Loowit Consulting Group, LLC

June 23, 2021

Mr. Aaron Fuller
Fuller Designs
1101 Kresky Ave
Centralia, WA 98531

RE: Addendum to Jackson Villa 4 Project – Chehalis, WA.

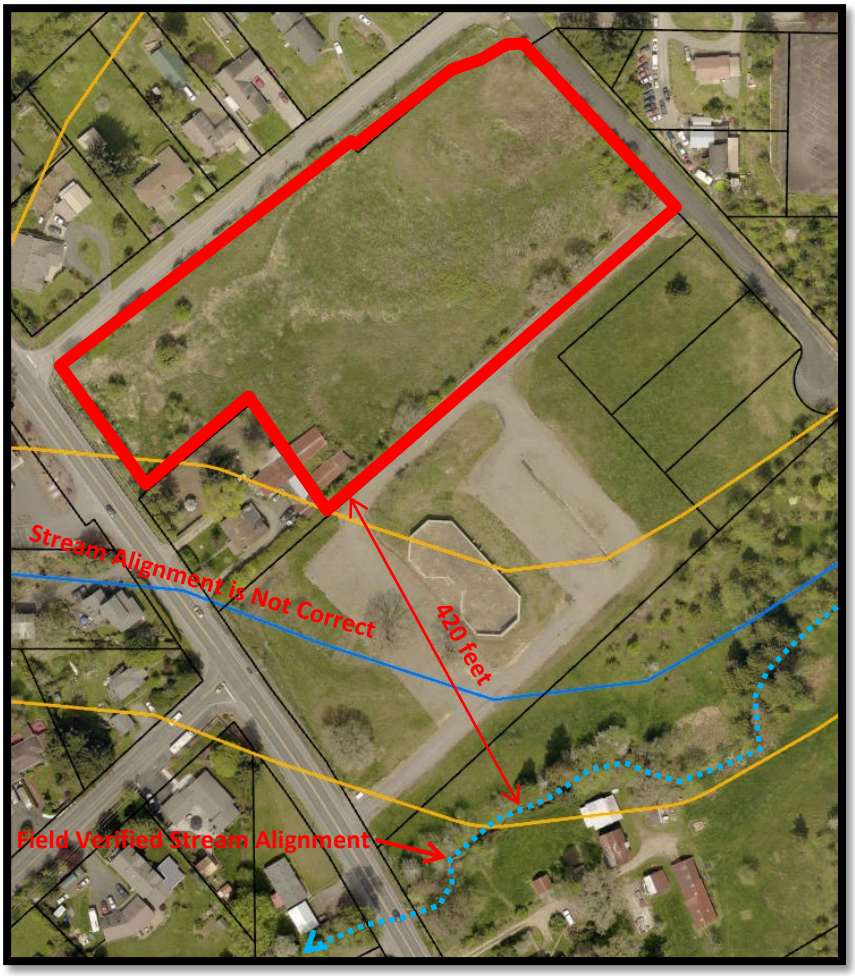
Dear Mr. Fuller,

Loowit Consulting Group, LLC (LCG) has completed an addendum to the critical areas report for Jackson Villa 4 – Lakewood Investors, LLC – in Chehalis, WA. The purpose of this addendum is (1) address comments from City of Chehalis letter dated June 16, 2021 and (2) document conditions of a seepage area on top of verified fill material in the northern portion of the subject site.

COMMENTS FROM CITY of CHEHALIS and RESPONSES

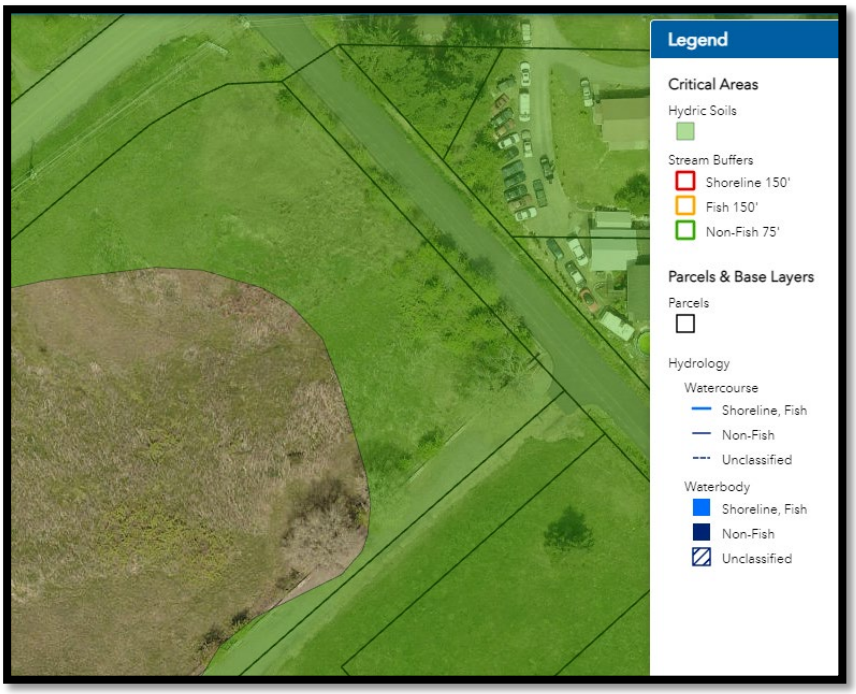
The City of Chehalis provided comments on the project via a letter dated June 16, 2021. After reviewing the critical areas report for the project, the City of Chehalis had three comments concerning wetlands and streams. Summarized below are the comments from the City of Chehalis followed by responses:

1. *"…a 150-foot buffer for a fish bearing stream crosses the southwest corner of the site next to Jackson Hwy."* **This comment is in response to review the Lewis County GIS Web Maps including stream courses and buffers as depicted below:**

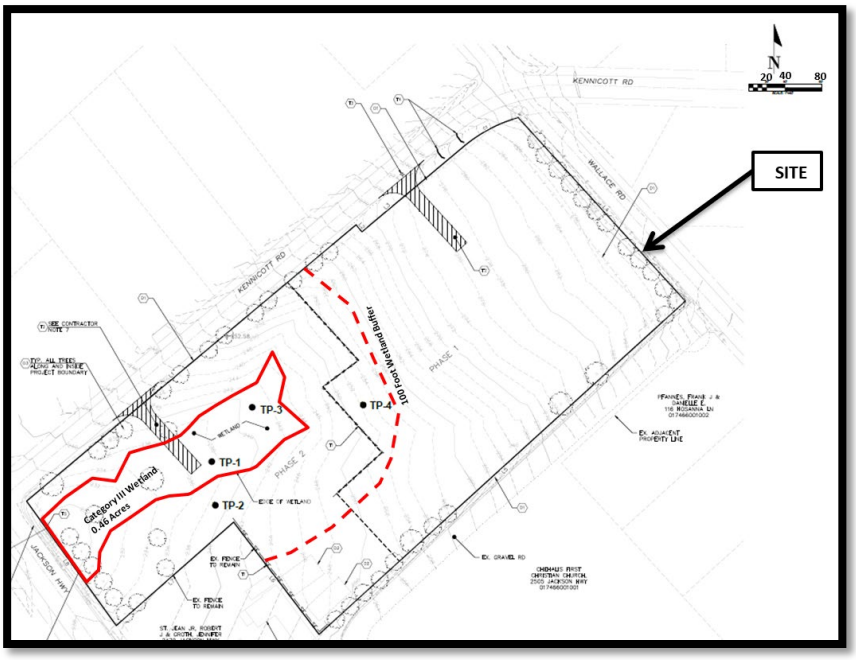


The Lewis County GIS Web Map stream mapping in the area of the subject site is wrong as depicted in the above edited screen capture. The Type F stream located south of the subject site is approximately 420 feet from the southern boundary of the subject site and buffers associated with this stream do not encroach into the subject site.

2. *"… there was no indication of test pits on the north end of the site or other type of analysis to determine if the hydric soils exist as shown on the Lewis County GIS Web Maps or if they impact this project in anyway."* **Conditions in the northern portion are discussed in more depth in the Jurisdictional Determination section of this report. The hydric soils map (below) for the area in and around the subject site is grossly inaccurate and not representative of real world soil conditions in the area.**



3. *"…it is difficult to read the wetland delineation map to determine where Wetland A is located."* **See below.**



VERIFICATION of WETLAND BOUNDARIES

On May 5, 2021, Mr. Jim Carsner (Senior Project Manager at US Army Corps of Engineers) visited the subject site with the project development team with the task of reviewing previously delineated wetland boundaries. Several wetland delineation flags were adjusted to more accurately reflect site conditions. Adjustment of the wetland flags resulted in a slight increase in wetland area going from 0.46 acres to 0.47 acres.

NORTHERN SEEPAGE AREA DISCUSSION

A seepage area is located in the northern portion of the site originating from seepage from beneath Hosanna Lane where it sheet flows onto documented fill material which extends across the majority of the central and northern portions of the subject site (Photograph 1).

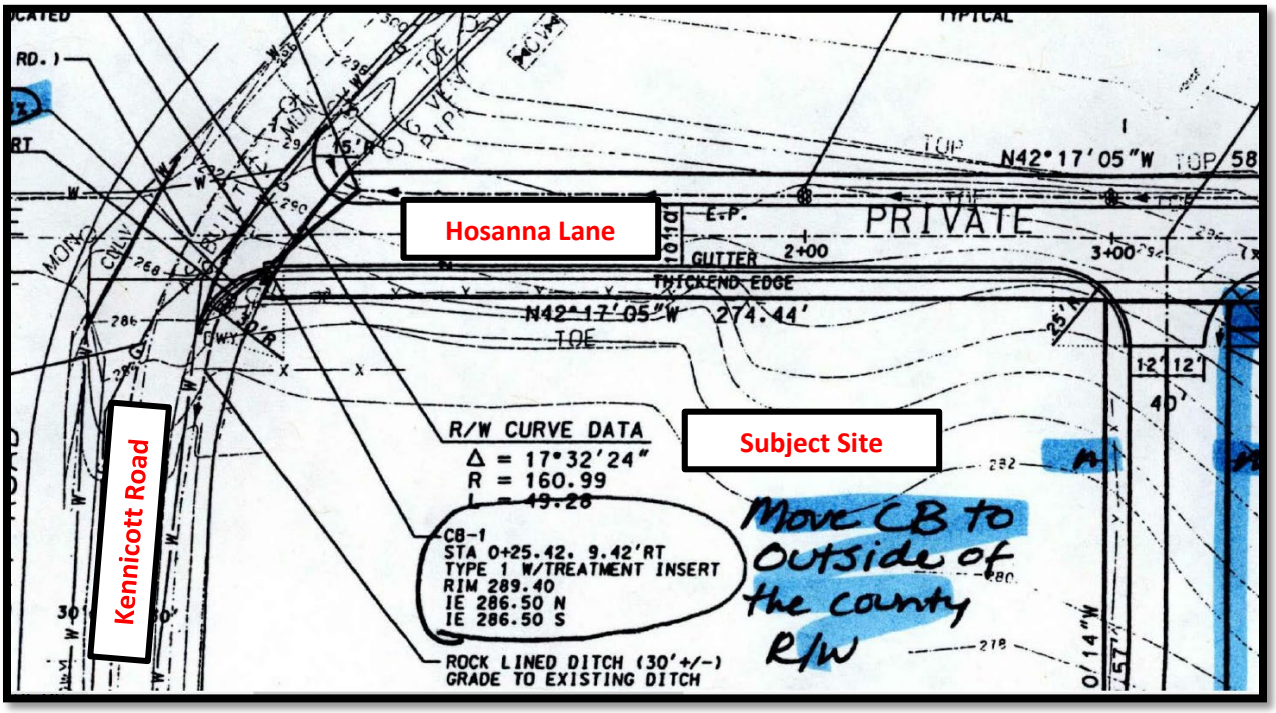
Photograph 1: Seepage area on top of document fill material.

The fill material has been well documented by the geotechnical engineers and civil engineers involved with developing the site into residential housing. The fill material is quite diverse including clays, silts, angular gravel, round gravel, boulders, concrete, asphalt, bricks, organic material, cans, bottles, and miscellaneous other debris (Photograph 2).

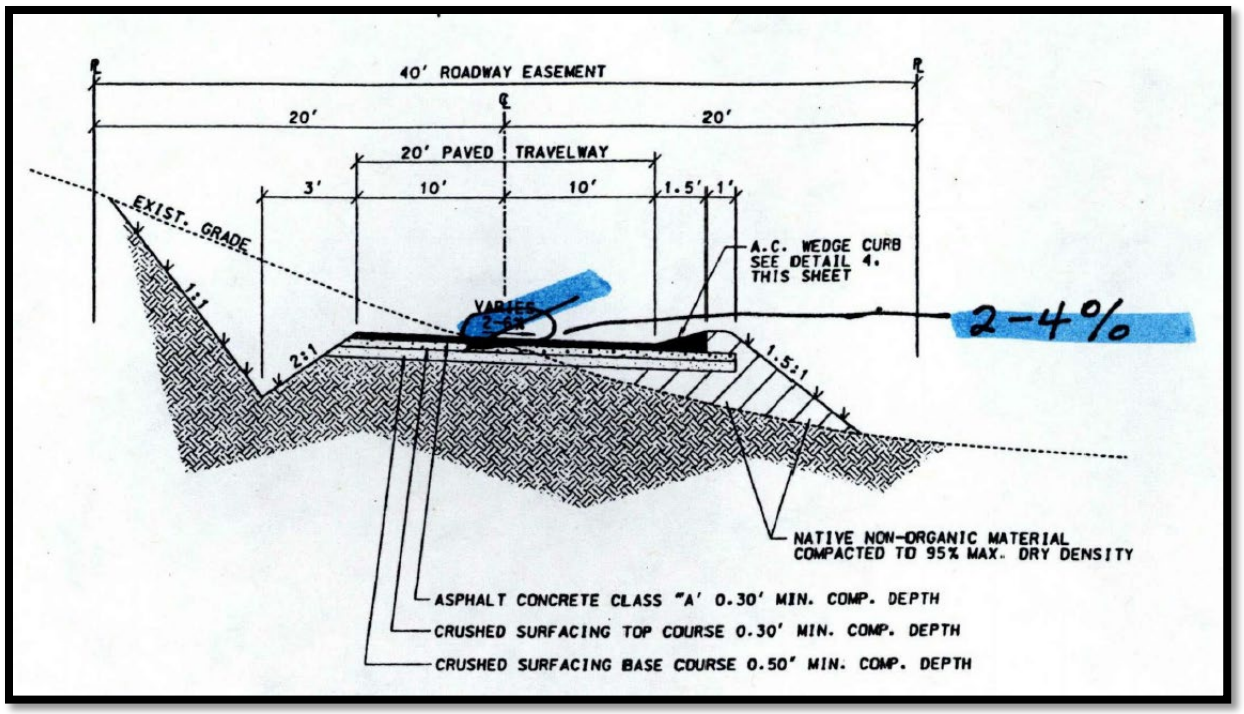
Photograph 2: Soil core from 15 to 18 inches below ground surface. Unconsolidated clays and silts with visible organic material, charcoal, angular rock, brick, etc. White material in center of the photograph is a piece ceramic coated pipe or similar material. Auger hit refusal at 20 inches, likely concrete based on chunks of concrete on the surface.

Locals have confirmed that the site was used by local municipalities to deposit waste material from road/street maintenance and construction. A review of historic aerial photographs of the site confirm that fill has been placed on the site from prior to 1990 up through 2009/2010.

During 2004/2005, Hosanna Lane was designed, approved and constructed within a 40-foot right of way to provide access to three residential lots approved under Short Plat SP-03-0029. Hosanna Lane was constructed along the northern edge of the subject site including storm water runoff collection ditches and a buried utility corridor along the southern edge of the street (see below).



When Hosanna Lane was constructed, a minimum of 10 inches of crushed gravel was used as base material to which four inches of asphalt was placed to provide an all-weather driving surface. A V-shaped ditch was also constructed on the north side of Hosanna Lane to collect and convey runoff away from the road surface (see below). Unfortunately there is a prominent depression (Photograph 3) in the V-shaped ditch that allows water to pond, seep through the road sub-base gravel and leak onto the subject site creating an artificial seepage area on top of existing fill material. Further evidence of saturated conditions under Hosanna Lane is very prominent settlement cracks directly above the area where seepage water is enter the subject site (Photograph 4).



Photograph 3: Looking east along Hosanna Lane with subject site to the right. The V-shaped ditch to the left has a prominent depression opposite the garbage can where water ponds and seeps under the road from left to right onto the subject site.

Photograph 4: Settling cracks on Hosanna Lane from saturated conditions under the asphalt. The subject site is to the left and ponded V-shaped ditch to the left.


Kennicott Road
Ponded Ditch Depression
Depression in road and saturation cracks in the asphalt
Seepage Area
TP-Seepage1
Hosanna Lane

The seepage area is approximately 40 feet wide by 95 feet long (1300 sq ft) and dominated by reed canary grass, teasel, and softrush. Soils are non-homogenous fill material to a depth of 1 to over 10 feet below ground surface. Hydrology is 100% seepage from the upslope road fill beneath Hosanna Lane. Several hand auger holes along transects through the area confirmed the presence of imported fill and a single data point within the seepage area is attached.

The seepage area is obviously the result of seepage water entering the subject site from seepage originating from upslope ditches along Hosanna Lane which in turn flows beneath the road surface and discharges upslope of the subject site. If this drainage issue was corrected, the seepage area within the northern portion of the subject site would disappear.

Local and State adopted definitions of wetlands clearly state that situations where the construction of a road after July 1, 1990 creates wetland conditions are not considered jurisdiction wetlands (see below). Hosanna Lane was constructed in 2005 and has clearly contributed to seepage water entering the subject suite.

City of Chehalis Municipal Code 17.21.030

"Wetland" means areas defined pursuant to RCW 36.70A.030 that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, retention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. However, wetlands include those artificial wetlands intentionally created to mitigate wetland impacts.

Revised Code of Washington 36.70A.030

(28) "Wetland" or "wetlands" means areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands do not include those artificial wetlands intentionally created from nonwetland sites, including, but not limited to, irrigation and drainage ditches, grass-lined swales, canals, detention facilities, wastewater treatment facilities, farm ponds, and landscape amenities, or those wetlands created after July 1, 1990, that were unintentionally created as a result of the construction of a road, street, or highway. Wetlands may include those artificial wetlands intentionally created from nonwetland areas created to mitigate conversion of wetlands.

It is the opinion of LCG that the seepage area in the northern portion of the subject is not a jurisdictional wetland and should not be regulated as such by the City of Chehalis or Washington State Department of Ecology.

If you have questions you can contact us at 360.431.5118 or thaderly42@gmail.com.

Sincerely,

Timothy J. Haderly
Principal Scientist/Owner

Limitations

The findings and conclusions contained in this document were based on information and data available at the time the document was prepared and evaluated using standard Best Professional Judgment. LCG assumes no responsibility for the accuracy of information and data generated by others. Local, State, and Federal regulatory agencies may or may not agree with the findings and conclusions contained in this document.

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

Project/Site: Jackson Villa 4 - XXXX Jackson Hwy City/County: Chehalis/Lewis Sampling Date: 6/15/2021
Applicant/Owner: Lakewood Investors, LLC State: WA Sampling Point: TP-Seepage1
Investigator(s): T. Haderly Section, Township, Range: Section 3, Township 13 North, Range 2 West
Landform (hillslope, terrace, etc.): Terrace Local relief: Sloped Slope (%): 0-3%
Subregion (LRR): A Lat: 46.64156 Long: -122.92576 Datum: WGS84
Soil Map Unit Name: #89 Galvin silt loam NWI classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes☒ No☐ (If no, explain Remarks.)
Are Vegetation☐, Soil☒, or Hydrology☒ significantly disturbed? Area "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 Soils Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	

Remarks: Area is historic non-homogenous fill material up to 10 feet deep. Hydrology from seepage from beneath Hosanna Lane constructed in 2004/05. Vegetation is a mix of invasive and non-native weedy species.

VEGETATION (*Use scientific names*)

Tree Stratum (Plot size: 30 ft radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.	%		
2.	%		
3.	%		
4.	%		
Total Cover:	%		
Sapling/Shrub Stratum (Plot size: 5 ft. radius)			
1.	%		
2.	%		
3.	%		
4.	%		
5.	%		
Total Cover:	%		
Herb Stratum (Plot size: 5 ft radius)			
1. *Phalaris arundinacea*	90%	yes	FACW
2. *Dipsacus fullonum*	80%	yes	FAC
3. *Juncus effusus*	40%	no	FACW
4.	%		
5.	%		
6.	%		
7.	%		
8.	%		
Total Cover:	210%		
Woody Vine Stratum (Plot size: 30 ft radius)			
1.	%		
2.	%		
Total Cover:	%		

% Bare Ground in Herb Stratum 0%

Dominance Test Worksheet

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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=	0
FACW species	0	x 2=	0
FAC species	0	x 3=	0
FACU species	0	x 4=	0
UPL species	0	x 5=	0
Column Totals:	0 (A)		0 (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)
- ☐ 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: Vegetation dominated by invasive species likely originating from imported fill material.

SOIL

Sampling Point: TP-Seepage1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	various	100%		%			Fill	See Remarks Below
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				
		%		%				

[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.)

- ☐ Histosal (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Minerals (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

- ☐ 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

Restrictive Layer (if present):

Type: Concrete

Depth (inches):20

Hydric Soil Present? **Yes**☐ **No**☒

Remarks: Non-homogenous fill consisting of clay, silt, concrete, ashalt, and gravel. Soils colors ranged from 10YR3/2 to 10YR6/6 and inconsistent throughout the soil profile.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (min. 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)
- ☐ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, & 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 (D4)

Field Observations:

Surface Water Present?	Yes ☒	No ☐	Depth (Inches): 1-2
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: Visible seepage water entering the site from the upslope road prism of Hosanna Lane. Hydrology confined to the surace of the compacted fill. Fill material below the surface was not suturated and no water observed to a depth of 24 inches using a hand auger. Backhoe test pits in the area revelled no groundwater to a depth of 10 feet bgs. Average precipitation for Jan-June is 27.74 in. Recorded precipitation for Jan-June 2021 was 27.48 for only a 0.26 in departure from normal. Hydrology conditions considered normal at the time the seepage area was investigated.

Table 1. Comparison of Observed and Average Precipitation at the Chehalis Airport Station Prior to Field Work - June 2021.

	Actual Precipitation (inches)[1]	Monthly Average (inches)[2]	30% Chance will have		Percent of Normal	Within Normal Range?
			Less than Average[2]	More than Average[2]		
January	10.85	6.44	4.05	7.78	168%	Yes – Above[3]
February	7.90	5.53	3.58	6.65	142%	Yes – Above[3]
March	2.21	4.87	3.80	5.62	45%	No – Below
April	1.29	3.46	2.45	4.09	37%	No - Below
May	1.62	2.51	1.67	3.01	64%	No - Below
June	3.61	1.93	1.33	2.30	187%	Yes – Above[3]
Total	27.48	24.74	16.88	29.45	111%	Yes

[1] Chehalis Airport Weather Station (AgWeatherNet)
[2] Lewis County (Centralia) WETS Data (NRCS 2021)
[3] Above normal precipitation and well above 30% chance upper range