TECHNICAL MEMORANDUM

Prepared for: Kevin Anderson – CEO
Wesley Homes
815 South 216th Street
Des Moines, WA 98198-6332

October 3, 2023

Prepared by: Grette AssociatesLLC
2709 Jahn Ave NW, Suite H-5
Gig Harbor, WA 98335

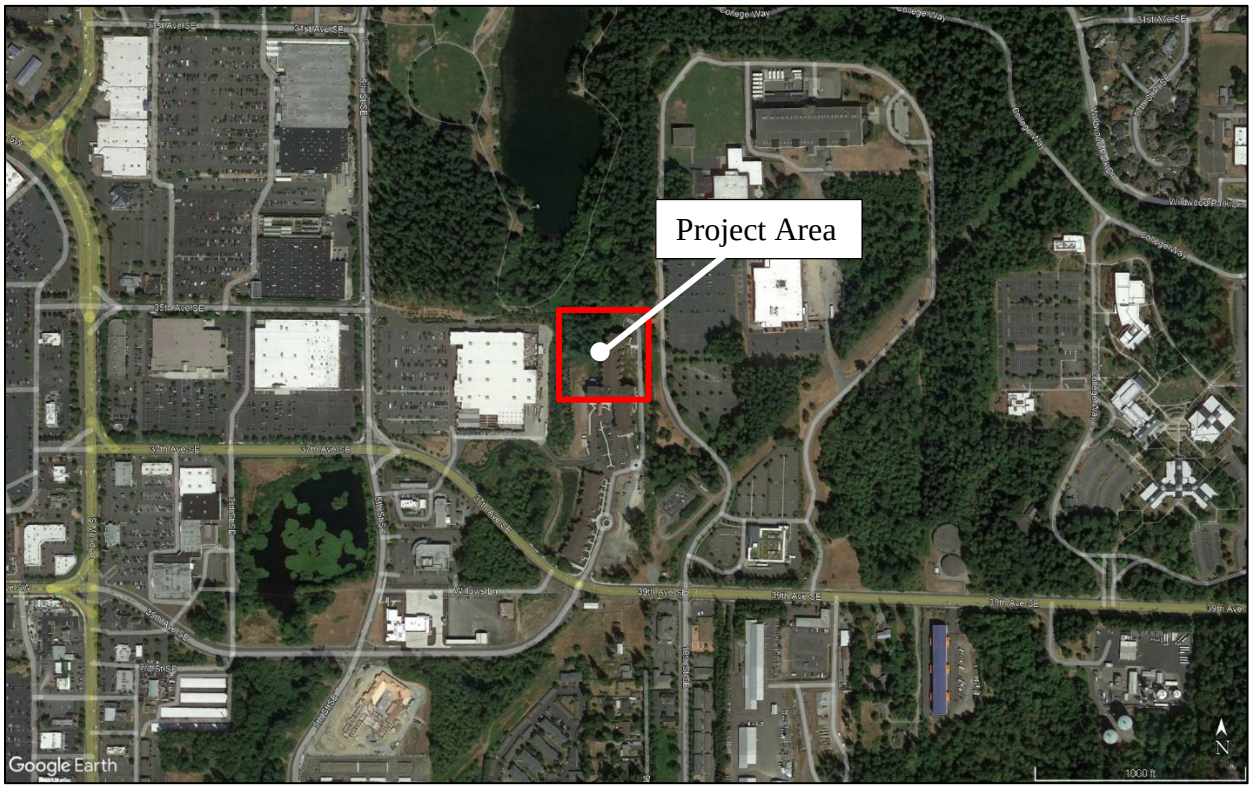
File No.: 621.008

Re: Wesley Homes – Bradley Park Phase II

1 INTRODUCTION

Grette Associates is under contract with Wesley Homes to complete a wetland verification at the Bradley Park Phase II project in Puyallup, WA (Figure 1). This project primarily includes an addition to an existing retirement home. This wetland verification is meant to determine if the boundaries of a previously approved wetland delineation associated with Wetland C have changed significantly since 2013.

Figure 1. Map



2 PREVIOUS WETLAND DELINEATION

In support of the Wesley Homes retirement home (Phase I and II) project, Soundview Consultants LLC (Soundview) identified and delineated four wetlands within the project site during their assessment performed in 2013 (Wetlands A, B, C, and D; Soundview Consultants LLC 2017). This technical memorandum is intended to provide a wetland verification in support of the Phase II project. As such, this summary is limited to Wetland C that was provided in the 2017 report.

Wetland C was mapped in 2017 at approximately 3,075 square feet in size. The wetland was classified as palustrine scrub-shrub wetland with a saturated hydrological regime (Cowardin et al. 1979), and as a slope wetland using the hydrogeomorphic method (Brinson 1993). Dominant vegetation included salmonberry (*Rubus spectabilis*) and soft rush (*Juncus effusus*). Hydrological support came primarily from uphill seeps.

Initially rated Category IV using the 2004 Washington Department of Ecology rating system (Hruby 2004), the wetland was rated again in 2017, during which the 2014 Washington Department of Ecology rating system was applied (Hruby 2014). Using the 2014 method, Wetland C was rated Category III and was subject to a standard buffer width of 110 feet. This buffer was approved to be reduced to 50 feet with buffer enhancement (Soundview Consultants LLC 2017). Namely, protective fencing was installed and the buffer was enhanced with the removal of invasive species and planting of native vegetation.

3 METHODS

The portion of Wetland C near the Phase II project area was verified according to wetland delineation procedures described in the U.S. Army Corps of Engineers' (USACE) *Federal Wetland Delineation Manual* (1987), and the USACE's *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (2010). Paired data plots and soil test pits were excavated to evaluate wetland and upland conditions. Guidance from the USACE's *Regional Supplement* was used to evaluate the data at each data point.

The boundary of the wetland was established based on changes in vegetation, field indicators of hydric soils, water levels, topographic changes, and best professional judgment. GPS points were taken for each soil plot and those boundary flags placed during Grette Associates' verification.

The previous wetland rating conducted by Soundview was also reviewed to determine if it was still valid. The most recent Washington Department of Ecology rating system was used (Hruby and Yahnke 2023) to complete this task.

4 RESULTS

4.1 Wetland Boundary Determination

Three soil pits were investigated to verify the location of the wetland boundary: two paired data plots as required by the USACE *Federal Wetland Delineation Manual* (1987; SP1 and SP2), and one data plot (SP3) between the two that was explored in order to determine the wetland boundary. See Attachment A for the locations of these data plots, and Attachment B for the wetland determination datasheets.

The wetland boundary was determined to be between SP2 (wetland) and SP3 (upland) (Attachment A). This indicates a change of approximately 10 feet southward of the boundary delineated in 2013.

4.2 Wetland Categorization

A preliminary wetland categorization was completed using the most recent version of the Washington Department of Ecology 2014 wetland rating system (Hruby and Yahnke 2023). The wetland was rated Category III, suggesting that the current wetland buffer still applies.

5 CONCLUSION

Based on Grette Associates' 2023 verification, a portion of Wetland C's boundary has appeared to shift slightly southward (Attachment A). According to the project site plans, two stormwater dispersion trenches were installed during the construction of Phase I. These two stormwater features are located upslope of Wetland C and the area identified to exhibits wetland conditions (Attachment A). Grette Associates identified the southern dispersion trench that is located immediately upslope of the small area that exhibited wetland conditions and outside of the wetland area delineated in 2013.

In Grette Associates' professional opinion, this area is likely exhibiting wetland conditions because it is very likely that the existing stormwater discharge structure constructed during Phase I is providing artificial hydrological support to this location. While this stormwater feature is intended to allow stormwater discharge to sheet flow across the landscape, these types of features still provide a relatively concentrated discharge to an area which Grette believes is likely the result to why the questionable area exhibits wetland conditions rather than from a change that occurring naturally. This determination is also supported by the fact that Grette Associates only observed these changes near and downslope area of the stormwater outfall southeast of the wetland rather than throughout the entire wetland area evaluated.

Grette Associates' rating review determined that conditions have not significantly changed from the 2017 rating conducted by Soundview Consultants (2017) and that Wetland C is classified as a Category III wetland per Chapter 21.06 of the Puyallup Municipal Code (PMC).

In closing, while Grette Associates did identify a slight change in the boundary associated with Wetland C, it is Grette Associates' professional opinion that this change is a result of the placement of the stormwater dispersion trench that was constructed during Phase I and is not a result of a change in conditions that occurred naturally. Therefore, it is Grette Associates recommendation that the current modified buffer should continue to apply in support of the Phase II project.

If you have any questions on this wetland verification, please contact me at (253) 573-9300, or by email at chadw@gretteassociates.com.

Regards,

Terra Hauser
Biologist

Chad Wallin, PWS
Biologist

References

Brinson, M.M. 1993. A Hydrogeomorphic Classification for Wetlands. Wetlands Research Program Technical Report WRP-DE-4, U.S. Army Corps of Engineers, Waterways Experiment Station. Washington D.C.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats for the United States. FWS/OBS-79/31, U.S. Department of Interior, Fish and Wildlife Service. Washington D.C.

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Hruby, T. 2014. Washington State Wetland Rating System for Western Washington: 2014 Update. (Publication #14-06-029). Olympia, WA: Washington Department of Ecology.

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Soundview Consultants LLC. 2017. Wetland Delineation, Habitat Assessment, and Final Mitigation Plan: Wesley Homes – Puyallup Senior Living. Prepared for: Wesley Homes.

U.S. Army Corps of Engineers (Corps). 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

U.S. Army Corps of Engineers (Corps). 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*, ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-3. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

ATTACHMENT A

WETLAND VERIFICATION MAP

WETLAND C

WB

SP2

SP3

SP1

10-FOOT EXPANSION

CLEARING LIMITS (TYP.)

MODIFIED WETLAND BUFFER

EX CB

INLET

DP-7

Existing stormwater dispersion trench

Existing stormwater dispersion trench

LEGEND

- APPROX. SAMPLE PLOT LOCATIONS
- APPROX. WETLAND BOUNDARY FLAG
- WB — APPROX. PREVIOUSLY DELINEATED WETLAND BOUNDARY
- APPROX. EXPANDED WETLAND BOUNDARY

SCALE IN FEET

20 10 0 20

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS
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PROJECT #: 621.008
DESIGNED BY: TH — DATE: 09/28/2023
CHECKED BY: CW — DATE: 09/28/2023

CLIENT: WESLEY HOMES

WESLEY HOMES - WETLAND VERIFICATION

SITE ADDRESS: PUYALLUP, WASHINGTON

DRAWING SCALE: SEE SCALE

WETLAND VERIFICATION BOUNDARIES

SHEET 1 OF 1

ATTACHMENT B

WETLAND DETERMINATION DATASHEETS

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

Project/Site: Wesley Homes Phase 2 City/County: Puyallup/Pierce Sampling Date: 9/21/23

Applicant/Owner: Wesley Homes State: WA Sampling Point: SP1

Investigator(s): Terra Hauser Section, Township, Range:

Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): Slope (%): 2

Subregion (LRR): A Lat: See map Long: See map Datum:

Soil Map Unit Name: 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 ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
Drier than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Pacific willow	85	Y	FACW
2. red alder	50	Y	FAC
3.			
4.			
	135	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. HBB	40	Y	FAC
2. black cottonwood	15	Y	FAC
3.			
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Epilobium ciliatum	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: 5 ft)			
1. Deadly nightshade	20	Y	FAC
2.			
	20	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ 5 - Wetland Non-Vascular Plants[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/1	98	10YR 4/4	2	C	M	Silty clay	
0-6	10YR 3/2	SD					Silty clay	Mixed matrix
6-11+	10YR 4/1	95	10YR 3/4	5	C	M	Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 11

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ No ✓

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

Remarks:

Soils very dry

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

Project/Site: Wesley Homes Phase 2 City/County: Puyallup/Pierce Sampling Date: 9/21/23

Applicant/Owner: Wesley Homes State: WA Sampling Point: SP2

Investigator(s): Terra Hauser Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): _____ Slope (%): 1

Subregion (LRR): A Lat: _____ Long: _____ Datum: _____

Soil Map Unit Name: _____ 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 ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Drier than normal

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. Red alder	40	Y	FAC
2. Douglas-fir	15	Y	FACU
3. Bigleaf maple	5	N	FACU
4.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15 ft)			
1. red-osier dogwood	40	N	FACW
2. HBB	100	Y	FAC
3. Salmonberry	80	Y	FAC
4.			
5.			
	220	= Total Cover	

Herb Stratum (Plot size: 5 ft)			
1. Sword fern	20	Y	FACU
2. lady fern	5	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 5 ft)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 75

Dominance Test worksheet:

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: 67% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = 0
FACW species 40	x 2 = 80
FAC species 225	x 3 = 675
FACU species 40	x 4 = 160
UPL species ___	x 5 = ___
Column Totals: 305 (A)	995 (B)

Prevalence Index = B/A = 3

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

✓ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

0-7
7-14 14-18+

SOIL

Sampling Point: SP2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 2/1	100					Silty clay	
7-14	10YR 2/1	35					sandy clay	Mixed matrix
7-14	10YR 4/1	61	10YR 3/4	4	C	M	sandy clay	
14-18+	10YR 2/1	10					sandy loam	Mixed matrix
14-18+	10YR 4/1	85	10YR 3/4	5	C	M	sandy loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ✓ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Hardpan

Depth (inches): 18

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

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

Project/Site: Wesley Homes Phase 2 City/County: Puyallup/Pierce Sampling Date: 9/21/23

Applicant/Owner: Wesley Homes State: WA Sampling Point: SP2

Investigator(s): Terra Hauser Section, Township, Range:

Landform (hillslope, terrace, etc.): Slight slope Local relief (concave, convex, none): Slope (%): 1

Subregion (LRR): A Lat: Long: Datum:

Soil Map Unit Name: 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 ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ____	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. red alder	~~20~~ 15	Y	FAC
2. Pac. willow	5	N	FACW
3. doughs-fir	10	Y	FACU
4.			
	35	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. HBTB	90	Y	FAC
2. red osier dogwood	45	Y	FACW
3.			
4.			
5.			
		= Total Cover	
Herb Stratum (Plot size: 5 ft)			
1. Unidentified grass	10	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		= Total Cover	
Woody Vine Stratum (Plot size: 5 ft)			
1. Deadly nightshade	40	Y	FAC
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species 50	x 2 = 100
FAC species 160	x 3 = 480
FACU species 10	x 4 = 40
UPL species ____	x 5 = ____
Column Totals: 220 (A)	620 (B)

Prevalence Index = B/A = 2.82

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ 5 - Wetland Non-Vascular Plants[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: SP3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR 2/2	99	10YR 3/4	1	C	M	loamy clay	
9-18+	10YR 3/2	80	10YR 3/4	5	C	M	clay	Mixed matrix
9-18+	10YR 4/1	15					clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✓ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) **(except MLRA 1)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) **(except MLRA 1, 2, 4A, and 4B)**
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) **(LRR A)**
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) **(MLRA 1, 2, 4A, and 4B)**
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) **(LRR A)**
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

Soils moist but not saturated