

Sewall Wetland Consulting, Inc.

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Fall City, WA 98024

Phone: 253-859-0515

November 15, 2021

Bill Sparks
PO Box 490
Cle Elum, Washington 98922

RE: Critical Area Report – Parcel #761133
Kittitas County, Washington
SWC Job #21-175

Dear Bill,

This report describes our observations of any jurisdictional wetlands, streams and/or buffers on Parcel #761133, in unincorporated Kittitas County, Washington (the “site”). The site consists of a 13.59 acre square shaped parcel located on the south side of Bowers Road within the NW ¼ of Section 26, Township 18 North, Range 18 East of the W.M.

METHODOLOGY

Ed Sewall of Sewall Wetland Consulting, Inc. inspected the site in in December of 2019 and in September of 2021. The site was reviewed using methodology described in the ***Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*** (USACOE September 2008) as required by the US Army Corps of Engineers starting in June of 2009. This is the methodology currently recognized by the City of Ellensburg for wetland determinations and delineations. The site was also reviewed using methodology described in Soil colors were identified using the 1990 Edited and Revised Edition of the ***Munsell Soil Color Charts*** (Kollmorgen Instruments Corp. 1990).

This site was walked in 2020 with Lori White of WADOE during our inspection of the abutting Parcels #322733, 20998& 20999 for CWH, LLC to the south, and no wetlands were observed.



Above: Vicinity Map of site



Above: Aerial photograph from Kittitas Mapsifter website

A series of 9 soil pits/data points were excavated on the site to characterize the plant, soil and hydrology conditions.

OBSERVATIONS

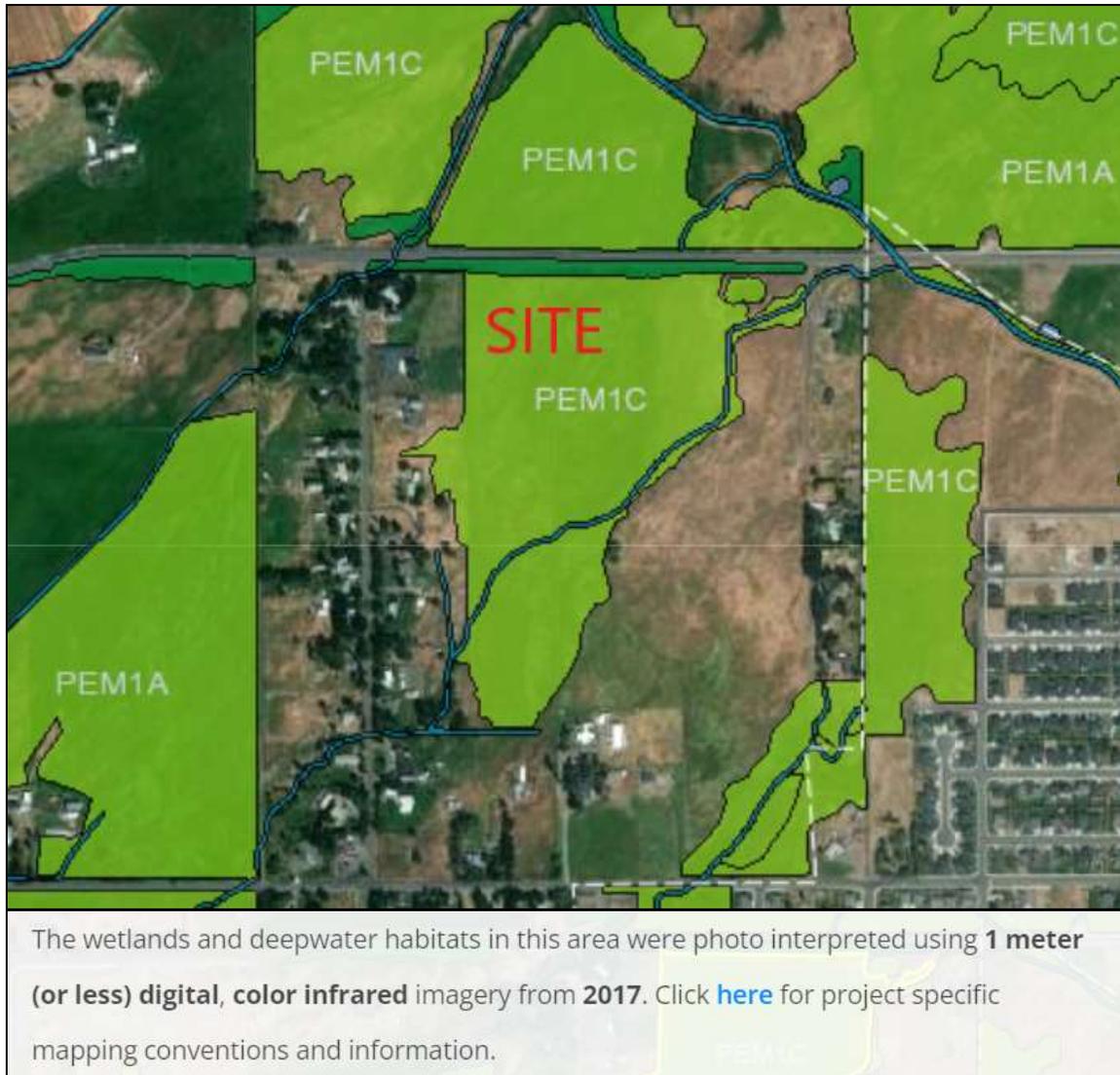
Existing Site Documentation.

Prior to visiting the site, a review of several natural resource inventory maps was conducted. Resources reviewed included the National Wetland Inventory Map and the NRCS Soil Survey online mapping and Data, Kittitas County TaxSifter website, WADNR Fpars water type mapping and the WDFW Priority Habitats and species mapping.

National Wetlands Inventory (NWI)

The NWI map depicts a large emergent wetland on the site which matches historic flood irrigation patterns on the site. The main irrigation channel is depicted as a stream crossing south of the site. This inventory

was done from interpretation of a 2017 aerial photographs with no field verification of the mapping.



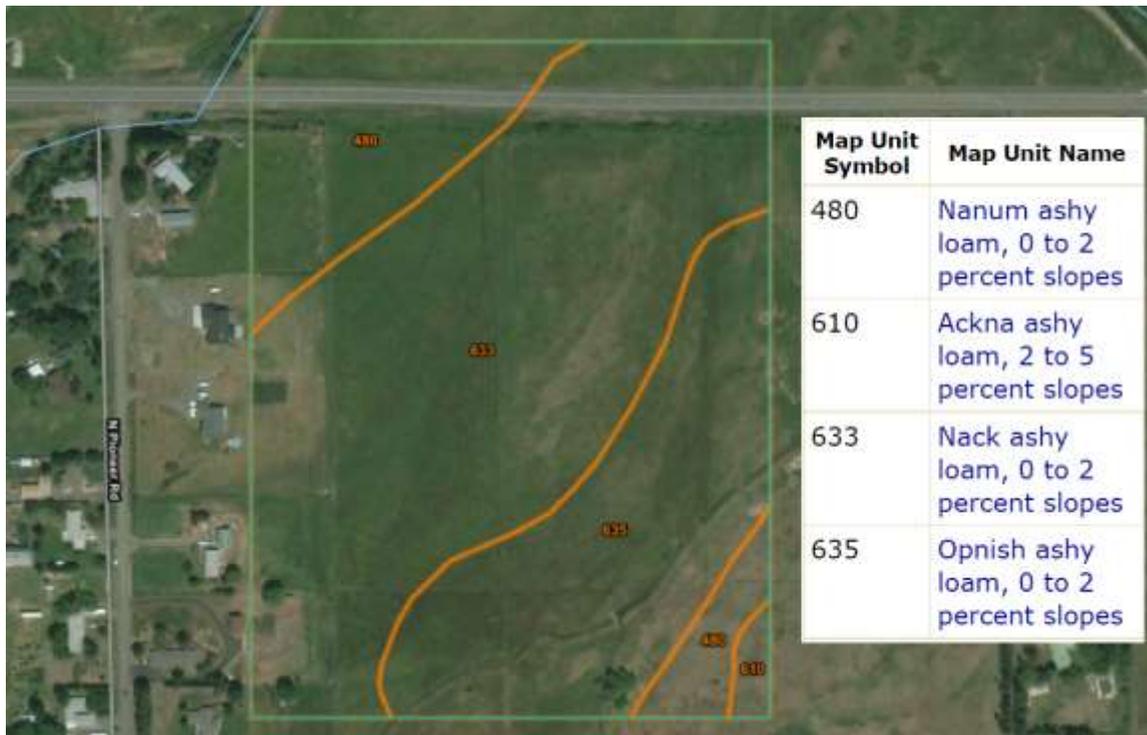
Above: NWI map of the area of the site

Soil Survey

According to the NRCS Soil Mapper website, the site is mapped as containing 5 soil types; Nanum Ashy loam (Map unit 480), Ackna ashly loam (Map Unit 610), Mitta ashly silt loam (Map Unit #621), Nack ashly

loam (Map unit #633) and Opnish ashy loam (Map unit #635). These soils range from somewhat poorly drained to well drained.

None of these soil series are considered "hydric" or wetland soils according to the publication Hydric Soils of the United States (USDA NTCHS Pub No.1491, 1991).



Above: NRCS soil map of the site.

Kittitas County Mapsifter

The Kittitas County Mapsifter website depicts a portion of an emergent wetland extending onto the eastern side of the site. As with the NWI inventory, this mapping represents an aerial photograph interpretation of the site with no field verification.



Above: Kittitas County wetland and stream mapping of the site.



Above: Kittitas TaxsiFTER Lidar depiction of the site.

WDNR Fpars Stream Mapping

According to the WDNR Fpars stream mapping website, there are no streams on or near the site.

WDFW Priority Habitats and Species Maps

The WDFW Priority Habitats and Species mapping for the site depicts the same wetland carried over from the NWI mapping.



Above: WADNR Fpars stream mapping of the site



Above: WDFW Priority habitat mapping of the area of the site.

Field observations

The site is used for grazing livestock and consists of a historically flood irrigated pasture. Flood irrigation over most of the site was ceased several years ago. The main irrigation channel that had supplied irrigation water to the site runs along the north edge of the site and at the toe of the south side of the road prism of Bowers Road. Water within this ditch originates in the KRD system to the north. Water was dispersed onto the site through a series of irrigation ditches which then dispersed water across the site using typical flood irrigation practices. Water that passed through the site drained into a large irrigation ditch just south of the site.

An old roadbed type feature passes through the center of the site from north to south. Several large cobble piles are present from past agricultural work on the site.



Above: Approximate location of irrigation ditches across the site (light blue lines).

The site is characterized by a grazed plant community of a mix of weeds and various pasture grasses. Species noted in the pastures include tall fescue, quackgrass, prickly lettuce, timothy, sedge, Baltic rush, cheatgrass, bentgrass, thistle, aster and some knapweed.

In general the soils on the site are cobbly loams with soil chroma colors of 3 or 2 without any redoximorphic features. Portions of the site include cobbly sandy loams with similar soil colors.

Areas within the old irrigation channels and flood irrigation flow paths have some wetland species and relic hydric soil indicators. However, none of these areas contained any evidence of wetland hydrology even in the late September period when groundwater levels are at their highest in the valley.



Above: Data point locations.

Conclusion

There are no wetlands, streams or buffers on the site.

If you have any questions in regards to this report or need additional information, please feel free to contact me at (253) 859-0515 or at esewall@sewallwc.com .

Sincerely,
Sewall Wetland Consulting, Inc.

Ed Sewall
Senior Wetlands Ecologist PWS #212

Attached: Data sheets

REFERENCES

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

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi.

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Muller-Dombois, D. and H. Ellenberg. 1974. Aims and Methods of Vegetation Ecology. John Wiley & Sons, Inc. New York, New York.

Munsell Color. 1988. Munsell Soil Color Charts. Kollmorgen Instruments Corp., Baltimore, Maryland.

National Technical Committee for Hydric Soils. 1991. Hydric Soils of the United States. USDA Misc. Publ. No. 1491.

Reed, P., Jr. 1988. National List of Plant Species that Occur in Wetlands: Northwest (Region 9). 1988. U. S. Fish and Wildlife Service, Inland Freshwater Ecology Section, St. Petersburg, Florida.

Reed, P.B. Jr. 1993. 1993 Supplement to the list of plant species that occur in wetlands: Northwest (Region 9). USFWS supplement to Biol. Rpt. 88(26.9) May 1988.

USDA NRCS & National Technical Committee for Hydric Soils, September 1995. Field Indicators of Hydric Soils in the United States - Version 2.1

WETLAND DETERMINATION DATA FORM - Arid West Region

09-15-21

Project/Site: Spartan - Bowers City/County: Kittitas Sampling Date: 12-24-19
 Applicant/Owner: _____ State: WA Sampling Point: DPH4
 Investigator(s): Ed Sewall Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Let: _____ 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No _____	
Remarks:		

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>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (AB)
4. _____	_____	_____	_____	Prevalence Index worksheet:
_____ = Total Cover				Total % Cover of: _____ Multiply by: _____
_____ = Total Cover				OBL species _____ x 1 = _____
_____ = Total Cover				FACW species _____ x 2 = _____
_____ = Total Cover				FAC species _____ x 3 = _____
_____ = Total Cover				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species _____ x 5 = _____
_____ = Total Cover				Column Totals: _____ (A) _____ (B)
_____ = Total Cover				Prevalence Index = B/A = _____
_____ = Total Cover				Hydrophytic Vegetation Indicators:
_____ = Total Cover				<input checked="" type="checkbox"/> Dominance Test is >50%
_____ = Total Cover				<input checked="" type="checkbox"/> Prevalence Index is ≤3.0 ¹
_____ = Total Cover				<input checked="" type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
_____ = Total Cover				<input checked="" type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
_____ = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No _____
_____ = Total Cover				% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____
Remarks:				

SOIL

Sampling Point: DPH4

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

Depth (inches)	Matrix		Redox Features		Type	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
<u>4</u>	<u>10YR 3/2</u>							
<u>16</u>	<u>7.5YR 2.5/3</u>		<u>cond</u>				<u>cond</u>	

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 Soils:
 --- Histosol (A1) --- Sandy Redox (S5) --- 1 cm Muck (A9) (LRR C)
 --- Histic Epipedon (A2) --- Stripped Matrix (S6) --- 2 cm Muck (A10) (LRR B)
 --- Black Histic (A3) --- Loamy Mucky Mineral (F1) --- Reduced Vertic (F18)
 --- Hydrogen Sulfide (A4) --- Loamy Gleyed Matrix (F2) --- Red Parent Material (TF2)
 --- Stratified Layers (A5) (LRR C) --- Depleted Matrix (F3) --- Other (Explain in Remarks)
 --- 1 cm Muck (A9) (LRR D) --- Redox Dark Surface (F8)
 --- Depleted Below Dark Surface (A11) --- Depleted Dark Surface (F7)
 --- Thick Dark Surface (A12) --- Redox Depressions (F8)
 --- Sandy Mucky Mineral (S1) --- Vernal Pools (F9)
 --- Sandy Gleyed Matrix (S4)
¹Indicators 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: no indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
--- Surface Water (A1)	--- Salt Crust (B11)
--- High Water Table (A2)	--- Biotic Crust (B12)
--- Saturation (A3)	--- Aquatic Invertebrates (B13)
--- Water Marks (B1) (Nonriverine)	--- Hydrogen Sulfide Odor (C1)
--- Sediment Deposits (B2) (Nonriverine)	--- Oxidized Rhizospheres along Living Roots (C3)
--- Drift Deposits (B3) (Nonriverine)	--- Presence of Reduced Iron (C4)
--- Surface Soil Cracks (B6)	--- Recent Iron Reduction in Tilled Soils (C6)
--- Inundation Visible on Aerial Imagery (B7)	--- Thin Muck Surface (C7)
--- Water-Strained Leaves (B9)	--- Other (Explain in Remarks)
--- Water Marks (B1) (Riverine)	--- Water Marks (B1) (Riverine)
--- Sediment Deposits (B2) (Riverine)	--- Sediment Deposits (B2) (Riverine)
--- Drift Deposits (B3) (Riverine)	--- Drift Deposits (B3) (Riverine)
--- Drainage Patterns (B10)	--- Drainage Patterns (B10)
--- Dry-Season Water Table (C2)	--- Dry-Season Water Table (C2)
--- Crayfish Burrows (C8)	--- Crayfish Burrows (C8)
--- Saturation Visible on Aerial Imagery (C9)	--- Saturation Visible on Aerial Imagery (C9)
--- Shallow Aquitard (D3)	--- Shallow Aquitard (D3)
--- FAC-Neutral Test (D5)	--- FAC-Neutral Test (D5)

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: no indicators

WETLAND DETERMINATION DATA FORM - Arid West Region

09-15-21

Project/Site: Spartan - Bennis City/County: K. T. T. T. S Sampling Date: 12-24-19
 Applicant/Owner: _____ State: WA Sampling Point: DPT#5
 Investigator(s): Ed Sewall Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ 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 <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____	
Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	
Remarks:	

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>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (AB)
4. _____				
= Total Cover				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 = _____				
Hydrophytic Vegetation Indicators:				
Dominance Test is >50% <input checked="" type="checkbox"/>				
Prevalence Index is ≤3.0 <input checked="" type="checkbox"/>				
Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)				
Problematic Hydrophytic Vegetation ¹ (Explain)				
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____				
Woody Vine Stratum (Plot size: _____)				
1. _____				
2. _____				
= Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: DPT#5

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	Loc	Texture	Remarks
<u>3</u>	<u>10YR 2/2</u>							
<u>14</u>	<u>10YR 3/4</u>						<u>clayey loam</u>	

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Location: PL=Pore Lining, M=Matrix.
 Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils:
 ___ Histosol (A1) ___ Sandy Redox (S5) ___ 1 cm Muck (A9) (LRR C)
 ___ Histic Epipedon (A2) ___ Stripped Matrix (S6) ___ 2 cm Muck (A10) (LRR B)
 ___ Black Histic (A3) ___ Loamy Mucky Mineral (F1) ___ Reduced Vertic (F18)
 ___ Hydrogen Sulfide (A4) ___ Loamy Gleyed Matrix (F2) ___ Red Parent Material (TF2)
 ___ Stratified Layers (A5) (LRR C) ___ Depleted Matrix (F3) ___ Other (Explain in Remarks)
 ___ 1 cm Muck (A8) (LRR D) ___ Redox Dark Surface (F6)
 ___ Depleted Below Dark Surface (A11) ___ Depleted Dark Surface (F7)
 ___ Thick Dark Surface (A12) ___ Redox Depressions (F8)
 ___ Sandy Mucky Mineral (S1) ___ Vernal Pools (F9)
 ___ Sandy Gleyed Matrix (S4)

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

Remarks: no indicators

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
___ Surface Water (A1)	___ Salt Crust (B11)
___ High Water Table (A2)	___ Biotic Crust (B12)
___ Saturation (A3)	___ Aquatic Invertebrates (B13)
___ Water Marks (B1) (Nonriverine)	___ Hydrogen Sulfide Odor (C1)
___ Sediment Deposits (B2) (Nonriverine)	___ Oxidized Rhizospheres along Living Roots (C3)
___ Drift Deposits (B3) (Nonriverine)	___ Presence of Reduced Iron (C4)
___ Surface Soil Cracks (B6)	___ Recent Iron Reduction in Tilled Soils (C6)
___ Inundation Visible on Aerial Imagery (B7)	___ Thin Muck Surface (C7)
___ Water-Stained Leaves (B9)	___ Other (Explain in Remarks)
___ Water Marks (B1) (Riverine)	___ Water Marks (B1) (Riverine)
___ Sediment Deposits (B2) (Riverine)	___ Sediment Deposits (B2) (Riverine)
___ Drift Deposits (B3) (Riverine)	___ Drift Deposits (B3) (Riverine)
___ Drainage Patterns (B10)	___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)	___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)	___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)	___ Saturation Visible on Aerial Imagery (C9)
___ Shallow Aquitard (D3)	___ Shallow Aquitard (D3)
___ FAC-Neutral Test (D6)	___ FAC-Neutral Test (D6)

Field Observations:
 Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? Yes _____ No Depth (inches): _____ Wetland Hydrology Present? Yes _____ No

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

Remarks: no indicators

