



# Technical Memorandum

September 7, 2022

<b>To</b>	Slack and Winzler Properties LLC	<b>Contact No.</b>	(707) 267-2224
<b>Copy to</b>	Misha Schwarz, CPSS, PWS	<b>Email</b>	Miles.Hartnett@ghd.com
<b>From</b>	Miles Hartnett, GHD	<b>Project No.</b>	12584237
<b>Project Name</b>	Slack and Winzler Properties-Elk River Road		
<b>Subject</b>	Wetland Assessment Memorandum for APN 304-071-108		

## Introduction

The purpose of this memorandum is to provide Slack and Winzler Properties a wetland delineation and assessment for a proposed project consisting of a Tentative Map and proposed Subdivision (PLN-10797-FMS). The project proposes subdivision of a 44.2-acre undeveloped parcel (APN 304-071-018) into five separate lots.

Access to the proposed parcels would be provided by construction of an approximately 2,800-foot-long roadway from Elk River Road mainly following the alignment of an existing logging road and leading upslope, with a maximum grade of 15 percent, to access each of the proposed building envelopes before terminating in a turnaround just to the east on the adjoining parcel.

The proposed project is located at APN 304-071-018 on the east side of Elk River Road, south of Showers Road, in the Eureka, CA area. The site is undeveloped and predominantly under tree canopy coverage, has been logged several times in recent decades including as recently as five years ago. The site slopes upwards towards the east generally at approximately 20%, with steeper portions towards the center of the property. The property fronts Elk River Road on its western boundary. A map of the area investigated can be found in Appendix A.

## Survey Area and Date

GHD scientists Misha Schwarz and Miles Hartnett conducted a wetland delineation for the proposed project on August 18, 2022 targeting an area of concern of the California Department of Fish and Wildlife. The Survey Area included an area identified as a potential three-parameter wetland located on an overgrown log deck cut into a hillslope and graveled logging road on APN 304-071-018. The Survey Area consisted of the delineated wetland feature and approximately 50 feet of surrounding area around the feature.

## Methods

### Wetland Delineation Manual

The 1987 United States Army Corps of Engineers (USACE) Wetland Delineation Manual (USACE 1987) provides guidelines and methods to determine whether an area is a wetland subject to federal regulation under Section 404 of the Clean Water Act. The manual uses a three-parameter approach specifying that wetland hydrology, soil, and vegetation indicators must be present to identify a wetland (USACE 1987, p. 10).

The wetland delineation described in this memorandum uses USACE criteria from the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region (Version 2.0)* (USACE 2010). The current standard field forms provided by the USACE (2010) were used to collect vegetation, soils, and hydrology data (**Appendix B**).

## Wetland Delineation Methodology

In potential three-parameter wetland areas, vegetation, soil, and hydrology data were collected in a transect across the upland/wetland boundary with two plots (upland/wetland). The naming convention used on datasheets to designate upland or wetland plots associated with a transect is -U or -W, respectively.

Three-parameter wetland/upland boundaries and plots were mapped in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Collector software. The wetland/upland boundary was recorded with the GPS unit as needed to map the wetland's spatial extent. The points were then connected in the office using ArcMap software for figure creation.

Each three-parameter wetland area was designated with a number (e.g., W1). The wetland points were also labeled with their respective wetland number. In addition to the wetland sampling points, upland sampling points were described. These were labeled beginning with a "U" and numbered in sequence (e.g., U1, U2). The upland sampling points were completed to confirm and document the absence of any wetland indicators (soils, hydrology, and vegetation). **Appendix B** contains all datasheets recorded during the delineation.

## Botanical Methodology

Vegetation data collection consisted of listing the dominant species in the herbaceous, shrub, and tree layer within a standard-sized plot determined by the strata layer. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012), which was cross-checked to federal standard nomenclature to identify the indicator status. The species' wetland indicator status for the Western Mountains, Valleys, and Coast Region was denoted in the respective column, using the standard reference: *State of California 2016 Wetland Plant List* (Lichvar et al. 2018). This list classifies species based on the probability that they are found in wetlands (USACE 1987) as follows:

- Obligate (OBL): almost always in wetlands (99% probability)
- Facultative Wetland (FACW): usually occurring in wetlands (67% to 99% probability)
- Facultative (FAC): commonly occurring in wetlands and uplands (34% to 66% probability of occurring in wetlands)
- Facultative Upland (FACU): usually occurring in uplands (1% to 33% probability of occurring in wetlands)
- Upland (UPL): upland obligate, rarely in wetlands (1% in wetlands)

Species that do not appear on the list are considered to be in the upland category. Standard procedures for documenting hydrophytic vegetation indicators were used per the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)*.

## Soils Methodology

Hydric soils were defined based on the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0)* (USACE 2010) procedures in combination with the Natural Resources Conservation Service's (NRCS) definitions presented in *Field Indicators of Hydric Soils in the United States* (USDA/NRCS 2018 version 8.2). Soil pits were dug to an approximate depth of 14 to 18 inches. Data on soil color, texture, and redoximorphic features were recorded. Any observed redoximorphic features (iron concentrations) were noted along with their percentage within the soil matrix, and care was taken to distinguish chromas of 1 and 2 are indicative of an iron-depleted soil within 12 inches of the soil surface (USACE 2010; USDA/NRCS 2018). The *Munsell Soil Color Book* (COLOR, M. 2000) was used to describe the soil colors for the entire depth of the test pit. Moist, natural soil aggregate (ped) surfaces, which had not been crushed, were used to determine the soil's color. Soils with low chroma were verified as being hydric or upland with *Field Indicators of Hydric Soils in the United States* (Version 8.2, 2018).

## Hydrology Methodology

GHD scientists performed the investigation on August 28, 2022, during the dry season for the region. A WETS table showing climate data for the Arcata Eureka Airport, CA was reviewed and showed climatic and hydrologic conditions prior to the date of the survey to be typical for the time year. Aerial photography and the National Wetland Inventory Mapper were referenced before conducting fieldwork. Wetland hydrology indicators, such as drainage patterns, material deposits, soil saturation, high water table, or surface water presence, were recorded in the field.

## Results

One (1) contiguous three-parameter wetland was mapped within the Study Area totaling 0.02 acres. Please see the USACE Data Forms in **Appendix B** for more details and see **Appendix A, Figure 1** for the associated map. Soil pits and vegetation plots were conducted along one (1) transect line throughout the Study Area totaling two (2) transect points.

Wetland 1 consisted of an opening on a highly compacted log deck and a graveled logging road (most of Wetlands 1 is surfaced with gravel). The vegetation was primarily characterized by common rush (*Juncus effusus*, FACW) and giant horsetail (*Equisetum telmateia*, FACW). Wetland 1 passed the dominance test for hydrophytic vegetation. Soil in Wetland 1 consisted mostly of silt loams with a 10YR 4/3 upper horizon matrix (0 to 3 inches) and a 2.5Y 5/2 lower horizon matrix (3 to 14 inches) with distinct 7.5YR 4/6 redoximorphic features throughout 20% of the lower horizon matrix. The hydric soil indicator observed was Depleted Matrix (F3). Primary indicators of wetland hydrology were not observed. Secondary indicators of wetland hydrology observed included geomorphic position (D2) and passing the vegetation FAC-neutral test (D5).

Wetland 1 is not hydrologically connected to or adjacent to other Waters of the United States or Waters of the State (navigable waters) and is therefore unlikely to be under USACE or Regional Water Quality Control Board jurisdiction.

Please see attached data forms for sample points W1T1-W and W1T1-U in **Appendix B**.

## Conclusion

One (1) contiguous three-parameter wetland (Wetland 1) was identified within the Study Area totaling 0.02 acres. The wetland is an isolated feature and is not hydrologically connected to or adjacent to other Waters of the United States or Waters of the State (navigable waters). The identified wetland (Wetland 1) is unlikely to be under USACE or Regional Water Quality Control Board jurisdiction. Considering Wetlands 1 is human created (by grading and compaction) wetlands, is very small and that it is likely not regulated by the USACE or the Regional Water Quality Control Board, no mitigation is recommended when this wetland is impacted.

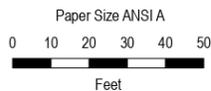
# Appendix A

## Figures



**Legend**

- Project Parcel (APN# 304-071-018)
- 3-Parameter Wetland (750 sqft)
- Transect Points



Slack & Winzler Properties  
APN# 304-071-018

Project No. 12584237  
Revision No. -  
Date August 2022

Map Projection: Lambert Conformal Conic  
Horizontal Datum: North American 1983  
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

**Wetland Delineation**

**FIGURE 1**

# Appendix B

## Wetland Determination Data Forms

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

Project/Site: Slack and Winkler City/County: Franklin, WA Sampling Date: 8/18/2022  
 Applicant/Owner: Slack and Winkler Properties State: CA Sampling Point: W17W  
 Investigator(s): Moh Schwartz PWS, Miles Hartnett Section, Township, Range: S15 T04N R01W H34  
 Landform (hillslope, terrace, etc.): bench cut / hillslope Local relief (concave, convex, none): concave Slope (%): 0-2  
 Subregion (LRR): A Lat: 40.727 Long: -124.173 Datum: NAD83  
 Soil Map Unit Name: 398: Salmon Creek-Tepora-Rotcreek complex 15-30% slopes 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 _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks: <u>Sample point on old logging road, bench cut in hill slope.</u>	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species _____ 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 = _____
= Total Cover				
<b>Sapling/Shrub Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% <u>= 100%</u> ___ 3 - Prevalence Index is ≤3.0' ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
= Total Cover				
<b>Herb Stratum (Plot size: <u>125</u>)</b>				
1. <u>Equisetum telmateia</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Stachys rigida</u>	<u>8</u>	<u>no</u>	<u>FACW</u>	
3. <u>Rubus ursinus</u>	<u>8</u>	<u>no</u>	<u>FACU</u>	
4. <u>Mentha pulgatum</u>	<u>10</u>	<u>no</u>	<u>OBL</u>	
5. <u>Juncus effusus</u>	<u>50</u>	<u>yes</u>	<u>FACW</u>	
6. <u>Holcus lanatus</u>	<u>20</u>	<u>no</u>	<u>FAC</u>	
7. <u>Dactylis glomerata</u>	<u>12</u>	<u>no</u>	<u>FACU</u>	
8. <u>Cotula coronopifolia</u>	<u>1</u>	<u>no</u>	<u>FAC</u>	
9. <u>Cirsium vulgare</u>	<u>3</u>	<u>no</u>	<u>FACU</u>	
10. <u>Brasica oleracea</u>	<u>8</u>	<u>no</u>	<u>FAC</u>	
11. <u>Lupinus albus</u>	<u>1</u>	<u>no</u>	<u>FACU</u>	
<u>50% = 75.5    20% = 30.2</u> = Total Cover				
<b>Woody Vine Stratum (Plot size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
<b>% Bare Ground in Herb Stratum <u>2-5</u></b>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Remarks: _____				

SOIL

9/18/22 Winder/slack - MS/MH

Sampling Point: W171-U

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 <sup>1</sup>	Loc <sup>2</sup>		
0-3	10YR4/3	106	-	-	-	-	Silt Loam	
3-14	2.5Y5/2	80	7.5YR 4/6	20	C	PL	Silt Loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils <sup>3</sup> :
<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)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<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)	

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (minimum of one required; check all that apply)		
<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 checked="" type="checkbox"/> Geomorphic Position (D2) <i>Low Area Rd</i>
<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 checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Stunted or Stressed 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:

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:  
 Highly compacted Road/Log Deck

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

Project/Site: Slack and Wenzler City/County: Eureka, Humboldt Sampling Date: 8/18/2022  
 Applicant/Owner: Slack and Wenzler Properties State: CA Sampling Point: W114  
 Investigator(s): Miha Schwartz PWS, Miles Hartnett Section, Township, Range: S15 T4N R10W H13M  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): slope Slope (%): 5-10  
 Subregion (LRR): A Lat: 40.727 Long: -124.173 Datum: NA 1984  
 Soil Map Unit Name: 390: Salmon Creek-Tepaan-Putocreek Complex 15-20% slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks:	

**VEGETATION – Use scientific names of plants.**

Tree Stratum (Plot size: <u>r=30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Picea sitchensis, Sitka Spruce</u>	40	yes	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>5</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60</u> (A/B)
2. <u>Alnus rubra, Alkali</u>	5	no	FAC	
3. <u>Sedum spaldingii, Redwood</u>	8	no	UPL	
4. <u>50%=26.5 20%=10.6</u>				
<u>53 = Total Cover</u>				
Sapling/Shrub Stratum (Plot size: <u>r=15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ 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 = _____
1. <u>Vaccinium ovatum</u>	35	yes	FACU	
2. <u>Securidaca palustris</u>	5	no	UPL	
3. _____				
4. _____				
5. <u>40%=20 20%=8</u>				
<u>40 = Total Cover</u>				
Herb Stratum (Plot size: <u>r=5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% = <u>60%</u> ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ 5 - Wetland Non-Vascular Plants <sup>1</sup> ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Equisetum telmateia</u>	20	yes	FACU	
2. <u>Burhans usurus</u>	30	yes	FACU	
3. <u>Holcus lanatus</u>	20	yes	FAC	
4. <u>Acrostis capillaris</u>	15	no	FAC	
5. <u>Trifolium douglasiana</u>	3	no	UPL	
6. <u>Ranunculus repens</u>	15	no	FAC	
7. <u>Anthoxanthum odoratum</u>	10	no	FACU	
8. <u>Juncus effusus</u>	2	no	FACU	
9. <u>Festuca arundinacea</u>	1	no	FAC	
10. <u>Lotus corniculatus</u>	3	no	FAC	
11. <u>Lycanthum vulgare</u>	1	no	FACU	
<u>120 = Total Cover</u>				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				
Remarks:				

SOIL

8/18/22 Windsor Slack MS/MH

Sampling Point: W171-V

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 <sup>1</sup>	Loc <sup>2</sup>		
0-4	10YR3/3	100	-	-	-	-	Silt Loam	
4-13	2.5Y4/3	80	7.5YR 4/6	20	C	P	Silt Loam	

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

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

<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)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<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)	

Restrictive Layer (if present):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_  
 Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:  
 Chromo @ 3 too high for a hydric soil

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (2 or more required)</u>
<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 Stressed 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:  
 Surface Water Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Water Table Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 Saturation Present? Yes \_\_\_\_\_ No  Depth (inches): \_\_\_\_\_  
 (includes capillary fringe)  
 Wetland Hydrology Present? Yes \_\_\_\_\_ No

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

Remarks:  
 Highly compacted Road/Log Dec 4