



Wetland Delineation Report

FOR

Blehm 18-I Pad

Prepared For:



COLORADO
Oil & Gas Conservation
Commission
Department of Natural Resources

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1. INTRODUCTION

RPG Resources (RPG) and Corvus Environmental Consulting, on behalf of Bayswater Exploration and Production, LLC (BEP), conducted a wetland delineation of the Blehm 18-I proposed project location to identify any waters of the US or wetland constraint(s) present within or surrounding the proposed construction area. This assessment was conducted in order to ensure BEP's compliance with the associated Colorado Oil and Gas Conservation Commission (COGCC) 1200 Series Rules, Clean Water Act (CWA) and other applicable agency requirements and recommendations. This report summarizes the project location, methods used and results of the assessment. The wetland delineation was conducted by Ms. Carla DeMasters, Corvus Senior Ecologist on November 1, 2021.

2. PROJECT LOCATION

The Blehm 18-I proposed project location (Site) boundaries are defined as the disturbance area for the proposed Working Pad Surface (WPS) and the associated 500-foot buffer from WPS. The Site is located in Section 18 of Township 7 North, Range 66 West in Weld County, Colorado. The Site is located in the Western Great Plains Range and Irrigated Region Land Resource Region (LRR) and the Central High Plains, Southern Part Major Land Resource Area (MLRA; NRCS 2006). The soil types are Olney fine sandy loam, 1 to 3 percent slopes and 3 to 5 percent slopes (NRCS 2020) and the field-verified land type is cropland.

The strip of vegetation along the top of Pierce Lateral adjacent to the non-irrigated cropland was dominated by saltgrass (*Distichlis spicata*), cheatgrass (*Bromus tectorum*), Russian thistle (*Salsola tragus*) and burning bush (*Bassia scoparia*) with the occasional prickly lettuce (*Lactuca serriola*). The steep edges of the ditch were dominated by rice cutgrass (*Carex emeryii*), saltgrass, burning bush, Russian thistle, Canada thistle (*Cirsium arvense*), reed canary grass (*Phalaris arundinacea*) and sandbar willow (*Salix exigua*) with the occasional showy milkweed (*Asclepias speciosa*) and peachleaf willow (*Salix amygaloides*).

3. QUALIFICATIONS

Ms. DeMasters is a Senior Ecologist with CORVUS Environmental Consulting in Denver, CO. She is a Professional Wetland Scientist (PWS #2886) and a Certified Ecological Restoration Practitioner (CERP) with advanced plant identification skills and over 16 years of experience in wetland delineation, wetland functional assessments, stream assessments (CSQT), botanical and ecological surveys, revegetation planning and oversight, revegetation assessments, quantitative and qualitative vegetation studies, GIS and spatial data analysis. She has worked extensively throughout the Northern and Southern Great Plains, Southern Rocky Mountains and Colorado Plateau. She has a M.S. in Biology from the University of Colorado Denver and a M.A. in Geography from the University of Colorado Boulder.

4. METHODS

The environmental site assessment included a desktop review of aerial imagery, agency-mapped sensitive natural resources, and the National Wetland Inventory (NWI) mapped areas. Following the desktop review, a wetland delineation was conducted on November 1, 2021. The survey followed routine delineation methods described in the U.S. Army Corps of Engineers Wetlands Delineation

Manual (USACE 1987), and in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0) (USACE 2010), hereinafter referred to as the Regional Supplement, to evaluate the presence/absence of wetlands in the Project Area. Wetlands are characterized by a predominance of hydrophytic vegetation, presence of hydric soils, and presence of wetland hydrology. While surveying the Project Area, Ms. DeMasters searched for visual evidence of vegetation composition consistent with prolonged inundation or saturation, and changes in surface features indicating the presence of wetland hydrology. If any of these circumstances were present, Ms. DeMasters collected data necessary to complete a Wetland Determination Data Form, providing documentation of the presence or absence of wetlands. Determination of wetland habitat type, if present, was based on the classification system developed by Cowardin et al. (1979) and accepted by the U.S. Army Corps of Engineers (USACE). Wetland boundaries (i.e., the upland/wetland interface), if present, were recorded on a Trimble GPS unit. Photographs were taken to document findings.

5. RESULTS

5.1. Wetlands and Waters of the U.S.

There are several National Wetland Inventory (NWI)- and National Hydrography Dataset (NHD)-mapped wetlands and waterbodies surrounding the Site. Wetland delineation data forms were collected at four (4) sample locations. Sample point 1 was at the ordinary high-water mark (OHWM) with hydrophytic vegetation, hydric soils and wetland hydrology observed and therefore a wetland. Sample point 2 was approximately 2 feet above the OHWM and did not contain hydrophytic vegetation, hydric soils nor wetland hydrology and was an upland. Sample point 3 was at the OHWM and did not contain hydrophytic vegetation, hydric soils nor wetland hydrology and was an upland. Sample point 4 was east of the ditch and adjacent ditch access road with hydrophytic vegetation, hydric soils and wetland hydrology observed and therefore a wetland. See attached site map (Appendix A), site photos (Appendix 2) and wetland delineation data forms (Appendix 3).

No direct impact or surface disturbance within any of the wetlands are expected by construction, pre-production, or production activities. The identified wetlands adjacent to the OHWM of Pierce lateral are on the other side of a preexisting berm that runs the length of the ditch in the project area. Indirect impacts from potential erosion or runoff would be prevented by containment berms required as part of Bayswater's SPCC plans, as well as secondary containment provided by stormwater BMPs.

5.2. 100-year Floodplain

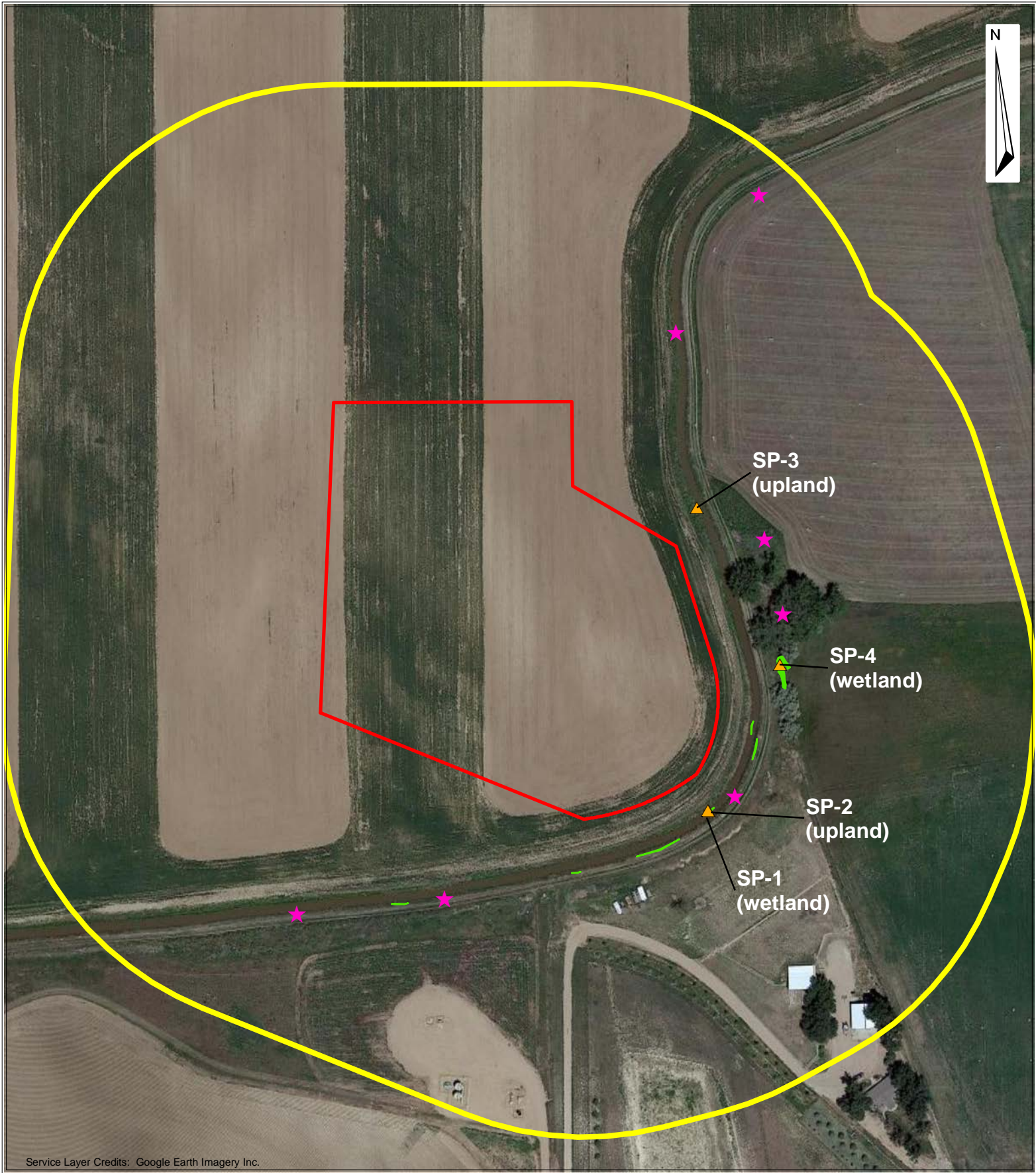
The Site is not located within any Federal Emergency Management Agency (FEMA)-mapped 100-year floodplain. The closest point of the 100-year floodplain for Wykert Reservoir Number 1 is approximately 0.9 miles east of the access road. No construction activity is scheduled to occur within the 100-year floodplain.

6. CONCLUSION






Based on the results of our surveys, per Rule 1202.a.(3), there are several wetlands within 500 feet of the WPS of the site. However, no wetlands are located within the WPS of the site, and no impacts to wetlands are expected from construction, pre-production, or production activities.

APPENDIX A

Site Map



BLEHM 18-I PAD

- | | | | |
|--|---------------------|---|---------------------------|
|  | Working Pad Surface |  | Sample Point |
|  | 500' Buffer |  | Upland Verification Point |
|  | Wetlands (0.012 ac) | | |

0 50 100 200 ft
1 inch = 200 feet

WETLANDS AND WATERS OF THE US



Ault, Weld County
Map Date: revised 11/3/2021

APPENDIX B

Site Photos

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 1. SP-1



Photo 2. SP-1

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 3. SP-2



Photo 4. SP-2

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 5. SP-3

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 6. SP-3

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 7. SP-4

Photo Log for Blehm 18-I Pit
Wetland Delineation

Photos Taken: November 1, 2021



Photo 8. SP-4

APPENDIX C

Wetland Delineation Data Forms

Project/Site: Blehm 18-1 Pad City/County: Ault / Weld Sampling Date: 11/1/21
Applicant/Owner: see report State: CO Sampling Point: SP-1
Investigator(s): Carla Demasters PWS Section, Township, Range: 18 T7N R16W
Landform (hillslope, terrace, etc.): slope, ditch wall Local relief (concave, convex, none): concave Slope (%): 25
Subregion (LRR): G Lat: 40.573669 Long: -104.82 4846 Datum: NAD84
Soil Map Unit Name: Olney fine sandy loam NWI classification: R4SBC Riverine
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.)

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Remarks: Ditch currently dry. Species present are mostly WLOn Sm. terrale, typically deep rooted.					

Tree Stratum (Plot size: _____)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. _____					Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	3 (A)
2. _____					Total Number of Dominant Species Across All Strata:	3 (B)
3. _____					Percent of Dominant Species That Are OBL, FACW, or FAC:	100 (A/B)
4. _____						
		_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: 15')						
1. <i>Salix amygdaloides</i>	30	✓	FACW			
2. _____						
3. _____						
4. _____						
5. _____						
		_____ = Total Cover				
Herb Stratum (Plot size: 5')						
1. <i>Carex emoryi</i>	50	✓	OBL			
2. <i>Phalaris ammodendracea</i>	5		FACW			
3. <i>Echinochloa crus-galli</i>	5		FAC			
4. <i>Cirsium arvense</i>	5		FACU			
5. <i>Rumex crispus</i>	20	✓	FAC			
6. _____						
7. _____						
8. _____						
9. _____						
10. _____						
		_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)						
1. _____						
2. _____						
		_____ = Total Cover				
% Bare Ground in Herb Stratum 20.						
Remarks: Veg. plots modified to oblong along contours. Deep rooted species.						

Dominance Test 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:

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0¹

☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: SP-1

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 ¹	Loc ²		
0-4	10YR 4/2	90	10YR 5/6	10	C	PLM	SCL	Thick rhizomes
4-16	10YR 6/3	60	10YR 5/6	10	C	PLM	SCL	
	10YR 4/1	30						

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)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)
- ☐ Sandy Gleyed Matrix (S4)
☒ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR I, J)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

³Indicators 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:

Soils very fine sandy clay loam.
 Moistened soils for color & texture analysis's.

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)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Odor (C1)
☐ Dry-Season Water Table (C2)
☒ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surface (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)
☐ Frost-Heave Hummocks (D7) (LRR F)

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:

Sediment deposits on vegetation/branches at bank's edge @ OHWM.

Project/Site: Blehm 18-1 Pad. City/County: Ault/Weld. Sampling Date: 11/1/21
Applicant/Owner: see report State: CO Sampling Point: SP-2
Investigator(s): Carla DiMasters, PWS Section, Township, Range: 18 T7N R66 W
Landform (hillslope, terrace, etc.): slope, ditchwall Local relief (concave, convex, none): convex Slope (%): 25
Subregion (LRR): G Lat: 40.573673 Long: -104.824852 Datum: WAS 84
Soil Map Unit Name: Olney fine sandy loam NWI classification: R4SBC
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.)

Hydrophytic Vegetation Present?	Yes _____ No <u>✓</u>	Is the Sampled Area within a Wetland?	Yes _____ No <u>✓</u>
Hydric Soil Present?	Yes _____ No <u>✓</u>		
Wetland Hydrology Present?	Yes _____ No <u>✓</u>		
Remarks: ~2 Feet up (vertically) from SP-1.			

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>1</u> (A)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
_____ = Total Cover				Total Number of Dominant Species Across All Strata: <u>2</u> (B)														
Sapling/Shrub Stratum (Plot size: _____)				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)														
1. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td>Total % Cover of:</td> <td>Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</u></td> </tr> <tr> <td>UPL species <u>32</u></td> <td>x 5 = <u>160</u></td> </tr> <tr> <td>Column Totals: <u>97</u></td> <td>(A) <u>294</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>32</u>	x 5 = <u>160</u>	Column Totals: <u>97</u>	(A) <u>294</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>5</u>	x 1 = <u>5</u>																	
FACW species <u>0</u>	x 2 = <u>0</u>																	
FAC species <u>30</u>	x 3 = <u>90</u>																	
FACU species <u>30</u>	x 4 = <u>120</u>																	
UPL species <u>32</u>	x 5 = <u>160</u>																	
Column Totals: <u>97</u>	(A) <u>294</u> (B)																	
_____ = Total Cover																		
Herb Stratum (Plot size: _____)																		
1. <u>Kochia scoparia</u>	<u>30</u>	<u>✓</u>	<u>UPL</u>															
2. <u>Rumex crispus</u>	<u>30</u>	<u>✓</u>	<u>FAC</u>															
3. <u>Carex laxa</u>	<u>5</u>		<u>OBL</u>															
4. <u>Bromus tectorum</u>	<u>1</u>		<u>UPL</u>															
5. <u>Helianthus annuus</u>	<u>10</u>		<u>FACU</u>															
6. <u>Oenothera villosa</u>	<u>10</u>		<u>FACU</u>															
7. <u>Sisymbrium altissimum</u>	<u>10</u>		<u>FACU</u>															
8. <u>Physalis sp.</u>	<u>1</u>		<u>UPL</u>															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
<u>97</u> = Total Cover <u>46/9</u>				Prevalence Index = B/A = <u>3.03</u>														
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:														
1. _____	_____	_____	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation														
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%														
% Bare Ground in Herb Stratum <u>5</u>				<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹														
_____ = Total Cover				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)														
Remarks: _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Hydrophytic Vegetation Present? Yes _____ No <u>✓</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														

SOIL

Sampling Point: SP-2

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 ¹	Loc ²		
0-4	10YR 4/2	40					SCL	
	10YR 5/3	60						
4-16	10YR 4/2	50					SCL	
	10YR 6/4	50						

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.)

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	(MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
(LRR H outside of MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators 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 redoxomorph features.
moistened soils to obtain color/texture.

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (minimum of one required; check all that apply)</u>		<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	(where tilled)
<input type="checkbox"/> Drift Deposits (B3)	(where not tilled)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒

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

Remarks:

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: Blehm 18-1 Pad City/County: Aunt/Weld Sampling Date: 11/1/21
 Applicant/Owner: See report State: CO Sampling Point: SP-3
 Investigator(s): Carla Demasters PWS Section, Township, Range: 518 T 7N R66W
 Landform (hillslope, terrace, etc.): ditch wall, slope Local relief (concave, convex, none): convex Slope (%): 25
 Subregion (LRR): G Lat: 40.574979 Long: -104.824901 Datum: WGS 84
 Soil Map Unit Name: Olney fine sandy loam NWI classification: R4SBC

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 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"/>	
Remarks: <u>Western extent of ditch in project - to west ditch becomes more incised w/ steeper walls.</u>	

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>15'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1. <u>/</u>				Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-):	<u>1</u> (A)
2. <u>/</u>				Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
3. <u>/</u>				Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>33</u> (A/B)
4. <u>/</u>					
				Prevalence Index worksheet:	
Total % Cover of:				Multiply by:	
OBL species <u>60</u>				x 1 = <u>60</u>	
FACW species <u>0</u>				x 2 = <u>0</u>	
FAC species <u>0</u>				x 3 = <u>0</u>	
FACU species <u>0</u>				x 4 = <u>0</u>	
UPL species <u>0</u>				x 5 = <u>0</u>	
Column Totals: <u>60</u> (A)				<u>60</u> (B)	
Prevalence Index = B/A = <u>1</u>					
Hydrophytic Vegetation Indicators:					
1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/>					
2 - Dominance Test is >50% <input type="checkbox"/>					
3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/>					
4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/>					
Problematic Hydrophytic Vegetation ¹ (Explain) <input type="checkbox"/>					
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.					
Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>					
Remarks: <u>Dominated by deep rooted species.</u>					

SOIL

Sampling Point: SP-3

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 ¹	Loc ²		
0-2	10YR 4/2	60					SCU	
	10YR 5/3	40						
2-16	10YR 4/1	60					SCU	
	10YR 5/3	40						

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 Soils³:

- | | | |
|--|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) | ³ Indicators of hydrophytic vegetation and |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | <input type="checkbox"/> (MLRA 72 & 73 of LRR H) | wetland hydrology must be present, |
| | | unless disturbed or problematic. |

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ☒

Remarks:

NO redoxomorphic features.
Moistened soils to get color / texture.

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> (where tilled) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> (where not tilled) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

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:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Blehm 18-1 Pad City/County: Ault/Weld Sampling Date: 11/11/21
 Applicant/Owner: see report State: CO Sampling Point: SP-4
 Investigator(s): Carla DeMasters, PWS Section, Township, Range: S18 T7N R66W
 Landform (hillslope, terrace, etc.): plain, toe of slope Local relief (concave, convex, none): concave Slope (%): <1
 Subregion (LRR): 6 Lat: 40.5743 Long: -104.824438 Datum: WAS 84
 Soil Map Unit Name: Olney fine sandy loam 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 <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>		
Remarks: <u>Pit located on outside slope of berm (ditch), at edge of agricultural field.</u>			

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): <u>2</u> (A)
1. <u>Glaucagnus angustifolia</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Populus deltoides</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
<u>40</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>30</u> x 3 = <u>90</u> FACU species <u>45</u> x 4 = <u>180</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>135</u> (A) <u>380</u> (B) Prevalence Index = B/A = <u>2.8</u>
Sapling/Shrub Stratum (Plot size: <u>—</u>)				
1. <u>Typha latifolia</u>	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: <u>5'</u>)				
1. <u>Typha latifolia</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	
2. <u>Cirsium arvense</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Rumex crispus</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Muhlenbergia asperifolia</u>	<u>10</u>	_____	<u>FACW</u>	
5. <u>Equisetum laevigatum</u>	<u>10</u>	_____	<u>FAC</u>	
6. <u>Bromus inermis</u>	<u>10</u>	_____	<u>UPL</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
<u>95</u> = Total Cover <u>47</u> <u>19</u>				
Woody Vine Stratum (Plot size: <u>—</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
% Bare Ground in Herb Stratum <u>5</u>				
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

SOIL

Sampling Point: SP-4

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-4	10YR 3/2	60	7.5YR 5/8	5	C	PL, M	Sicl	
	10YR 5/3	35						
4-16	10YR 4/2	10	5YR 5/8	20	C	PL, M	Sicl	
	10YR 5/3	70						

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.)

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR F) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H) | <input type="checkbox"/> High Plains Depressions (F16) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F) | (MLRA 72 & 73 of LRR H) |

Indicators for Problematic Hydric Soils³:

- | |
|--|
| <input type="checkbox"/> 1 cm Muck (A9) (LRR I, J) |
| <input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H) |
| <input type="checkbox"/> Dark Surface (S7) (LRR G) |
| <input type="checkbox"/> High Plains Depressions (F16) |
| (LRR H outside of MLRA 72 & 73) |
| <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Other (Explain in Remarks) |

³Indicators 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)

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Invertebrates (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | (where not tilled) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | |

Secondary Indicators (minimum of two required)

- | |
|---|
| <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) |
| <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| (where tilled) |
| <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F) |

Field Observations:

- | | | |
|------------------------|---|-----------------------|
| Surface Water Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ |
| Water Table Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ |
| Saturation Present? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | Depth (inches): _____ |

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks: