

Appendix B

**June 2021 Wetland Delineation
Documentation**

Technical Memorandum

June 29, 2021

To	Kasey Sirkin, USACE	Tel	(707) 443-0855
Copy to	Netra Krahtri, City of Arcata; Andrea Hilton, GHD	Email	I.k.sirkin@usace.army.mil
From	Kerry McNamee, GHD	Ref. No.	11159130
Subject	Old Arcata Road Improvement Project 2021 Wetland Delineation Update		

Greetings Kasey,

This Technical Memorandum is in regards to the proposed Old Arcata Road Improvement Project (Project), and presents the findings of a subsequent delineation conducted at a specific area in question within the Project Area boundary.

Purpose

The subsequent delineation was conducted following a site visit in which the area in question did not appear to be a wetland, located along the north side of Jacoby Creek Road approximately 175 feet from the intersection with Old Arcata Road (the area in question is outlined in yellow on the attached Figure 1). Therefore, GHD wetland scientists conducted a follow up delineation at the area in question on June 23, 2021. The area in question was found to not meet wetland parameters (vegetation, soils, hydrology), and therefore is not considered a three-parameter wetland and non-jurisdictional by the U.S. Army Corps of Engineers (USACE). Data from the subsequent delineation is summarized below.

Data Overview

Two GHD wetland scientists visited the area in question on June 23, 2021 and dug two pits to collect vegetation, soils and hydrology data. The two pits are labelled CP-1 and CP-2, ("Confirmation Point"), on the attached Figure 1. Conditions at both CP-1 and CP-2 do not meet all three parameters to be considered a USACE-jurisdictional wetland resource under the Clean Water Act. Datasheets for CP-1 and CP-2 are attached to this Technical Memo as Attachment 2.

Vegetation

- No obligate vegetation was observed at either CP-1 or CP-2.
- The majority of species observed are considered Facultative, meaning they occur in wetlands 34% to 66% of the time, making these species statistically equally likely to occur in wetlands or uplands.
- Most species are invasive and non-native to California.

Soils

- Soils at both sites contained very gravelly sandy loams, and which consisted of river-run fill material in the upper horizon.
- CP-1 contained potentially hydric soils due to the chroma of 3 and low value (< 2), and presence of redoximorphic conditions in the lower horizon (9.5-13 inches). However, the lower horizon started at a depth greater than 8 inches to the surface, and is therefore not meeting any hydric soils indicators per the USDA/NRCS 2018 Hydric Soils Indicator Guide.

- CP-2 contained soils with low chromas (< 2), and low value (< 2), however did not contain any redoximorphic features or other indicators (such as odors) of hydric soil conditions.

Hydrology

- No surface water was present at both CP-1 and CP-2, however this area is known to seasonally pool during the wet winter months as it is located between a culvert and storm drain.
- No primary indicators were observed at CP-1 and CP-2, however one secondary indicator (Geomorphic Position) was observed at both sites.

Conclusion

The original Wetland Delineation Report (January 2019) has been updated to remove the area in question, and will be resubmitted for an updated Preliminary Jurisdictional determination from the USACE. If warranted, please contact Kerry McNamee at (707) 267-2207 or at Kerry.McNamee@ghd.com to discuss this memo.

Regards

Kerry McNamee
Environmental Planner

Cced: Netra Khatri, P.E., City of Arcata
Andrea Hilton, GHD

Attachment 1: Figures

Attachment 2: Datasheets

Attachments

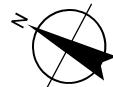
Attachment 1

Figure



Paper Size ANSI A
0 5.5 11 16.5 22
Feet

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



City of Arcata
Old Arcata Road Improvement Project

Project No. 11159130
Revision No. -
Date 6/30/2021

2021 Wetland Area of Investigation

FIGURE 1

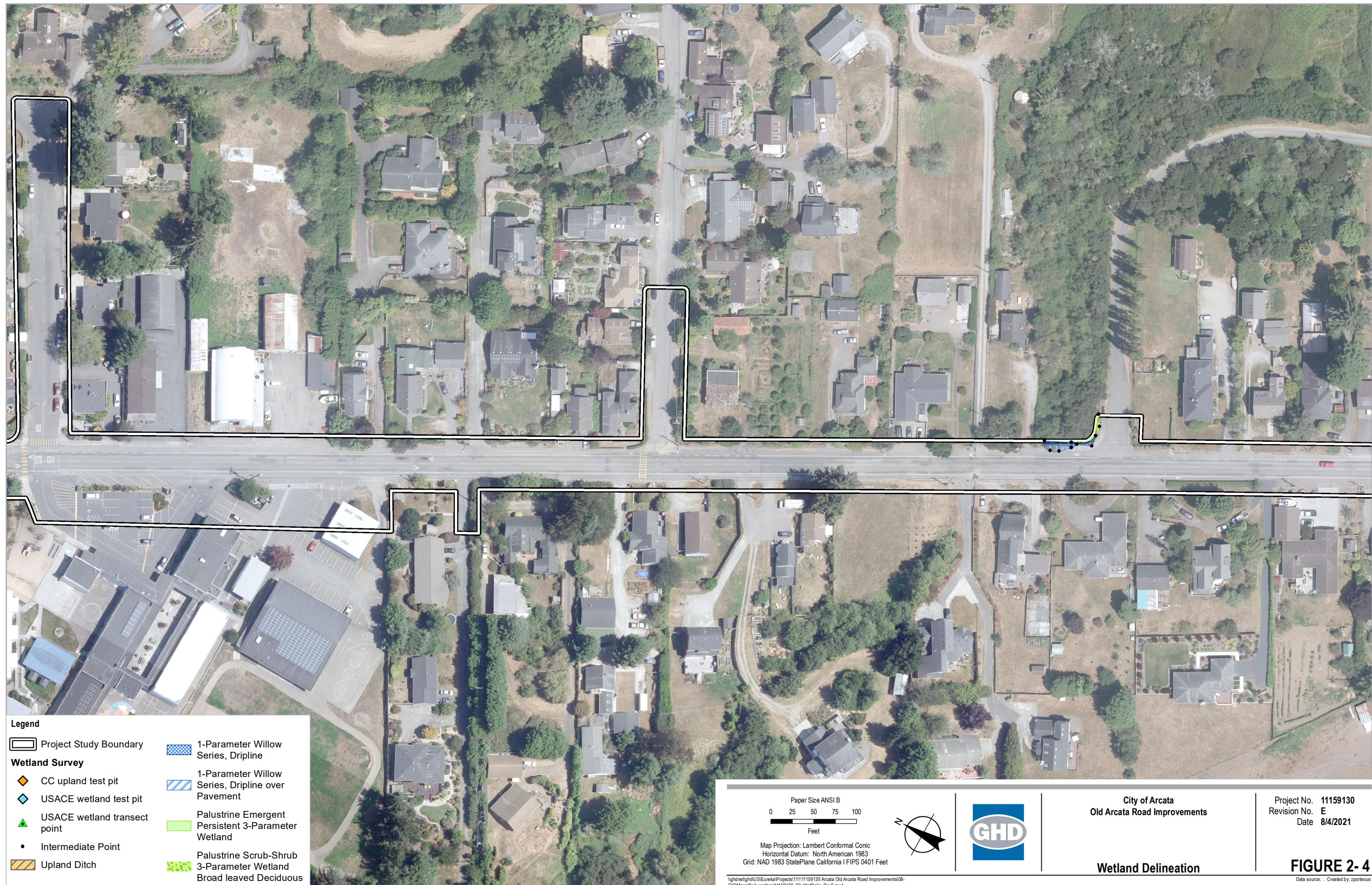


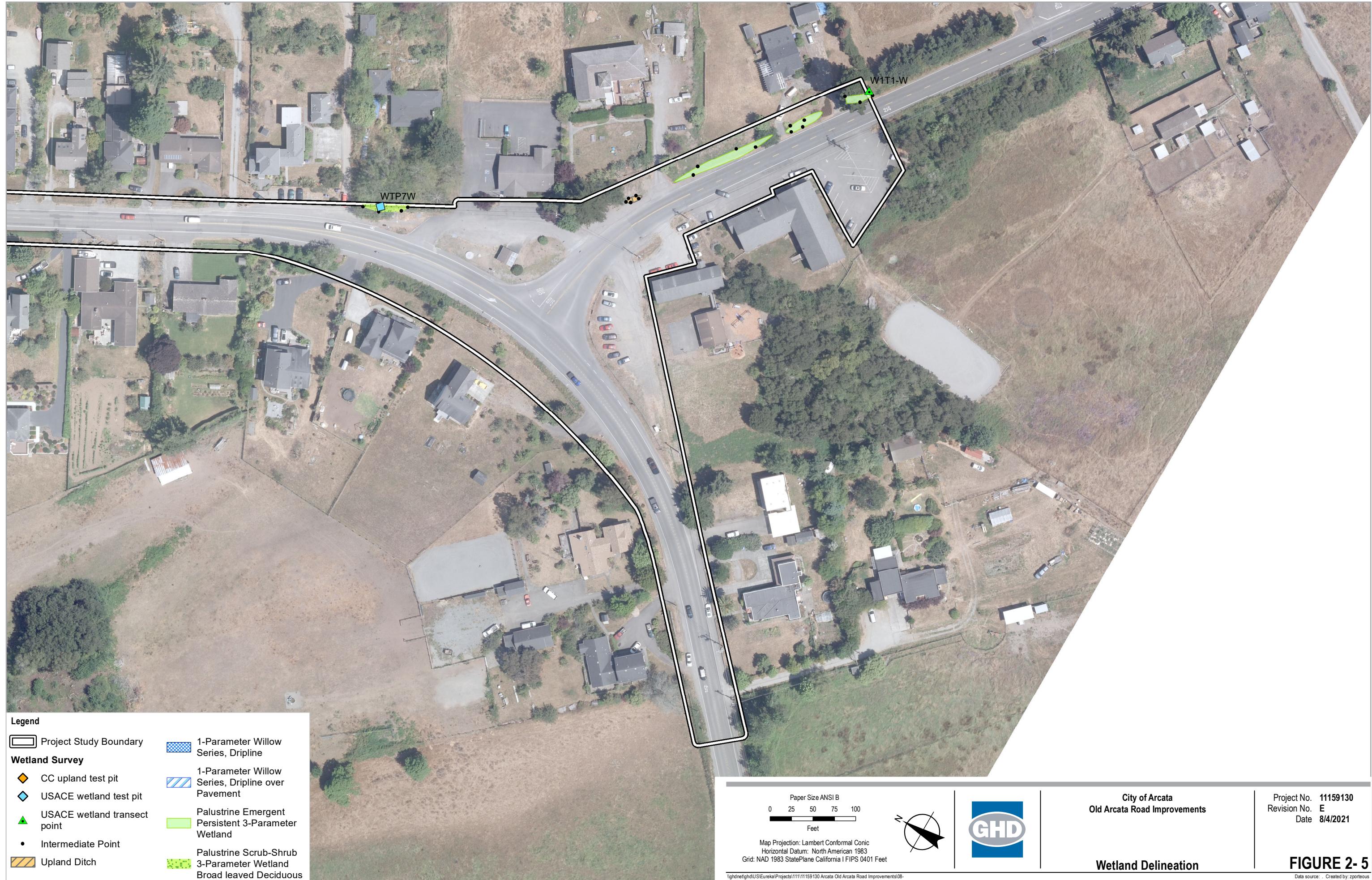
FIGURE 2-1

Data source: . Created by: zportea









Attachment 2

Data Sheets

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Old Arcata Road Improvement Project City/County: Arcata/Humboldt Sampling Date: 6/23/2021
Applicant/Owner: Humboldt County State: CA Sampling Point: CP-1
Investigator(s): M. Schwarz, K. McNamee Section, Township, Range: 3, T5N, 1RE
Landform (hillside, terrace, etc.): Flat road shoulder Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR A Lat: 40.842391 Long: -124.063341 Datum: WGS84
Soil Map Unit Name: Hookton-Tablebluff complex, 2 to 9 percent slopes NWI classification: None (upland)
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 N, Soil N, or Hydrology N 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 _____ No <input checked="" type="checkbox"/>	Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>	
Remarks: Vegetation dominated by invasive species. Hydric soil not present. Wetland hydrology present via secondary indicators.				

VEGETATION – Use scientific names of plants.

<u>Tree Stratum</u> (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A) Total Number of Dominant Species Across All Strata: 3 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)	
1. _____ 2. _____ 3. _____ 4. _____ _____ =Total Cover					
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 45 x 3 = 135 FACU species 5 x 4 = 20 UPL species 0 x 5 = 0 Column Totals: 50 (A) 155 (B) Prevalence Index = B/A = 3.10	
1. _____ 2. _____ 3. _____ 4. _____ 5. _____ _____ =Total Cover					
<u>Herb Stratum</u> (Plot size: 2 sf)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 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. <i>Trifolium repens</i> 2. <i>Plantago major</i> 3. <i>Poa annua</i> 4. <i>Matricaria discoidea</i> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____ 50 =Total Cover	25 10 10 5 _____	Yes Yes Yes No _____	FAC FAC FAC FACU _____		
<u>Woody Vine Stratum</u> (Plot size: _____)					
1. _____ 2. _____ _____ =Total Cover					
% Bare Ground in Herb Stratum _____					
Remarks:					

SOIL

Sampling Point: CP-1

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

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.)

— Histosol (A1)	— Sandy Redox (S5)
— Histic Epipedon (A2)	— Stripped Matrix (S6)
— Black Histic (A3)	— Loamy Mucky Mineral (F1) (except MLRA 1)
— Hydrogen Sulfide (A4)	— Loamy Gleyed Matrix (F2)
— Depleted Below Dark Surface (A11)	— Depleted Matrix (F3)
— Thick Dark Surface (A12)	— Redox Dark Surface (F6)
— Sandy Mucky Mineral (S1)	— Depleted Dark Surface (F7)
— 2.5 cm Mucky Peat or Peat (S2) (LRR G)	— Redox Depressions (F8)
— Sandy Gleyed Matrix (S4)	

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Hydric Soil Present? Yes No X

Remarks:

Although the second soil horizon contains redoximorphic features, it started deeper than the hydric soil indicators (such as F6).

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is 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 on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Stunted or Stressed Plants (D1) (**MLRA 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)
- X 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 X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes No X

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

Remarks:

Sampling location is between a culvert and storm drain.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Western Mountains, Valleys, and Coast Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Old Arcata Road Improvement Project City/County: Arcata/Humboldt Sampling Date: 6/23/2021
Applicant/Owner: Humboldt County State: CA Sampling Point: CP-2
Investigator(s): M. Schwarz, K. McNamee Section, Township, Range: 3, T5N, 1RE
Landform (hillside, terrace, etc.): Flat road shoulder Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): LRR A Lat: 40.842410 Long: -124.063377 Datum: WGS84
Soil Map Unit Name: Hookton-Tablebluff complex, 2 to 9 percent slopes NWI classification: None (upland)
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 N, Soil N, or Hydrology N 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 the Sampled Area within a Wetland? 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"/>	
<p>Remarks: Vegetation dominated by invasive species. Hydric soil not present. Wetland hydrology not present however one secondary indicator was observed.</p>	

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: 1 (A)	
2.					Total Number of Dominant Species Across All Strata: 2 (B)	
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)	
4.						
=Total Cover						
Sapling/Shrub Stratum	(Plot size: _____)				Prevalence Index worksheet:	
1.					Total % Cover of:	Multiply by:
2.					OBL species 0	x 1 = 0
3.					FACW species 0	x 2 = 0
4.					FAC species 55	x 3 = 165
5.					FACU species 15	x 4 = 60
=Total Cover					Column Totals: 70 (A)	225 (B)
					Prevalence Index = B/A = 3.21	
Herb Stratum	(Plot size: 2 sf)				Hydrophytic Vegetation Indicators:	
1. <i>Trifolium repens</i>	35	Yes	FAC	1 - Rapid Test for Hydrophytic Vegetation		
2. <i>Hypochaeris radicata</i>	15	Yes	FACU	2 - Dominance Test is >50%		
3. <i>Poa annua</i>	10	No	FAC	3 - Prevalence Index is ≤3.0 ¹		
4. <i>Festuca perennis</i>	5	No	FAC	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)		
5. <i>Plantago major</i>	5	No	FAC	5 - Wetland Non-Vascular Plants ¹		
6.				Problematic Hydrophytic Vegetation ¹ (Explain)		
7.						
8.						
9.						
10.						
11.						
=Total Cover					1 ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Woody Vine Stratum	(Plot size: _____)				Hydrophytic Vegetation Present?	
1.					Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2.						
=Total Cover						
% Bare Ground in Herb Stratum _____						
<p>Remarks:</p>						

SOIL

Sampling Point: CP-2

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

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.)

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- Sandy Mucky Mineral (S1)
- 2.5 cm Mucky Peat or Peat (S2) (**LRR G**)
- Sandy Gleved Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1) (**except MLRA 1**)
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- Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10)
- Red Parent Material (F21)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No X

Remarks:

No redoximorphic conditions observed

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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 X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? Yes No X Depth (inches):
(includes capillary fringe)

Wetland Hydrology Present? Yes No X

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

Remarks:

Sampling location is between a culvert and storm drain.