time yard area appears to have been used for farming.

B) Site Alterations:

Aerial photos show the property is basically the same as it was in 2000. Historically the land has been a single-family residence since 1938 and was probably logged to establish the homes and property. From the aerial photos as early as 2000 it appears that the lots have had cars driving on the road in the middle of property and parking behind the houses.

C) Precipitation Data and Analysis:

Precipitation since October 2017 had been 50% above and below average. With the hydrologic conditions being above average in April and below average the two months before and below average in May we would expect to not see hydrologic conditions.

This wetland observations were made on May 25, 2018 and the site received below average precipitation 20 days before the site visit. We therefore need to assume dry season hydrology and would not necessarily expect to see shallow water tables in jurisdictional wetlands.

Table 1. Recent observed precipitation data compared to the Wetland Evaluation Technique (WETS) tables. WETS Station: Portland Airport, Lat = 45.5898°, Long= -121.5951°, Elevation = 21'. Subject Property is 18 miles south at Lat = 45.434070°, Long= -121.64527°, Elevation = 11'. Note that recent precipitation is estimated using Doppler Radar for the subject property (Farmlogs.com).					
Month	Recent Precip	Compared to WETS Avg	WETS Average Precipitation (In)		
			Avg	30% chance will have	
				Less than	More than
July 2017	0.00	Below	0.52	0.26	0.61
August	0.14	Below	0.55	0.19	0.62
September	2.31	Above	1.37	0.57	1.63
October	5.33	Above	3.59	2.35	4.31
November	6.95	Above	5.63	3.94	6.68
December	3.40	Below	5.75	4.02	6.83
January 2018	5.89	Above	5.11	3.79	5.99
February	2.21	Below	3.73	2.33	4.50
March	2.93	Below	4.06	3.00	4.76
April	4.05	Above	2.93	2.20	3.43
May	0.28	Below	2.54	1.37	3.10
June			1.63	1.04	1.97
Annual				33.07	41.31
Total	33.49	Above	37.41		

Table 2. Observed Precipitation in 24 days prior to field investigations. Data from Farmlogs.com	
5/25/2018	0.0
5/24/2018	0.0
5/23/2018	0.0
5/22/2018	0.0
5/21/2018	0.0
5/20/2018	0.0
5/19/2018	0.0
5/18/2018	0.0
5/17/2018	0.0
5/16/2018	0.0
5/15/2018	0.0
5/14/2018	0.0

Table 2. Observed Precipitation in 24 days prior to field investigations. Data from Farmlogs.com	
5/13/2018	0.0
5/12/2018	0.0
5/11/2018	0.05"
5/10/2018	0.00"
5/9/2018	0.14"
5/8/2018	0
5/7/2018	0.00"
5/6/2018	0
5/5/2018	0

Deductions of Recent Weather Data: Because the wetland determination was conducted under dry season conditions, absence of observed wetland hydrology does not necessarily rule out the possibility that the area is a wetland.

D) Methods: (site-specific methods for field investigation)

Wetland determinations and delineations discussed in this report were conducted in accordance with the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual ("the manual"), including regional supplements and applicable guidance, and supporting technical or guidance documents issued by the Department of State Lands.

We traversed the site to determine upland areas and wetland areas. The only wetland area found was south of the project sites in the ROW swale. We investigated the bank along the Willamette slough and determined the OHWM and used a inclinometer to determine the top of the slope.

E) Description of all Wetlands and Other Non-Wetland Waters:

Willamette river slough, 0.000 Acres within study area, about 503 linear feet. The Willamette river slough is on the west side of the study area on the subject site property. As we defined the study boundary to be OHWM of the slough, it technically does not extend into the study area except during flood stage. We took data plots P5 and P6 on the side of the bank to define OHWM and describe the habitat. Note that P5 and P6 are off the property boundary, the reason for this is that this spot was accessible, the bank along the property is a very steep treacherous blackberry mess, and we weren't incline to risk life and limb just to get a data plot. The NWI map does show this feature.

The Willamette River is Riverine, **Tidal, Unconsolidated Bottom, Mud, (R1UBV)**.

Wetland "A" 0.07 Acres in the Sparrow Street ROW. Wetland "A" is located in the ROW south of the subject properties. Wetland "A" was probably larger prior to prior to the fill that was placed on the subject property. Wetland "A" in earlier times was also probably drained by Wetland "B" which is a ditch that extends to the Willamette River. Now however the ditch is blocked where it once connected to Wetland "A", the blockage occurred some time ago as evidence by the large Cottonwood trees growing in the blockage. Wetland "A" extends South a short distance before the land raises beyond the ROW.

The dominant plants are Reed Canary Grass and Cottonwood, and the area is heavily shaded by large ivy covered trees that surround the wetland.

Wetland "A" is a small depressional wetland bound by 3 to 4 ft of fill on Lot 3300 to the north, and by higher ground in other directions. The Cowardin Classification is Palustrine Forested Broad Leaf Deciduous, Seasonally Flooded, PFO1C.

Wetland "B", 188 SQFT, 0.004 Acres. Wetland "B" is a short ditch probably dug back when what is now Spring Park was an active farm. Wetland "B" probably drained what is now Wetland "A", but is now blocked by some dirt that may have been intentionally dumped there for some unknown purpose. That blockage was done some years ago, as evidence by the 24" Cottonwoods growing there now. We did not observe water marks, algal mats or other signs of significant surface hydrology, although the soil was saturated to the surface in a short portion of the ditch.

Ditches would normally have a riverine classification, however as no flow occurs now in normal conditions, we classify "B" as a small depressional wetland, the Cowardin class is Palustrine, Forested, Broad-Leaved Deciduous, Seasonally flooded/saturated, or PFO1E.

Total Jurisdictional Area. Wetland's "A" and "B" total 0.08 Acres in the study area, and 0 acres on the subject property.

F) Deviation from LWI or NWI:

The NWI map shows the Willamette river as Riverine and the ROW that is south of the properties as wetland. The map doesn't show wetlands on the subject sites properties.

G) Mapping Method:

We defined and placed flags and laths for the wetland boundary and data plots, and also for Top-of-Bank shown in this report on May 25, 2018, and located them using a Topcon GPS with an advertised accuracy of less than 3' horizontal.

A topographic and boundary survey was provided by:

Andy Paris and Associates
16057 Boones Ferry Road
Lake Oswego, OR 97035

We rotated our GPS data onto the map produced by Andy Paris & Associates, however we used our own determination of Top-of-Bank rather than the topo shown by the surveyors. Our result was close to theirs except on the northern end where we suspect their topography was not correct.

H) Additional Information: (i.e., if needed to establish state jurisdiction)

We expect that the streams and wetlands described in this report will be determined to be jurisdictional by the USACE and the City of Milwaukie.

I) Results and Conclusions:

Hydrology. Direct precipitation is the major source of hydrology for the two tax lots in question, there do not appear to be appreciable contributions from upslope sources. Wetland "A" is a classic toe slope wetland and may also receive some runoff from the paved portions of Sparrow Street.

Plants. There are two plant communities in the study area. The Sparrow Street ROW and the OHWM have undisturbed vegetation which primarily has an overstory of Cottonwood and Alder, shrubs of Blackberry, Beaked Hazelnut and Red Osier Dogwood, the herbaceous strata is primarily weeds.

The subject property is in a degraded state with due to dominance by invasive and non-native species. The mowed grass area is dominated by Narrow leaf plantain, the edges have large amounts of Blackberry, Canada thistle, ivy, and some ornamental trees.

Soils. The soil on the lawn area of the property is believed to be fill, likely dredge tailings from the slough. It is a compacted sandy clay soil that appears to inhibit root growth. It was very hard to dig.

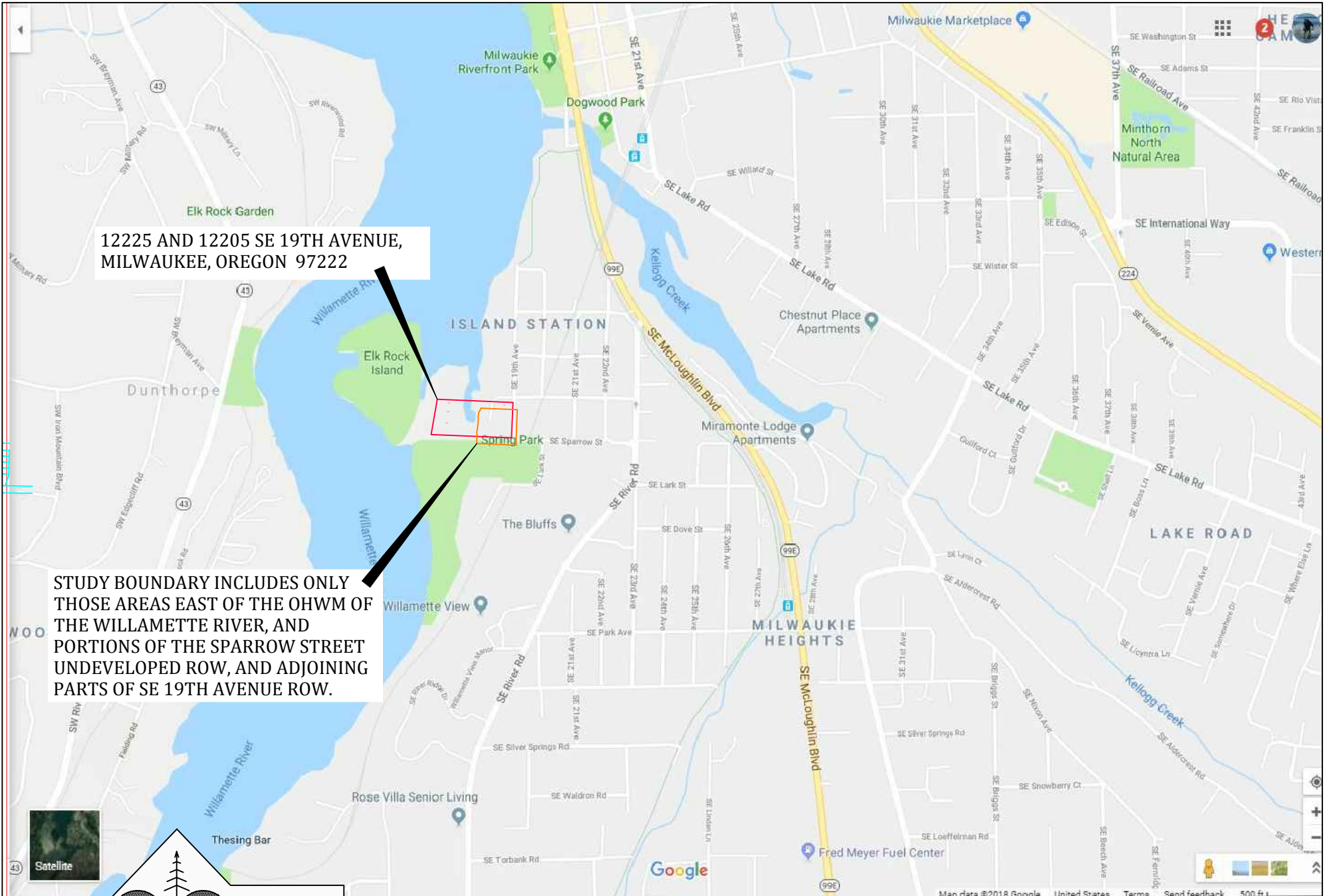
Soils in the ROW and along the OHWM are primarily deep loam soils, and exhibit classic depleted matrix colors in the wetland areas.

J) Disclaimer: OAR141-090-0035(12)(j) :

"This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055."

APPENDIX A - Maps:

- Figure 1: Location Map & Topography
- Figure 2: Tax Map
- Figure 3: NWI Map
- Figure 4: Soil Map
- Figure 5A: Historic Aerial Image 1939
- Figure 5B: Historical Aerial Image 1948
- Figure 5C: Historical Aerial Image 1961
- Figure 5D: Historical Aerial Image 1996 Flood
- Figure 5E: Historical Aerial Image 7/23/2003
- Figure 5F: Recent Aerial Image 5/22/2017
- Figure 6A: Delineated Wetland Boundaries and OHWM
- Figure 6B: Delineated Wetland Boundaries with Topography
- Figure 6C: Detail Showing Photo and Sample Locations.



12225 AND 12205 SE 19TH AVENUE,
MILWAUKEE, OREGON 97222

STUDY BOUNDARY INCLUDES ONLY
THOSE AREAS EAST OF THE OHWM OF
THE WILLAMETTE RIVER, AND
PORTIONS OF THE SPARROW STREET
UNDEVELOPED ROW, AND ADJOINING
PARTS OF SE 19TH AVENUE ROW.

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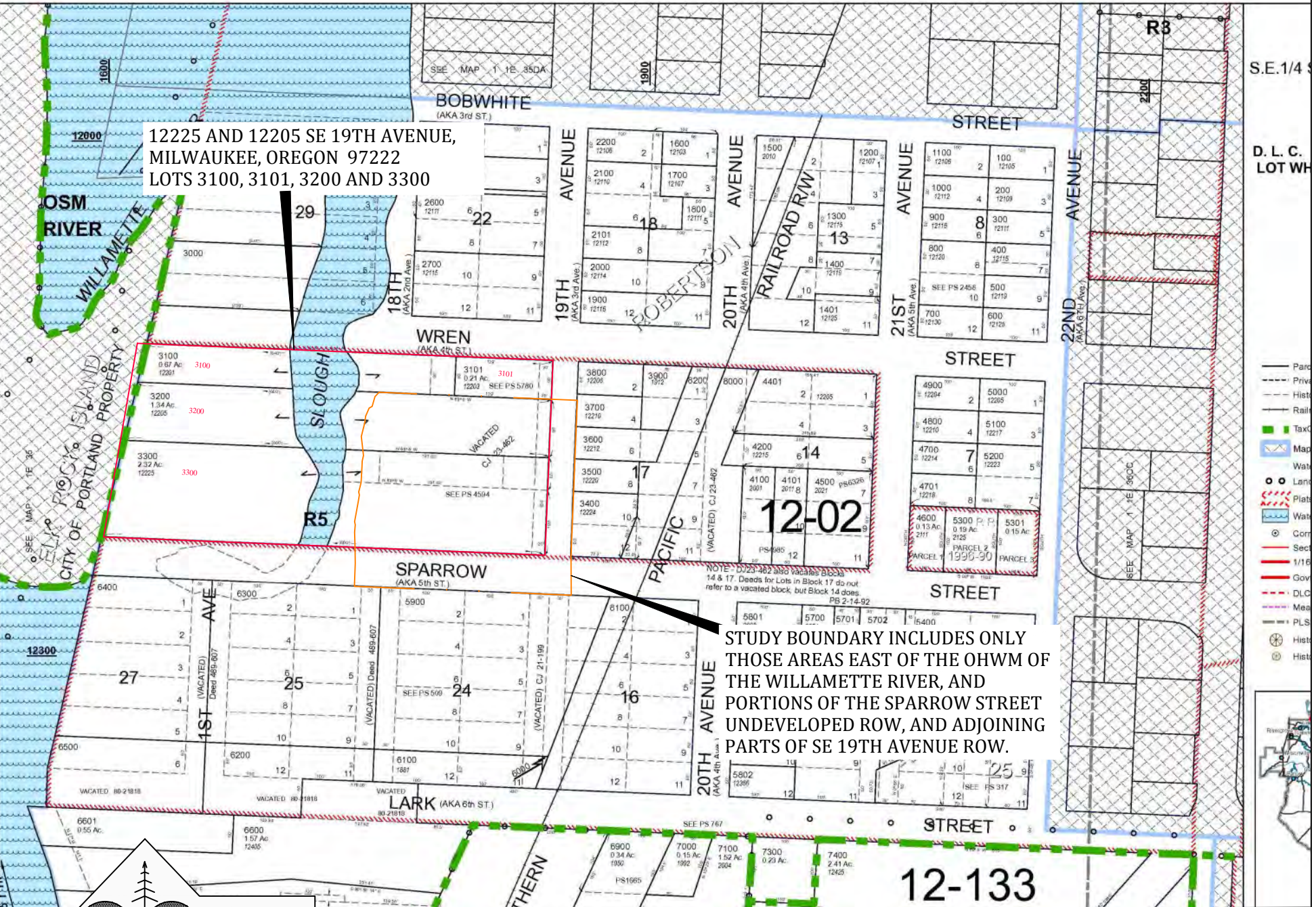
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360-696-4403

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Jul 30, 2018

LOCATION MAP
GOOGLE MAPS

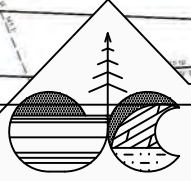
MILWAUKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

12225 AND 12205 SE 19TH AVENUE,
MILWAUKEE, OREGON 97222
LOTS 3100, 3101, 3200 AND 3300



STUDY BOUNDARY INCLUDES ONLY THOSE AREAS EAST OF THE OHWM OF THE WILLAMETTE RIVER, AND PORTIONS OF THE SPARROW STREET UNDEVELOPED ROW, AND ADJOINING PARTS OF SE 19TH AVENUE ROW.

NOTE: D-23-462 also vacates blocks 14 & 17. Deeds for Lots in Block 17 do not refer to a vacated block, but Block 14 does.
PS 2-14-92



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TAX MAP
11E35DD MILWAUKIE
SE 1/4 SE 1/4 SEC 35 T1S R1E WM
CLACKAMAS COUNTY

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

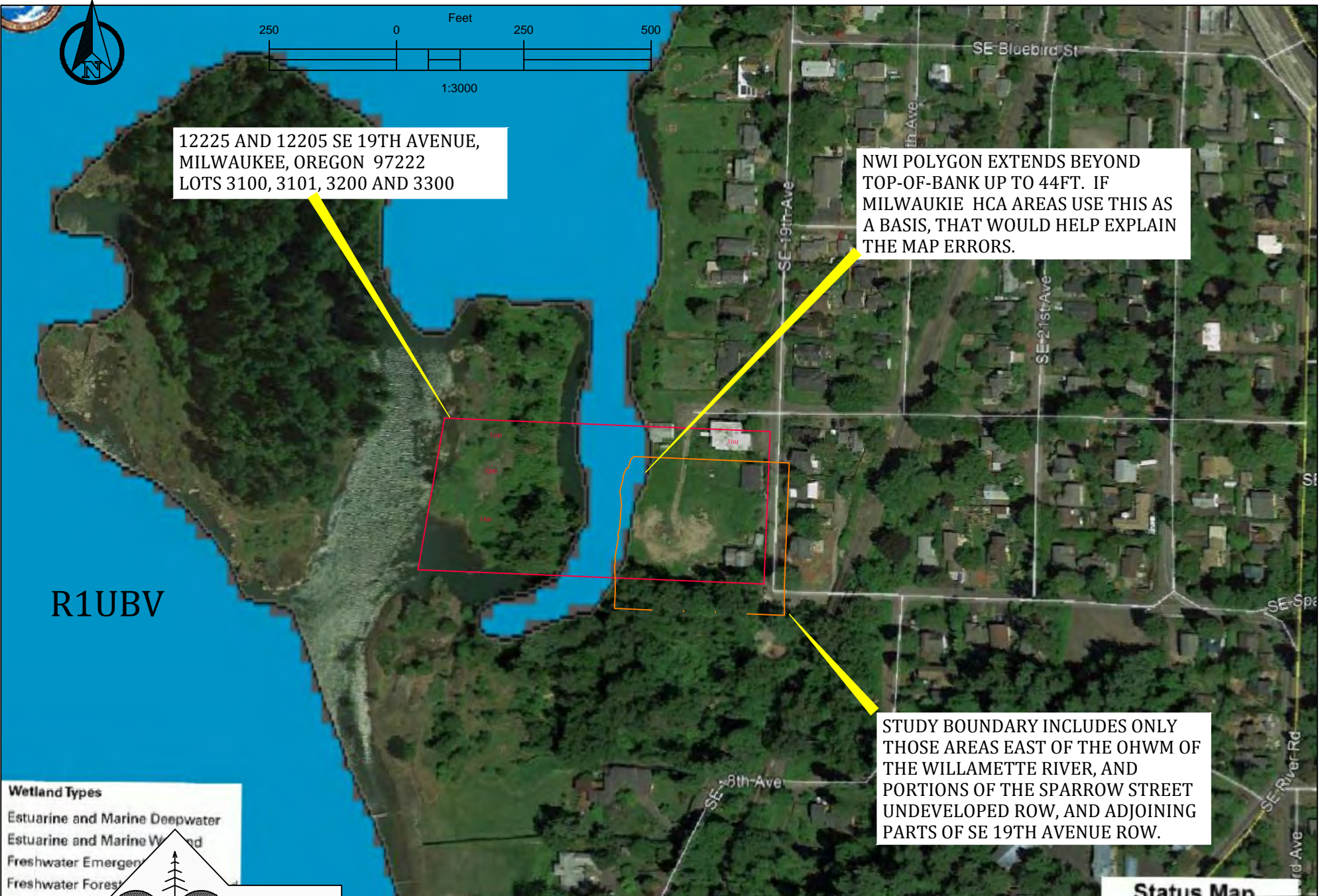
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2

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S.E. 1/4 S
D. L. C.
LOT WH

- Parc
- - - Priv
- - - Hist
- - - Rail
- Tax
- Map
- Wat
- Land
- Plat
- Wat
- Corr
- 1/16
- Gov
- DLC
- Mea
- PLS
- Hist
- Hist





12225 AND 12205 SE 19TH AVENUE,
MILWAUKEE, OREGON 97222
LOTS 3100, 3101, 3200 AND 3300

NWI POLYGON EXTENDS BEYOND
TOP-OF-BANK UP TO 44FT. IF
MILWAUKIE HCA AREAS USE THIS AS
A BASIS, THAT WOULD HELP EXPLAIN
THE MAP ERRORS.

STUDY BOUNDARY INCLUDES ONLY
THOSE AREAS EAST OF THE OHWM OF
THE WILLAMETTE RIVER, AND
PORTIONS OF THE SPARROW STREET
UNDEVELOPED ROW, AND ADJOINING
PARTS OF SE 19TH AVENUE ROW.

R1UBV

Wetland Types

Estuarine and Marine Deepwater
Estuarine and Marine Wetland
Freshwater Emergent
Freshwater Forest

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NWI MAP
NWI POLYGONS AS SHOWN BY THE USFWS IN GOOGLE
EARTH

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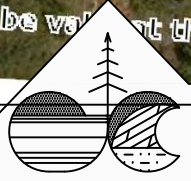
Status Map



67 = NEWBERG
FINE SANDY LOAM

67

may not be valid at this scale.



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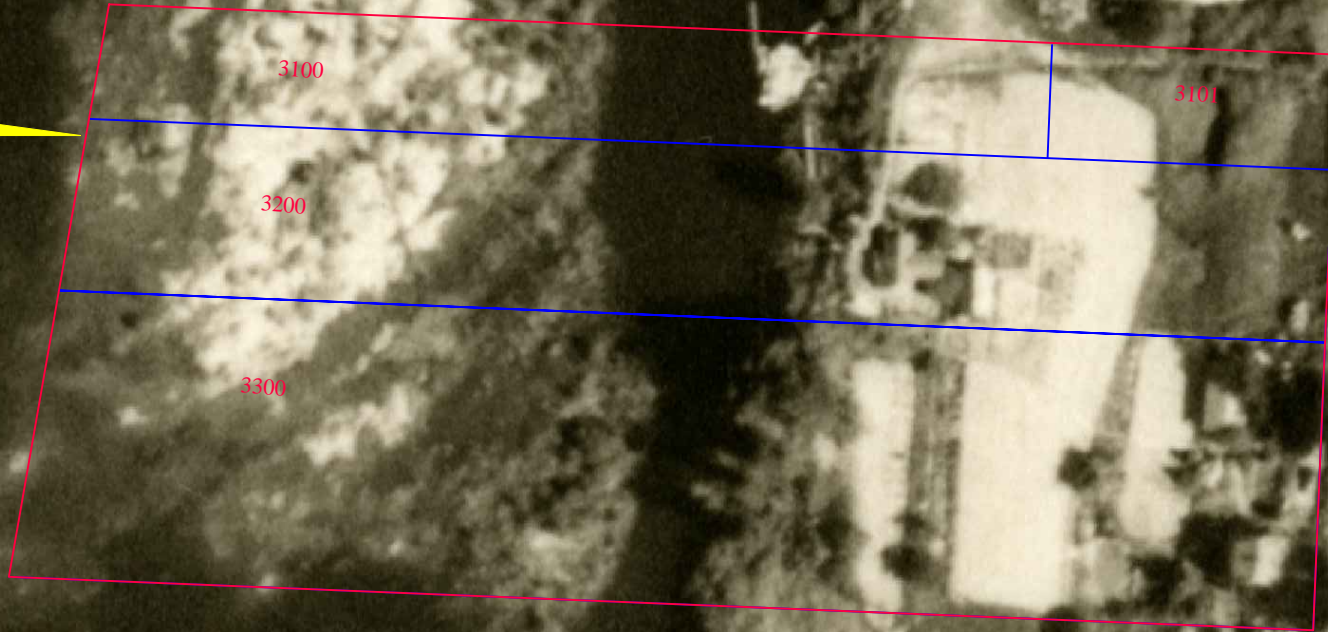
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NRCS SOIL MAP

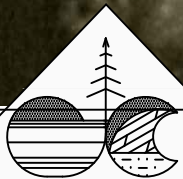
MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
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SUBJECT
PROPERTY



PROPERTY APPEARS TO BE IN
USE FOR FARMING. WHAT IS
NOW SPRING PARK IS
CLEARED, PROBABLY FARMED.



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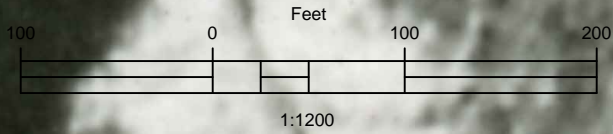
1939 AERIAL PHOTO
SOURCE: USACE

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

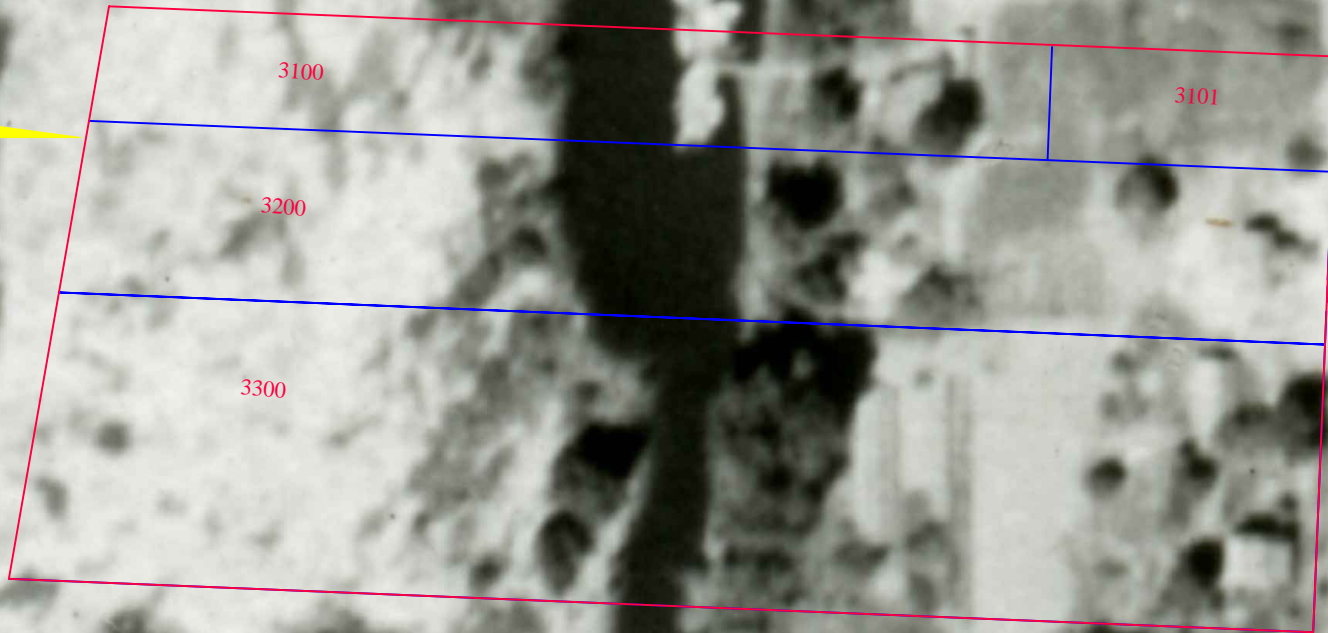
Jul 30, 2018

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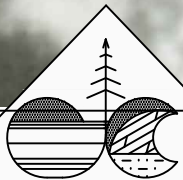
5A



SUBJECT
PROPERTY



PROPERTY APPEARS TO BE IN
USE FOR FARMING. WHAT IS
NOW SPRING PARK IS
CLEARED, PROBABLY FARMED.



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1948 AERIAL PHOTO
SOURCE: USACE

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WEST LINN, OR 97068

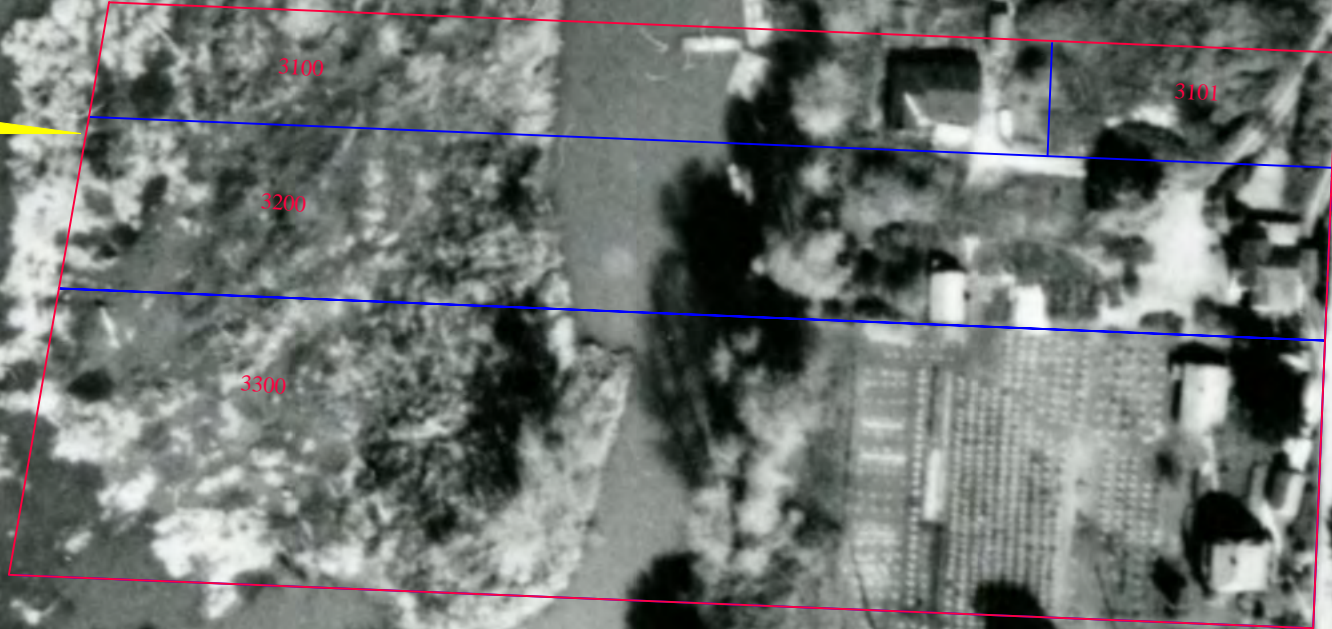
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SHEET

5B



SUBJECT
PROPERTY



PROPERTY APPEARS TO BE IN
USE FOR FARMING. WHAT IS
NOW SPRING PARK IS
CLEARED, PROBABLY FARMED.



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5C

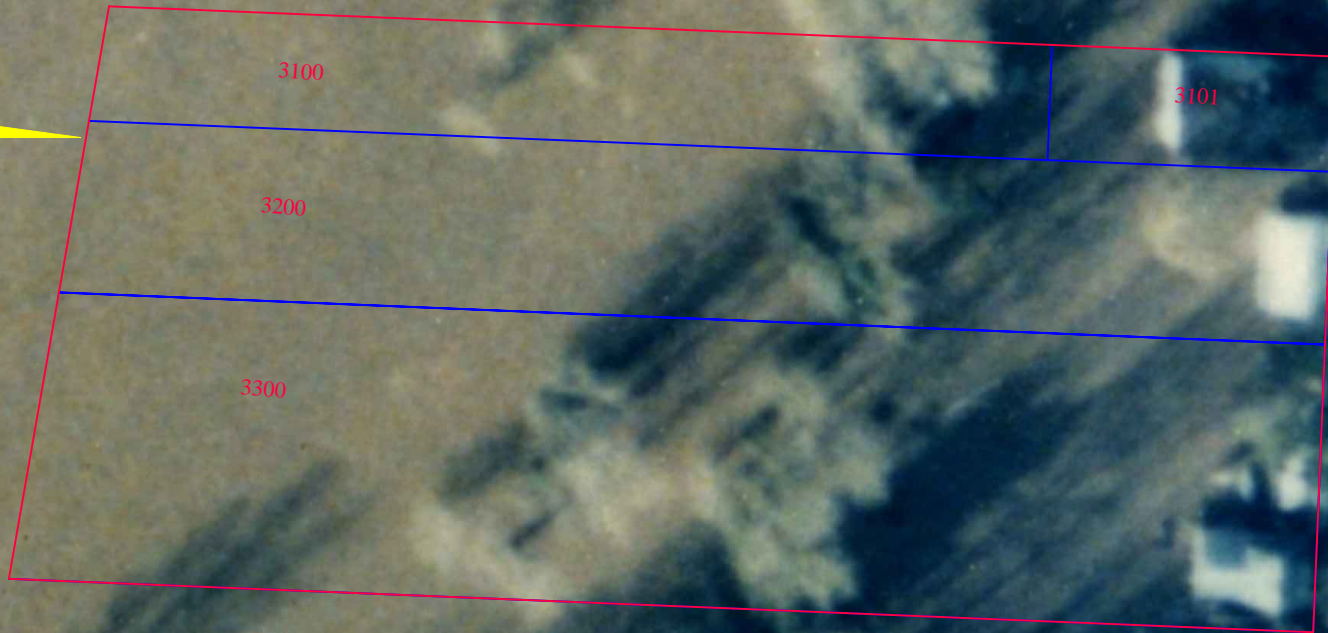
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1961 AERIAL PHOTO
SOURCE: USACE

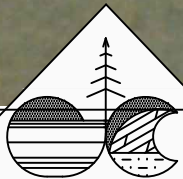
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GILLIS PROPERTIES LLC
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WEST LINN, OR 97068



SUBJECT
PROPERTY



FLOOD WATERS ARE
SEEN UP TO THE
HOUSES.



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5D

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1996 AERIAL PHOTO
FLOOD OF 1996
SOURCE: USACE

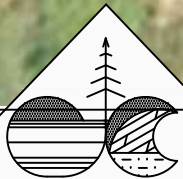
MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
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WEST LINN, OR 97068



SUBJECT
PROPERTY



FARMING USES APPEAR TO HAVE
CEASED. AN ASSORTMENT OF
VEHICLES ARE PARKED ON THE
PROPERTY. SPRING PARK IS NOW
FORESTED.



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7/17/2003 AERIAL PHOTO
SOURCE: CITY OF PORTLAND

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GILLIS PROPERTIES LLC
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WEST LINN, OR 97068

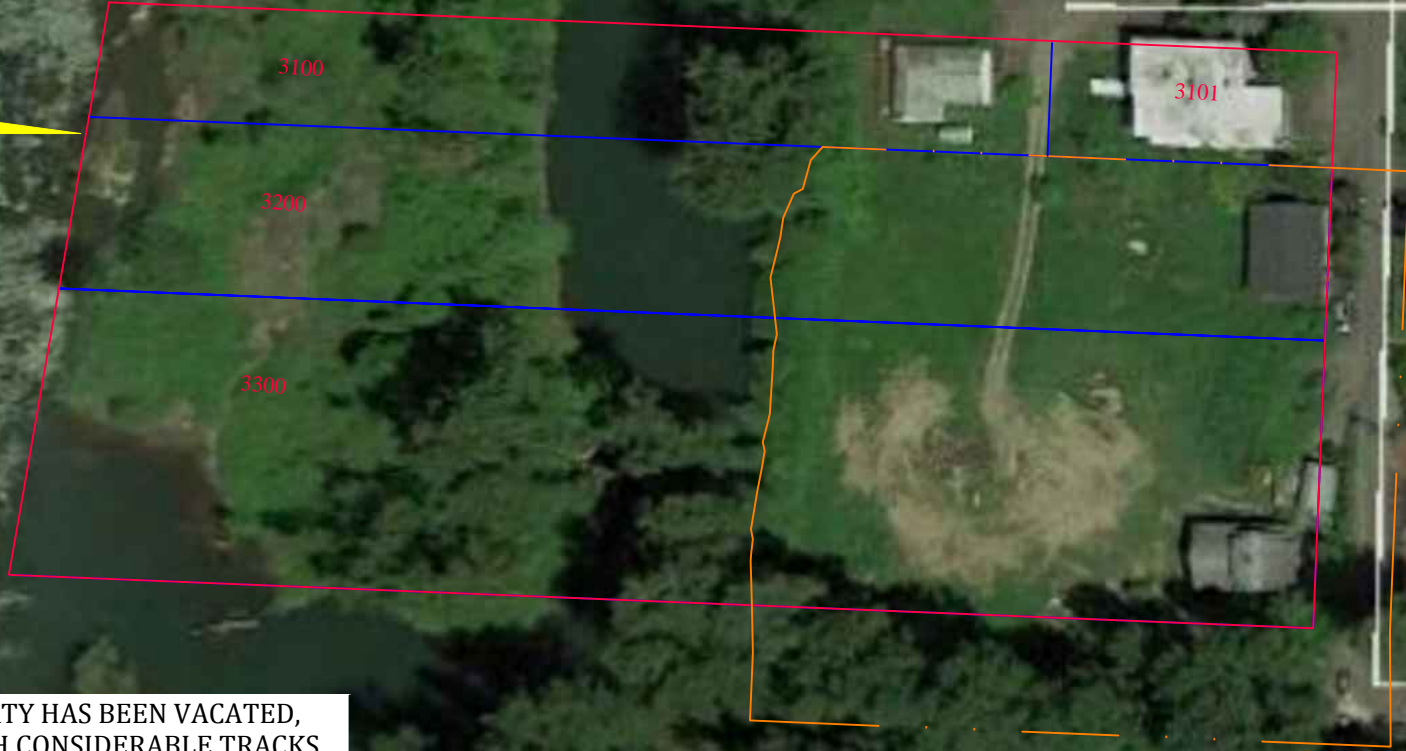
Jul 30, 2018

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SE



SUBJECT
PROPERTY
LOTS 3200
AND 3300



PROPERTY HAS BEEN VACATED,
THOUGH CONSIDERABLE TRACKS
FROM VEHICLES ARE STILL
EVIDENT.



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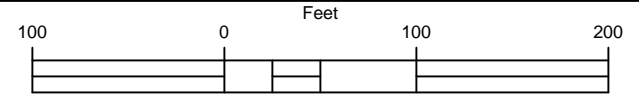
5/22/2017 AERIAL PHOTO
SOURCE: GOOGLE EARTH

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WEST LINN, OR 97068

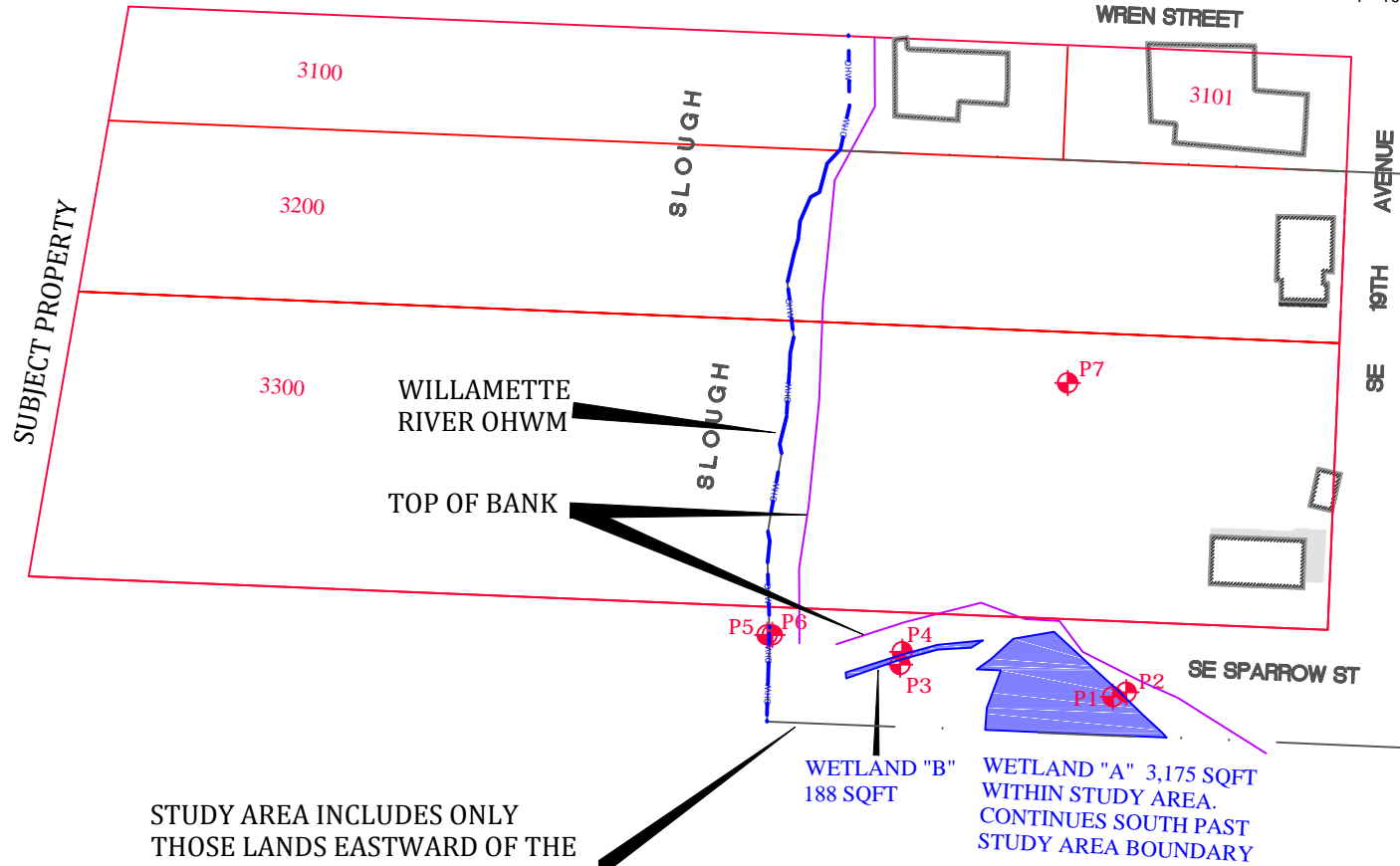
Jul 30, 2018

SHEET

5F



1"=100FT FORMATTED FOR 8.5X11

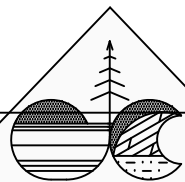


MAPPING: BASE DRAWING BY HAROLD SALO PLS 2264. WETLAND, OHW AND TOP OF BANK ADDED BY ETC USING GPS ACCURATE TO ± 3FT

STUDY AREA INCLUDES ONLY THOSE LANDS EASTWARD OF THE WILLAMETTE RIVER OHWM, AND ALSO INCLUDE PORTIONS OF THE SE SPARROW STREET ROW AND SE 19TH AVENUE ROW.

Disclaimer per OAR 141-090-0035 (7)(k)

This report documents the investigation, best professional judgment and conclusions of the investigator. It is correct and complete to the best of my knowledge. It should be considered a Preliminary Jurisdictional Determination of wetlands and other waters and used at your own risk unless it has been reviewed and approved in writing by the Oregon Department of State Lands in accordance with OAR 141-090-0005 through 141-090-0055.



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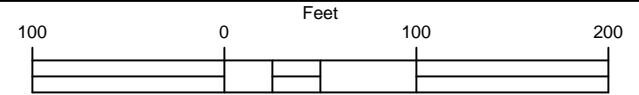
DELINEATED WETLAND BOUNDARIES AND OHWM FOR
STUDY AREA, TAX LOTS 3100, 3102, 3200, AND 3300 IN
SE 1/4 SE 1/4 SEC 35 T1S R1E WM
CLACKAMAS COUNTY

MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068

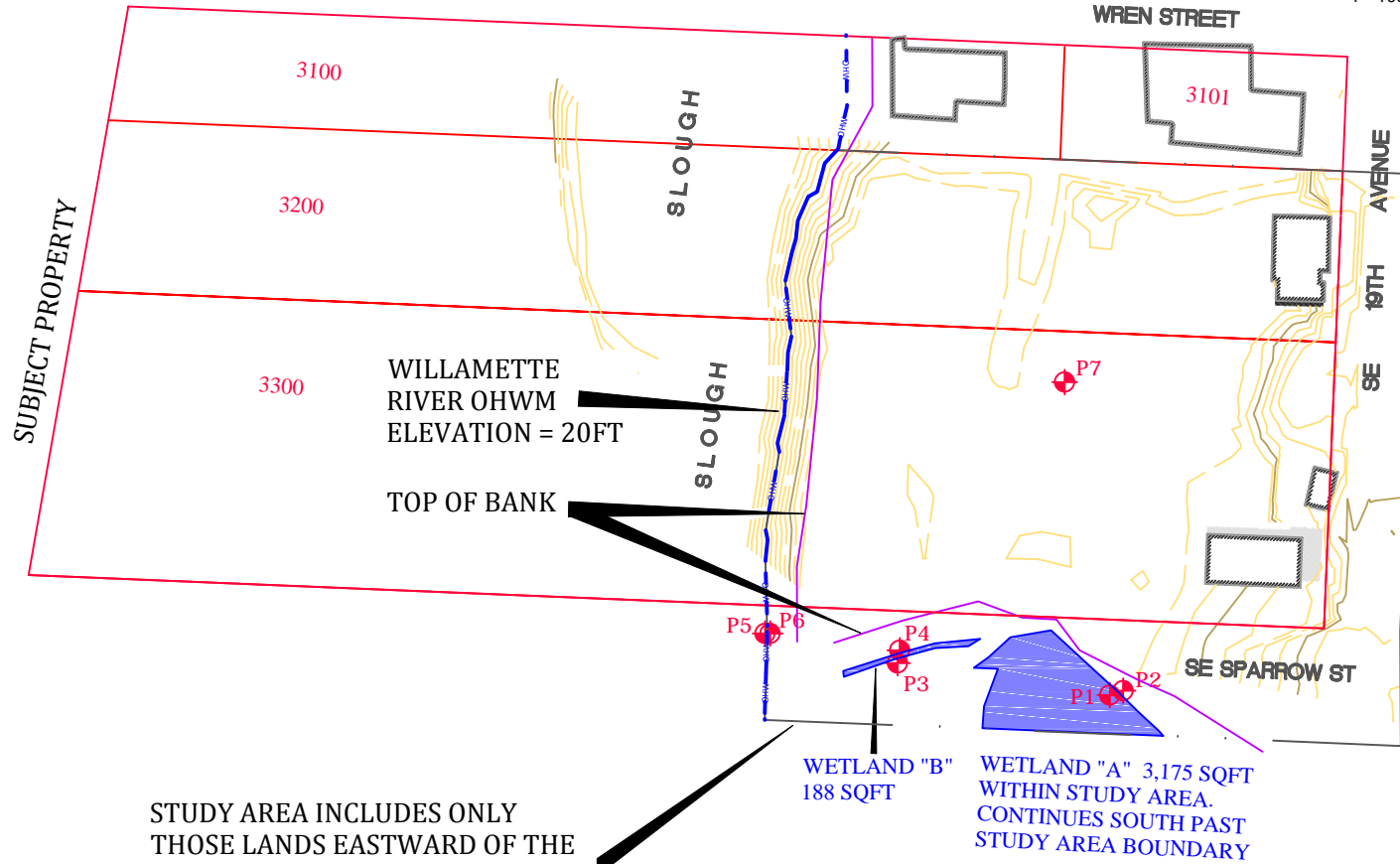
Jul 30, 2018

SHEET

6A



1"=100FT FORMATTED FOR 8.5X11

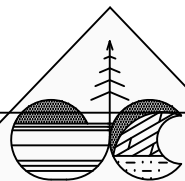


MAPPING: BASE DRAWING BY HAROLD SALO PLS 2264. WETLAND, OHW AND TOP OF BANK ADDED BY ETC USING GPS ACCURATE TO ± 3FT

STUDY AREA INCLUDES ONLY THOSE LANDS EASTWARD OF THE WILLAMETTE RIVER OHWM, AND ALSO INCLUDE PORTIONS OF THE SE SPARROW STREET ROW AND SE 19TH AVENUE ROW.

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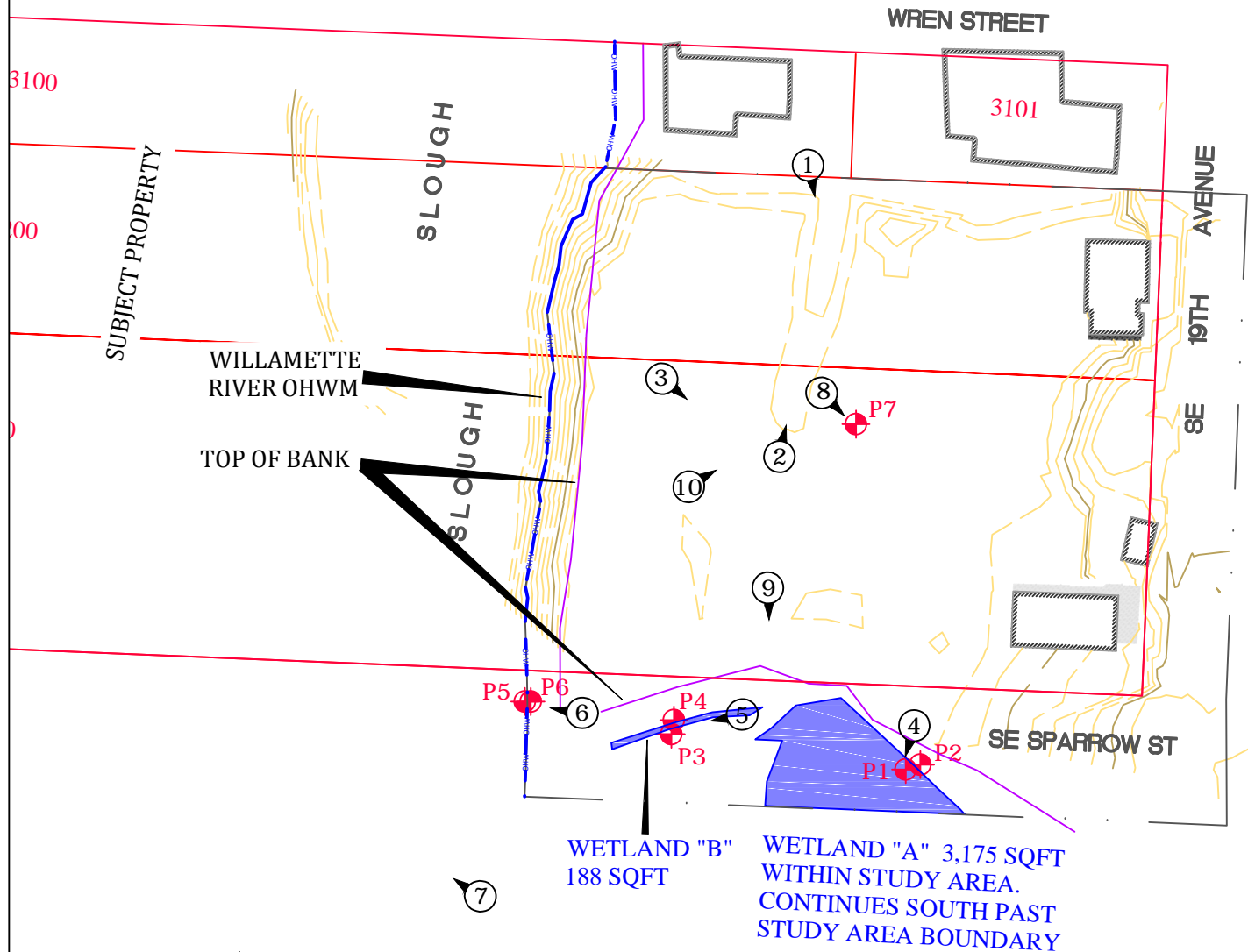
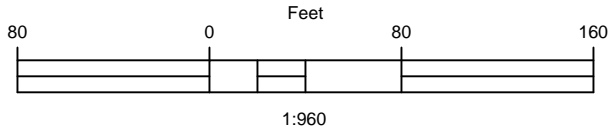


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DELINEATED WETLAND BOUNDARIES AND OHWM FOR STUDY AREA, TAX LOTS 3100, 3102, 3200, AND 3300 IN SE ¼ SE ¼ SEC 35 T1S R1E WM CLACKAMAS COUNTY WITH TOPOGRAPHY

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WEST LINN, OR 97068



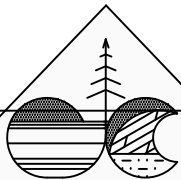
LEGEND

-  **P7** WETLAND DATA POINT
-  **8** PHOTO NUMBER AND DIRECTION

Jul 30, 2018

SHEET

6A



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PHOTO AND SAMPLE LOCATIONS

**MILWAULKIE RIVERFRONT CUSTOM HOMES
GILLIS PROPERTIES LLC
5965 WEST A STREET
WEST LINN, OR 97068**

APPENDIX B - Data Forms

6 PAGES FOLLOW THIS ONE

P1 - Wetland "A"

P2 - Upland pair to P1

P3 - Wetland "B"

P4 - Upland pair to P3

P5 - OHWM of the Slough of the Willamette River

P6 - Upland pair to P5

P7 - Representing the middle of the yard area

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P1**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **Swale** Local relief (concave, convex, none): Slope (%): **1**
 Subregion (LRR): **LRR A** Lat: **45.698792°** Long: **-122.64527°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **wetland**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is sampled area in a wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Enter text
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

Remarks: Wetland "A", a small depressional wetland bound by fill material on Lot 3300, and higher ground in other directions.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 20' NW)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																					
1. Populus trichocarpa	50	YES	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)																					
2.				Total Number of Dominant Species Across All Strata: 2 (B)																					
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)																					
4.																									
Total tree cover =	50 %	= Total Cover																							
<u>Sapling/Shrub Stratum</u> (Plot Size: 10' NW)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:																					
1.				<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;"></th> <th style="width: 30%;"><u>Total % Cover of:</u></th> <th style="width: 30%;"><u>Multiply by:</u></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td>0 %</td> <td>x1 = 0 %</td> </tr> <tr> <td>FACW species</td> <td>0 %</td> <td>x2 = 0 %</td> </tr> <tr> <td>FAC species</td> <td>0 %</td> <td>x3 = 0 %</td> </tr> <tr> <td>FACU species</td> <td>0 %</td> <td>x4 = 0 %</td> </tr> <tr> <td>UPL species</td> <td>0 %</td> <td>x5 = 0 %</td> </tr> <tr> <td>Column Totals:</td> <td>0 % (A)</td> <td>0 % (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = 0		<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species	0 %	x1 = 0 %	FACW species	0 %	x2 = 0 %	FAC species	0 %	x3 = 0 %	FACU species	0 %	x4 = 0 %	UPL species	0 %	x5 = 0 %	Column Totals:	0 % (A)	0 % (B)
	<u>Total % Cover of:</u>	<u>Multiply by:</u>																							
OBL species	0 %	x1 = 0 %																							
FACW species	0 %	x2 = 0 %																							
FAC species	0 %	x3 = 0 %																							
FACU species	0 %	x4 = 0 %																							
UPL species	0 %	x5 = 0 %																							
Column Totals:	0 % (A)	0 % (B)																							
2.																									
3.																									
4.																									
5.																									
Total Shrub Cover	0 %	= Total Cover																							
<u>Herb Stratum</u> (Plot Size:) 5' circular	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:																					
1. Phalaris arundinacea	40	YES	FAC	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) 1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																					
2. Epilobium sp.	10	NO	NOL																						
3.																									
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									
Total herb cover	50 %	= Total Cover																							
<u>Woody Vine Stratum</u> (Plot Size: enter text)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?																					
1. Hedera helix	0 %			Yes <input checked="" type="checkbox"/>																					
2. Clematis spp.	0 %			No <input type="checkbox"/>																					
	0 %	= Total Cover		Enter text																					
% Bare Ground in Herb Stratum	30%																								

Remarks: Plot direction is NW to represent the swale. Hedera helix looks like it is in swale but roots are growing on bank not in swale.

SOIL

Project Site: 3300 & 3200

Sampling Point:

P1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0 – 2	10YR 2/1	100					Silt loam	Organic mix mixed matrix
2– 6	10YR 3/1 10YR 4/1	40 30	7.5 YR4/6	30	C	M	Silty clay loam	
6-13	10YR4/1	50	7.5YR4/6	50	C	M	Silty clay loam	
13-17	10YR 4/1	60	7.5YR4/6	40	C	M	Silty clay	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/>	Histosol (A1)	<input type="checkbox"/>	Sandy Redox (S5)	<input type="checkbox"/>	2 cm Muck (A10)	<input type="checkbox"/>	Red Parent Material (TF2)
<input type="checkbox"/>	Histic Epipedon (A2)	<input type="checkbox"/>	Stripped Matrix (S6)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Black Histic (A3)	<input type="checkbox"/>	Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input checked="" type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	
<input type="checkbox"/>	Depleted Below Dark Surface (A11)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	
<input type="checkbox"/>	Thick Dark Surface (A12)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Mucky Mineral (S1)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: Depth (Inches):	Hydric Soils Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	--

Remarks: Hard to dig due to many roots all through the pit.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/>	Surface Water (A1)	<input type="checkbox"/>	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input checked="" type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Salt Crust (B11)
<input checked="" type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Aquatic Invertebrates (B13)
<input type="checkbox"/>	Sediment Deposits (B2)	<input type="checkbox"/>	Hydrogen Sulfide Odor (C1)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Presence of Reduced Iron (C4)
<input type="checkbox"/>	Iron Deposits (B5)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/>	Surface Soil Cracks (B6)	<input checked="" type="checkbox"/>	Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>	Frost-Heave Hummocks (D7)

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Surface Water Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	12"	
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	11"	

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

Remarks: Saturation was at 11" and water table were to 12".

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P2**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **hillslope** Local relief (concave, convex, none): Slope (%): **60**
 Subregion (LRR): **LRR A** Lat: **45.43448°** Long: **-122.644449°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **wetland**
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sampled area in a wetland? Enter text Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Remarks: On a steep fill slope adjacent to the wetland. There was a rock retaining wall 2' east of the plot on the hillslope which makes me think the swale was built up in this area when the fill was put in on the subject sites.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 20' NW)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:														
1. Populus trichocarpa	50	YES	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 6 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)														
2. Corylus cornuta	40	YES	FAC															
3. Ilex sp.	10	NO	FACU															
4.																		
Total tree cover = 100 % = Total Cover				<u>Prevalence Index worksheet:</u> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%; text-align: left;"><u>Total % Cover of:</u></th> <th style="width: 50%; text-align: left;"><u>Multiply by:</u></th> </tr> </thead> <tbody> <tr> <td>OBL species 0 %</td> <td>x1 = 0 %</td> </tr> <tr> <td>FACW species 0 %</td> <td>x2 = 0 %</td> </tr> <tr> <td>FAC species 0 %</td> <td>x3 = 0 %</td> </tr> <tr> <td>FACU species 0 %</td> <td>x4 = 0 %</td> </tr> <tr> <td>UPL species 0 %</td> <td>x5 = 0 %</td> </tr> <tr> <td>Column Totals: 0 % (A)</td> <td>0 % (B)</td> </tr> </tbody> </table> Prevalence Index = B/A = 0	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species 0 %	x1 = 0 %	FACW species 0 %	x2 = 0 %	FAC species 0 %	x3 = 0 %	FACU species 0 %	x4 = 0 %	UPL species 0 %	x5 = 0 %	Column Totals: 0 % (A)	0 % (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species 0 %	x1 = 0 %																	
FACW species 0 %	x2 = 0 %																	
FAC species 0 %	x3 = 0 %																	
FACU species 0 %	x4 = 0 %																	
UPL species 0 %	x5 = 0 %																	
Column Totals: 0 % (A)	0 % (B)																	
Sapling/Shrub Stratum																		
(Plot Size: 10' NW)																		
1. Prunus lasitanica	5	NO	NOL															
2. Rubus armeniacus	20	YES	FAC															
3.																		
4.																		
5.																		
Total Shrub Cover 25% = Total Cover																		
Herb Stratum																		
(Plot Size:) 5' circular																		
1. Phalaris arundinacea	10	NO	FAC															
2. Galium aparine.	50	YES	FACU															
3. Holcus lanatus	5	NO	FAC															
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
Total herb cover 65 % = Total Cover																		
Woody Vine Stratum																		
(Plot Size: enter text)																		
1. Hedera helix	80 %	YES	FACU															
2. Clematis ligusticifolia	30 %	YES	FAC															
	0 %	= Total Cover																
% Bare Ground in Herb Stratum 0%																		
300%																		

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - 5 - Wetland Non-Vascular Plants¹
 - 6 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes
 Enter text No

Remarks:

SOIL

Project Site: 3300 & 3200

Sampling Point:

P2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0 – 10	10YR 2/2	100					Silty clay loam	many roots
10 - 17	10YR2/2	80	7.5 YR3/4	20	C	M	Silty clay loam	
17 - 21	10YR4/2	60	7.5YR3/4	40	C	M	Silty clay loam	soil was moist

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)					
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)					
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)					
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)						
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)						

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type:					
Depth (Inches):					

Remarks: Fill material-gravels in soil matrix. Plot location selected to be high enough on the slope so that depleted layer would start at 10"

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:				Wetland Hydrology Present?			
Surface Water Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	21.5"	
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	21"	

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

Remarks: **Hydrology was present but below 12".**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P3**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **hillslope** Local relief (concave, convex, none): Slope (%): **2**
 Subregion (LRR): **LRR A** Lat: **45.43448°** Long: **-122.644449°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **wetland**
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sampled area in a wetland? Enter text Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: Plot located at the bottom of a ditch that may have connected and drained Wetland "A" in earlier times, but is now cut off at the upper end by some large cottonwood trees and perhaps some fill.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 30' west)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:														
1. Populus balsamifera	20	YES	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)														
2.																		
3.																		
4.																		
Total tree cover =	20 %	= Total Cover		<u>Prevalence Index worksheet:</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; text-align: center;"><u>Total % Cover of:</u></td> <td style="width: 50%; text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species 0 %</td> <td>x1 = 0 %</td> </tr> <tr> <td>FACW species 0 %</td> <td>x2 = 0 %</td> </tr> <tr> <td>FAC species 0 %</td> <td>x3 = 0 %</td> </tr> <tr> <td>FACU species 0 %</td> <td>x4 = 0 %</td> </tr> <tr> <td>UPL species 0 %</td> <td>x5 = 0 %</td> </tr> <tr> <td>Column Totals: 0 % (A)</td> <td>0 % (B)</td> </tr> </table> Prevalence Index = B/A = 0	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species 0 %	x1 = 0 %	FACW species 0 %	x2 = 0 %	FAC species 0 %	x3 = 0 %	FACU species 0 %	x4 = 0 %	UPL species 0 %	x5 = 0 %	Column Totals: 0 % (A)	0 % (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species 0 %	x1 = 0 %																	
FACW species 0 %	x2 = 0 %																	
FAC species 0 %	x3 = 0 %																	
FACU species 0 %	x4 = 0 %																	
UPL species 0 %	x5 = 0 %																	
Column Totals: 0 % (A)	0 % (B)																	
<u>Sapling/Shrub Stratum</u> (Plot Size: 5' circle)																		
1. Rubus armeniacus	5	NO	FAC															
2.																		
3.																		
4.																		
5.																		
Total Shrub Cover	25%	= Total Cover																
<u>Herb Stratum</u> (Plot Size:) 5' circle				<u>Hydrophytic Vegetation Indicators:</u> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
1. Equisetum arvense	10	NO	FAC															
2. Epilobium sp.	5	NO	FAC															
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
Total herb cover	15 %	= Total Cover																
<u>Woody Vine Stratum</u> (Plot Size: enter text)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Enter text No <input type="checkbox"/>														
1. Hedera helix	%																	
2. Clematis spp.	%																	
	40 %	= Total Cover																
% Bare Ground in Herb Stratum 98%	%																	

Remarks: Mostly bare soil in the bottom of small channel, minimal roots in ditch.

SOIL

Project Site: 3300 & 3200

Sampling Point:

P3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0 – 4	10YR 2/2	100					Silt loam	
4-17	10YR3/2	80	10YR4/4	20	C	M	Silt loam	soil was moist
17-21	10YR4/1	60	10YR4/4	40	C	M	Silt loam	soil was moist

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)					
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)					
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)					
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)						
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Depleted Dark Surface (F7)						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)						

Restrictive Layer (if present):	Hydric Soils Present?	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>
Type:					
Depth (Inches):					

Remarks: Middle of drainage ditch and soil moist from 4" to 21".

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)			
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)			

Field Observations:				Wetland Hydrology Present?			
Surface Water Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):		
Water Table Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	6"	

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

Remarks: Saturation present around 6" but water didn't fill up the pit.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P4**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **hillslope** Local relief (concave, convex, none): Slope (%): **7**
 Subregion (LRR): **LRR A** Lat: **45.43448°** Long: **-122.64548°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **wetland**
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is sampled area in a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Enter text
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: Plot located on the top of the ditch (Wetland "B").

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 10' N swale)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1.				Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2.				Total Number of Dominant Species Across All Strata: 5 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 60% (A/B)
4.				
Total tree cover =	0 %	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot Size: 5' circle)				
1. Rubus armeniacus	20	YES	FAC	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 % x1 = 0 % FACW species 0 % x2 = 0 % FAC species 0 % x3 = 0 % FACU species 0 % x4 = 0 % UPL species 0 % x5 = 0 % Column Totals: 0 % (A) 0 % (B) Prevalence Index = B/A = 0
2. Robinia pseudoacacia	5	YES	FACU	
3.				
4.				
5.				
Total Shrub Cover	25%	= Total Cover		
<u>Herb Stratum</u> (Plot Size:) 5' circle				
1. Geranium lucidum	50	YES	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. Geranium robertianum	30	YES	FAC	
3. Galium aparine	20	NO	FACU	
4. Vitis sp.	50	YES	FACU	
5.				
6.				
7.				
8.				
9.				
10.				
Total herb cover	150 %	= Total Cover		
<u>Woody Vine Stratum</u> (Plot Size: enter text)				
1. Hedera helix	%			Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Enter text
2. Clematis spp.	%			
	%	= Total Cover		
% Bare Ground in Herb Stratum	0%			

Remarks: Veg plot looks away from ditch (north toward the subject property)

SOIL

Project Site: 3300 & 3200

Sampling Point:

P4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-16	10YR 2/2	100					Silt loam	
16-18	10YR3/2	100					Silt loam	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/>	Histosol (A1)	<input type="checkbox"/>	Sandy Redox (S5)	<input type="checkbox"/>	2 cm Muck (A10)	<input type="checkbox"/>	Red Parent Material (TF2)
<input type="checkbox"/>	Histic Epipedon (A2)	<input type="checkbox"/>	Stripped Matrix (S6)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Black Histic (A3)	<input type="checkbox"/>	Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	
<input type="checkbox"/>	Depleted Below Dark Surface (A11)	<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	
<input type="checkbox"/>	Thick Dark Surface (A12)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Mucky Mineral (S1)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>		<input type="checkbox"/>	

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: Depth (Inches):	Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Nice upland soil	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/>	Surface Water (A1)	<input type="checkbox"/>	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Salt Crust (B11)
<input type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Aquatic Invertebrates (B13)
<input type="checkbox"/>	Sediment Deposits (B2)	<input type="checkbox"/>	Hydrogen Sulfide Odor (C1)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Presence of Reduced Iron (C4)
<input type="checkbox"/>	Iron Deposits (B5)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/>	Surface Soil Cracks (B6)	<input type="checkbox"/>	Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>	

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches):	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches):	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches):	

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

Remarks: **No evidence of hydrology**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P5**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **hillslope** Local relief (concave, convex, none): Slope (%): **80**
 Subregion (LRR): **LRR A** Lat: **45.43470°** Long: **-122.64527°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **Riverine**

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is sampled area in a wetland? Enter text Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Remarks: OHWM side channel of Willamette river. Banks very steep, vertical in places.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 10' toward river)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																																
1.				Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)																																
2.				Total Number of Dominant Species Across All Strata: 2 (B)																																
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)																																
4.				Prevalence Index worksheet:																																
Total tree cover = 0 % = Total Cover				<table style="width: 100%; border: none;"> <tr> <td colspan="2" style="text-align: center;"><u>Total % Cover of:</u></td> <td colspan="2" style="text-align: center;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species</td> <td style="text-align: right;">0 %</td> <td>x1 =</td> <td>0 %</td> </tr> <tr> <td>FACW species</td> <td style="text-align: right;">0 %</td> <td>x2 =</td> <td>0 %</td> </tr> <tr> <td>FAC species</td> <td style="text-align: right;">0 %</td> <td>x3 =</td> <td>0 %</td> </tr> <tr> <td>FACU species</td> <td style="text-align: right;">0 %</td> <td>x4 =</td> <td>0 %</td> </tr> <tr> <td>UPL species</td> <td style="text-align: right;">0 %</td> <td>x5 =</td> <td>0 %</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: right;">0 % (A)</td> <td></td> <td>0 % (B)</td> </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = 0</td> </tr> </table>	<u>Total % Cover of:</u>		<u>Multiply by:</u>		OBL species	0 %	x1 =	0 %	FACW species	0 %	x2 =	0 %	FAC species	0 %	x3 =	0 %	FACU species	0 %	x4 =	0 %	UPL species	0 %	x5 =	0 %	Column Totals:	0 % (A)		0 % (B)	Prevalence Index = B/A = 0			
<u>Total % Cover of:</u>		<u>Multiply by:</u>																																		
OBL species	0 %	x1 =	0 %																																	
FACW species	0 %	x2 =	0 %																																	
FAC species	0 %	x3 =	0 %																																	
FACU species	0 %	x4 =	0 %																																	
UPL species	0 %	x5 =	0 %																																	
Column Totals:	0 % (A)		0 % (B)																																	
Prevalence Index = B/A = 0																																				
<u>Sapling/Shrub Stratum</u> (Plot Size: 10' toward river)																																				
1. Cornus stolonifera	50	YES	FAC																																	
2. Rubus armeniacus	50	YES	FAC																																	
3.																																				
4.																																				
5.																																				
Total Shrub Cover 100% = Total Cover																																				
<u>Herb Stratum</u> (Plot Size:) 5' toward river																																				
1.				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. No herbaceous plants																																				
3.																																				
4.																																				
5.																																				
6.																																				
7.																																				
8.																																				
9.																																				
10.																																				
Total herb cover 0 % = Total Cover																																				
<u>Woody Vine Stratum</u> (Plot Size: enter text)																																				
1. Hedera helix	10 %	FACU		Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> Enter text No <input type="checkbox"/>																																
2. Clematis spp.	%																																			
	%	= Total Cover																																		
% Bare Ground in Herb Stratum 0%																																				

Remarks: Ivy stops at OHWM a few stems hanging down steep bank. Red Osier Dogwood continues 5 or 10 ft further downslope.

SOIL

Project Site: 3300 & 3200

Sampling Point:

P5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 2 cm Muck (A10)					
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (TF2)					
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)					
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)					
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Matrix (F3)						
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)						
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)						
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Redox Depressions (F8)						

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soils Present? Yes <input type="checkbox"/> No <input type="checkbox"/>
Type:	
Depth (Inches):	

Remarks: Soil pit not dug due to steepness of bank and hazards of falling into river.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/> Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Salt Crust (B11)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Aquatic Invertebrates (B13)	<input checked="" type="checkbox"/> Dry-Season Water Table (C2)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/> Raised Ant Mounds (D6) (LRR A)	
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Frost-Heave Hummocks (D7)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>		

Field Observations:				Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>			
Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No		<input type="checkbox"/>	Depth (inches):	0
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No		<input type="checkbox"/>	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	Depth (inches):	0	

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

Remarks: OHWM determined by recently wetted soils about 1" above current water elevation. We did not observe drift lines, debris or other indicator inundation above this point. Willamette was high at this time due to current flooding in the Columbia river which backs up in the Willamette.

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P6**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **hillslope** Local relief (concave, convex, none): Slope (%): **65**
 Subregion (LRR): **LRR A** Lat: **45.4347°** Long: **-122.64530°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification: **Riverine**
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is sampled area in a wetland? Enter text Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Up slope from P5, about 1 ft higher	

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 30' upslope)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. Cottonwoods just out of 30' range	0			Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2.				Total Number of Dominant Species Across All Strata: 4 (B)
3.				Percent of Dominant Species That Are OBL, FACW, or FAC: 25% (A/B)
4.				
Total tree cover =	0 %	= Total Cover		
<u>Sapling/Shrub Stratum</u> (Plot Size: 30' upslope)				
1. Cornus stolonifera	30	YES	FAC	Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 % x1 = 0 % FACW species 0 % x2 = 0 % FAC species 0 % x3 = 0 % FACU species 0 % x4 = 0 % UPL species 0 % x5 = 0 % Column Totals: 0 % (A) 0 % (B) Prevalence Index = B/A = 0
2. Corylus cornuta	30	YES	FACU	
3. Laurel sp	2	NO	FACU	
4. Rubus armeniacus	10	NO	FAC	
5.				
Total Shrub Cover	68%	= Total Cover		
<u>Herb Stratum</u> (Plot Size:) 5' upslope				
1. Galium aparine	5	YES	FACU	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
Total herb cover	5 %	= Total Cover		
<u>Woody Vine Stratum</u> (Plot Size: enter text)				
1. Hedera helix	90%	YES	FACU	Hydrophytic Vegetation Present? Yes <input type="checkbox"/> Enter text No <input checked="" type="checkbox"/>
2. Vitis sp. (domestic grape)	30%	YES	NOL	
	120 %	= Total Cover		
% Bare Ground in Herb Stratum 0%	%			
Remarks: Veg plot looks uphill (east).				

SOIL

Project Site: 3300 & 3200

Sampling Point:

P6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-16	10YR3/3	100					Silt sand loam	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:	
<input type="checkbox"/>	Histosol (A1)	<input type="checkbox"/>	Sandy Redox (S5)	<input type="checkbox"/>	2 cm Muck (A10)
<input type="checkbox"/>	Histic Epipedon (A2)	<input type="checkbox"/>	Stripped Matrix (S6)	<input type="checkbox"/>	Red Parent Material (TF2)
<input type="checkbox"/>	Black Histic (A3)	<input type="checkbox"/>	Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Depleted Below Dark Surface (A11)	<input type="checkbox"/>	Depleted Matrix (F3)		
<input type="checkbox"/>	Thick Dark Surface (A12)	<input type="checkbox"/>	Redox Dark Surface (F6)		
<input type="checkbox"/>	Sandy Mucky Mineral (S1)	<input type="checkbox"/>	Depleted Dark Surface (F7)		
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)	<input type="checkbox"/>	Redox Depressions (F8)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soils Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:	
Depth (Inches):	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (2 or more required)	
<input type="checkbox"/>	Surface Water (A1)	<input type="checkbox"/>	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
<input type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Salt Crust (B11)
<input type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Aquatic Invertebrates (B13)
<input type="checkbox"/>	Sediment Deposits (B2)	<input type="checkbox"/>	Hydrogen Sulfide Odor (C1)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Presence of Reduced Iron (C4)
<input type="checkbox"/>	Iron Deposits (B5)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/>	Surface Soil Cracks (B6)	<input type="checkbox"/>	Stunted or Stresses Plants (D1) (LRR A)
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>	Frost-Heave Hummocks (D7)

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): 0	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): 0	
Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): 0	

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

Remarks: **No indicators**

WETLAND DETERMINATION DATA FORM – Western Mountains, Valleys, and Coast Region

Project Site: **Lots 3300 and 3200 map** City/County: **Milwaukie** Sampling Date: **5/25/2018**
 Applicant/Owner: **Mathew Gillis, 4776 Carolina Avenue NE, Salem OR 97305** State: **OR** Sampling Point: **P7**
 Investigator(s): **John McConnaughey, PWS; Annakate Martin, NRS** Section, Township, Range: **Section 35 T1S R1E**
 Landform (hillslope, terrace, etc.): **Flat fill area** Local relief (concave, convex, none): Slope (%): **0**
 Subregion (LRR): **LRR A** Lat: **45.4347°** Long: **-122.64530°** Datum: **NAD 84**
 Soil Map Unit Name: **Newberg fine sandy loam** NWI classification:
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil Or Hydrology , significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , Or Hydrology , naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is sampled area in a wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Enter text Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

Remarks: Approximately in the middle of the yard area. Flat area believed to be fill. Yard has been mowed, aerial photos show vehicles scattered around and there are numerous old deep ruts.

VEGETATION – Use scientific names of plants

<u>Tree Stratum</u> (Plot Size: 30' circle)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:														
1. No trees				Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)														
2. No trees				Total Number of Dominant Species Across All Strata: 3 (B)														
3. No trees				Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)														
4. No trees				Prevalence Index worksheet:														
Total tree cover = 0 % = Total Cover				<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"><u>Total % Cover of:</u></th> <th style="width: 50%;"><u>Multiply by:</u></th> </tr> </thead> <tbody> <tr> <td>OBL species 0 %</td> <td>x1 = 0 %</td> </tr> <tr> <td>FACW species 0 %</td> <td>x2 = 0 %</td> </tr> <tr> <td>FAC species 0 %</td> <td>x3 = 0 %</td> </tr> <tr> <td>FACU species 0 %</td> <td>x4 = 0 %</td> </tr> <tr> <td>UPL species 0 %</td> <td>x5 = 0 %</td> </tr> <tr> <td>Column Totals: 0 % (A)</td> <td>0 % (B)</td> </tr> </tbody> </table>	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species 0 %	x1 = 0 %	FACW species 0 %	x2 = 0 %	FAC species 0 %	x3 = 0 %	FACU species 0 %	x4 = 0 %	UPL species 0 %	x5 = 0 %	Column Totals: 0 % (A)	0 % (B)
<u>Total % Cover of:</u>	<u>Multiply by:</u>																	
OBL species 0 %	x1 = 0 %																	
FACW species 0 %	x2 = 0 %																	
FAC species 0 %	x3 = 0 %																	
FACU species 0 %	x4 = 0 %																	
UPL species 0 %	x5 = 0 %																	
Column Totals: 0 % (A)	0 % (B)																	
<u>Sapling/Shrub Stratum</u> (Plot Size: 30' circle)				Prevalence Index = B/A = 0														
1. No shrubs				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> 5 - Wetland Non-Vascular Plants ¹ <input type="checkbox"/> 6 - Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. No shrubs																		
3. No shrubs																		
4. No shrubs																		
5. No shrubs																		
6. No shrubs																		
Total Shrub Cover 0% = Total Cover																		
<u>Herb Stratum</u> (Plot Size:) 5' circle																		
1. Plantago lanceolata	30	YES	FACU	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> Enter text No <input type="checkbox"/>														
2. Lotus corniculatus	12	YES	FAC															
3. Very short grass (assume FAC)	18	YES	FAC															
4.																		
5.																		
6.																		
Total herb cover 60 % = Total Cover																		
<u>Woody Vine Stratum</u> (Plot Size: enter text)																		
	%		FACU															
	%		FACU															
	%		= Total Cover															
% Bare Ground in Herb Stratum 0%																		
40 %																		

Remarks: Plants are stunted, probably due to poor quality compacted soils. Plants have very little root development, small shallow roots to about 2 inches depth maximum. Much more bare ground in herb stratum than would normally be expected for an open field. Grass is a very short fine grass, not flowering when we saw it. On a later visit in June, the grass and Bird's Foot Trefoil were dried up to the point of being unrecognizable, and there was a lot of Canada thistle we didn't see earlier..

SOIL

Project Site: 3300 & 3200

Sampling Point:

P7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type ¹	Loc ²		
0-1	7.5YR2.5/3	100					Silt sand loam	
1-2	7.5YR3/2	100	7.5YR5/6	<1%	C	M	Silt clay loam	
2-6	7.5YR4/3	60					Mxed matrix	
	7.5YR3/2	40						
6-16	10YR4/3	100					Silty clay loam	

¹Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)				Indicators for Problematic Hydric Soils³:			
<input type="checkbox"/>	Histosol (A1)	<input type="checkbox"/>	Sandy Redox (S5)	<input type="checkbox"/>	2 cm Muck (A10)	<input type="checkbox"/>	Red Parent Material (TF2)
<input type="checkbox"/>	Histic Epipedon (A2)	<input type="checkbox"/>	Stripped Matrix (S6)	<input type="checkbox"/>	Very Shallow Dark Surface (TF12)	<input type="checkbox"/>	Other (Explain in Remarks)
<input type="checkbox"/>	Black Histic (A3)	<input type="checkbox"/>	Loamy Mucky Mineral (F1) (except MLRA 1)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	
<input type="checkbox"/>	Hydrogen Sulfide (A4)	<input type="checkbox"/>	Loamy Gleyed Matrix (F2)	<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	
<input type="checkbox"/>	Depleted Below Dark Surface (A11)	<input type="checkbox"/>	Depleted Matrix (F3)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	
<input type="checkbox"/>	Thick Dark Surface (A12)	<input type="checkbox"/>	Redox Dark Surface (F6)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Mucky Mineral (S1)	<input type="checkbox"/>	Depleted Dark Surface (F7)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>	
<input type="checkbox"/>	Sandy Gleyed Matrix (S4)	<input type="checkbox"/>	Redox Depressions (F8)	<input type="checkbox"/>		<input type="checkbox"/>	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):	Hydric Soils Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>
Type:					
Depth (Inches):					

Remarks: Plant roots only 2". Soil very hard compacted. Shovel refusal at 16" due to gravel.

HYDROLOGY

Wetland Hydrology Indicators:				Secondary Indicators (2 or more required)			
Primary Indicators (minimum of one required; check all that apply)				Secondary Indicators (2 or more required)			
<input type="checkbox"/>	Surface Water (A1)	<input type="checkbox"/>	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)	<input type="checkbox"/>	Drainage Patterns (B10)
<input type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Salt Crust (B11)	<input type="checkbox"/>	Dry-Season Water Table (C2)	<input type="checkbox"/>	Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Aquatic Invertebrates (B13)	<input type="checkbox"/>	Geomorphic Position (D2)	<input type="checkbox"/>	Shallow Aquitard (D3)
<input type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Hydrogen Sulfide Odor (C1)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/>	FAC-Neutral Test (D5)
<input type="checkbox"/>	Sediment Deposits (B2)	<input checked="" type="checkbox"/>	Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/>	Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/>	Raised Ant Mounds (D6) (LRR A)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Presence of Reduced Iron (C4)	<input type="checkbox"/>	Other (Explain in Remarks)	<input type="checkbox"/>	Frost-Heave Hummocks (D7)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Iron Deposits (B5)	<input type="checkbox"/>	Stunted or Stresses Plants (D1) (LRR A)	<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Surface Soil Cracks (B6)	<input type="checkbox"/>	Other (Explain in Remarks)	<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	
<input type="checkbox"/>	Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	

Field Observations:				Wetland Hydrology Present?			
Surface Water Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):	0	
Water Table Present?	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>	Depth (inches):	0	

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

Remarks: **Suspect the oxidized rhizospheres are an artifact of the poor soils and is not a natural phenomenon.**

APPENDIX C - Ground Level Color Photographs:



Photo 1. A view of the subject property looking from north to south onto the property, we believe we are looking at the amount of fill that is on the property. The road through the middle of the property is also visible. ETC Photo 5/25/2018



Photo 2. The road through the center of the property looking from the south to the north. ETC Photo 5/25/2018



Photo 3. A view from the NW corner of the property, the patchy vegetation is evident and the ROW is the stand of trees at the back of the picture. ETC Photo 5/25/2018.



Photo 4 Plots 1 and 2 located in the very east side, bottom of the ROW. ETC Photo 5/25/18.



Photo 5 P 3 and P4 which are located in Wetland "B", an old ditch in the Sparrow ROW. The bare ground through the channel is evident. ETC Photo 5/25/18.



Photo 6 P5 & P6 locate on the hillslope down to the slough. ETC Photo 5/25/18.



Photo 7. The OHWM about 100' south of the property along the slough. ETC Photo 5/25/18.



Photo 8 P7 located on the flat fill are of the subject site. ETC Photo 5/25/18.



Photo 9. The border between the Sparrow ROW and property line. The north side of the channel slope showed signs of having fill material. ETC Photo 5/25/18.



Photo 10. A site overview from the southwest property corner. There are ruts visible in this photo and again sparse vegetation. ETC Photo 5/25/18.

APPENDIX D - Sensitive Area Certification:

Fish Presence:

The Willamette River supports runs of salmonids, sturgeons and other fish. Wetlands "A" and "B" are not accessible to fish, and would not support fish due to the limited amount of surface water present.

Endangered Species:

No endangered species of plants or animals were observed or reported within the study boundary.

Critical Habitat Features:

The property was surveyed for the following critical habitat features. Not all of these features are considered rare or critical by the City of Milwaukie;

Talus slopes – none

Caves, cliffs, crevasses, rock outcrops – none

Large Oak trees, or Oak groves or Oak savanna – None

Snags – Snags were observed on the property west of OHWM and outside of the study area.

Large woody debris – Drift wood observed west of OHWM and outside of the study area.

Streams & Rivers – The Willamette River.

Springs, seeps - Wetland "A" is likely fed by a small hillside seep.

Deep water habitat – Willamette River

Vernal pool wetlands – None

Old growth forest – None.

Wetlands - Wetlands "A" and "B".

Fish spawning or rearing habitat – Willamette River.