Montana Department of Transportation Wetland Mitigation Monitoring Report

US 93 PETERSON MITIGATION SITE

Project Overview

MDT Project # NH-5-2(122)31 UPN# 1744

Watershed: Watershed #3 – Lower Clark Fork

Monitoring Year: 2023

Years Monitored: 15th year of monitoring (3rd year after adaptive management actions in 2020)

Corps Permit Number: NWO-2005-90-185

Monitoring Conducted By: Confluence Consulting Inc

Dates Monitoring Was Conducted: June 21-22, 2023

Purpose of the Approved Project:

US 93 Peterson is one of five mitigation sites developed in cooperation with the permitting and natural resources staff from the Confederated Salish and Kootenai Tribes (CSKT) of the Flathead Nation to mitigate for wetland impacts associated with eight segments of the US 93 Evaro-to-Polson highway reconstruction project by the Montana Department of Transportation (MDT). This report assesses the US 93 Peterson site, that due to adaptive management actions in 2020, has not met required mitigation goals and objectives as determined by the US Army Corps of Engineers (USACE) and the CSKT Shoreline Protection Program. The 2004 wetland mitigation plan provided wetland mitigation concepts, identified wetland community types targeted for establishment, and calculated the wetland mitigation credits expected to be obtained from each onsite mitigation area. At the US 93 Peterson site, MDT was to establish mitigation for wetland impacts regulated by the USACE and the CSKT. This site was to provide 1.31 acres of CSKT mitigation credit and 2.39 acres of Corps mitigation credit (See Table 1-2 in 2017 Monitoring Report https://www.mdt.mt.gov/publications/brochures//wetland-mitigation.aspx).

Site Location:

Latitude: 47.361717 **Longitude:** -114.099755

County: Lake County **Nearest Town:** St. Ignatius, MT

Map Included: Figure #1 on page 7.

Mitigation Site Construction Started: 2004 **Construction Ended:** 2007

Specific recommendations for any additional corrective actions: Repairs to the failing outfall and log crib structures installed in 2020. Weed management should continue.

Anticipated Wetland Credit Acres: USACE – 2.39, CSKT – 1.31

Wetland Credit Acres Generated to Date: USACE – 3.04, CSKT – 1.34

Previous Monitoring Reports:

https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

Requirements (from approved mitigation plan, banking instrument, or US Army Corps of Engineers permit conditions)

Monitoring Period: 5 years from construction completion or until concurrence by the USACE.

Performance Standards*: 1) Construction of impoundments using 12 log crib structures and earthen berms, and 2) planting of shrubs and herbaceous plugs within the wetland fringe and earthen embankments associated with log crib structures. The target wetland type in the riparian area is palustrine scrub-shrub that supports a Bebb's willow community type with inclusions of palustrine emergent habitat. Grazing is excluded from the mitigation site to

preserve the riparian and wetland areas. Revegetation was completed in 2006, and recent adaptive management associated with crib repairs was completed in May 2020.

*Performance criteria were reviewed in 2022, and where necessary, corrected and/or removed to accurately reflect the original performance criteria agreed to in the mitigation plan and any amendments to the mitigation plan.

Summary Data

Wetland Delineation –Total wetland acreage delineated in 2023 was 3.51 acres, an increase of 0.04 acres from 2022. The dominant wetland type delineated at the site is palustrine emergent (PEM) with a developing palustrine scrub shrub (PSS) component comprised of willows (*Salix* spp.) and alders (*Alnus incana*) that provide approximately 10% canopy cover across the entire wetland area. The small slope wetlands in the north and south portions of the site are decreasing in size as hydrology appears to be decreasing over time (Table 1; Figure A-3, Appendix A). The increased wetland acreage delineated in 2023 is supported by lateral groundwater movement from the adjacent irrigated pasture west of the project site. Changes in wetland habitat at the site have not been supported as expected by the crib repairs in 2020 that were intended to spread water out across the site.

Table 1. Delineated Wetland Acreage from 2016-2017 and 2020-2023 at the US 93 Peterson Site.

Habitat Type (acres)	2016	2017	2020	2021	2022	2023
(PEM) Wetland	3.20	3.20	3.94	3.60	3.47	3.51

Vegetation – A total of 100 plant species have been identified at the site in the 15 years of monitoring, with five species documented at the site for the first time in 2023 (Appendix B; Table B-1).

Two upland type (UT) and four wetland type (WT) vegetation communities were identified and mapped at the site in 2023 (Figure A-3, Appendix A). Wetland type 2 (*Phalaris arundinacea / Carex spp*.), which was developed in 2021 to reflect the diversification of this community from a dominance of reed canary grass (*Phalaris arundinacea*) to a co-dominance with a variety of Carex spp., is present along the stream channel at the east and west ends of the site. Wetland type 8 (*Typha latifolia / Phalaris arundinacea*) is present along the stream channel in the central portion of the site. This WT contains the developing scrub shrub habitat at the site. In 2021, WT 13 (*Carex nebrascensis / Nasturtium officinale)* was created to replace WT 12 (*Carex nebrascensis / Poa pratensis*) and document the vegetation community in the slope wetland at the north end of the site. Wetland Type 12 has again been included at the site in 2023 to document the newly developed wetland area at the west boundary of the site. Much of the upland habitat at the site is mapped as UT 7 (*Elymus repens / Poa pratensis),* except for a natural berm in the northeast corner which is UT 10 (*Elymus repens / Sisymbrium altissimum).*

Species composition for each community type is provided in detail in the Wetland Mitigation Site Monitoring form (Appendix B). The vegetation community types identified within the site in 2023 include the following:

- Wetland Type 2 – *Phalaris arundinacea / Carex spp.*
- Wetland Type 8 – *Typha latifolia / Phalaris arundinacea*
- Wetland Type 12 – *Carex nebrascensis / Poa pratensis*
- Wetland Type 13 – *Carex nebrascensis / Nasturtium officinale*
- Upland Type 7 – *Elymus repens / Poa pratensis*
- Upland Type 10 – *Elymus repens / Sisymbrium altissimum*

Vegetation cover was estimated along two belt transects (T-1 and T-2) in 2023 (Figure A-2, Appendix A). Photographs of the transect end points are provided in Appendix C. Data for T-1

are summarized in Table 2. T-1 is 144 feet long and intersects UT 7 – *Elymus repens* / *Poa pratensis* and WT 8 – *Typha latifolia* / *Phalaris arundinacea*. Consistent with observations in 2022, 83.3 percent of the transect crossed wetland habitat and 16.7% crossed upland. The number of hydrophytic species increased from 14 to 16, and the total number of species documented along the belt transect has increased from 23 to 25. Total vegetative cover remains unchanged at 95 percent.

Table 2. Data Summary for T-1 From 2016 – 2017 and 2021 - 2023 at the US 93 N Peterson Site.

Monitoring Year	**2016**	**2017**	**2021**	**2022**	**2023**
Transect Length (feet)	144	144	144	144	144
Vegetation Community Transitions along Transect	2	2	2	2	2
Vegetation Communities along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities along Transect	1	1	1	1	1
Total Vegetative Species	15	14	17	23	25
Total Hydrophytic Species	12	7	13	14	16
Total Upland Species	3	7	4	9	9
Estimated % Total Vegetative Cover	96	95	95	95	95
Estimated % Unvegetated	4	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	73.6	85.4	86.8	83.3	83.3
% Transect Length Comprising Upland Vegetation Communities	26.4	14.6	13.2	16.7	16.7
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

Data collected on T-2 (Wetland Mitigation Site Monitoring form, Appendix B) are summarized in Table 3. T-2 is 325 feet long and intersects UT 7 – *Elymus repens* / *Poa pratensis* and WT 8 – *Typha latifolia* / *Phalaris arundinacea*. Consistent with observations in 2022, 78.5 percent of the transect crossed wetland habitat and 21.5% crossed upland. The number of hydrophytic species increased from 18 to 19, and the total number of species observed along the transect has increased from 28 to 30. Total vegetative cover remains unchanged at 95 percent.

Table 3. Data Summary for T-2 From 2016 - 2017 and 2021 - 2023 at the US 93 N Peterson Site.

Monitoring Year	**2016**	**2017**	**2021**	**2022**	**2023**
Transect Length (feet)	325	325	325	325	325
Vegetation Community Transitions along Transect	3	3	3	1	1
Vegetation Communities along Transect	2	2	2	2	2
Hydrophytic Vegetation Communities along Transect	1	1	1	1	1
Total Vegetative Species	18	17	17	28	30
Total Hydrophytic Species	14	6	12	18	19
Total Upland Species	4	11	5	10	11
Estimated % Total Vegetative Cover	93	95	95	95	95
Estimated % Unvegetated	7	5	5	5	5
% Transect Length Comprising Hydrophytic Vegetation Communities	67.7	72.0	72.0	78.5	78.5
% Transect Length Comprising Upland Vegetation Communities	32.3	28.0	28.0	21.5	21.5
% Transect Length Comprising Unvegetated Open Water	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0

Infestations of state-listed Priority 2A and 2B noxious weeds were mapped across the US 93 Peterson site in 2023, and have increased from 2022 (Figure A-3, Appendix A). Infestations are assigned a cover class (Trace = <1%; Low = 1-5%; Moderate – 6-25%; High = 26-50%) assessed at a 0.1-acre area. Ventenata (*Ventenata dubia*) was first observed in the north central portion of the site in 2020 at a low cover class. In 2023, the number of occurrences has increased, ranging from low to moderate. Pale-yellow iris (*Iris pseudacorus*) has spread within WT 8 and is gradually increasing in density over time. Whitetop (*Lepidium draba)* occurrences are most prevalent and range from trace to high in the upland areas with the densest infestations existing in the southwest corner of the mitigation site. Canada thistle (*Cirsium arvense*), Gypsy-flower (*Cynoglossum officinale*), and ox-eye daisy (*Leucanthemum vulgare*) are primarily observed within the wetland and along the wetland boundary with infestations ranging from trace to high.

Hydrology – The main source of hydrology at the Peterson site is an unnamed perennial tributary of Post Creek that flows east to west. The mitigation site is located within a ¼-mile-long wetland corridor aligned east to west that follows the topographic gradient toward Post Creek. The project area is exposed to seasonal flooding during spring runoff, seasonally high groundwater, and sustained flows during summer from irrigation returns. Additionally, small seeps occur north and south of the tributary at the toe of slope. These two wetlands were observed to recede in 2022 and continued to do so in 2023. Immediately east of US 93 and the Peterson site is a small reservoir located on private land. The landowner manipulates the channel flows from this reservoir that supply hydrology to the mitigation site. Lake County has experienced a string of drought years (abnormally dry to extreme drought) over the growing season since 2021 (NDMC 2023). Additionally, water levels in the channel appeared lower than observed in 2022 with the estimated water depth ranging from 0-18 inches. This is a decrease of 6 inches from the previous year. Example photographs of the typical water level observed in the channel are included in Appendix C.

In May 2020, three log crib structures (i.e., log dams 1, 1A, 2, and 6) and earthen berms were installed, repaired, and replaced to improve water impoundment and increase wetland establishment across the site. In 2023, water was flowing under and not over each of the three crib structures, indicating failure. These structures will require repairs to function as intended.

Soils – The assessment area is mapped as Colake silt loam and Ronan silty clay loam by the National Resource Conservation Service (NRCS). Paired soil test plots, one upland plot paired with one wetland plot, were excavated at 5 locations (Figure A-2, Appendix A). The hydric soil indicators redox dark surface, depleted below dark surface, and hydrogen sulfide were observed in wetland test plots. Wetland soil textures ranged from loam to clay to mucky peat, and a restrictive hardpan layer was encountered around 11-12 inches in many upland and wetland soil plots. No hydric soil indicators were observed in the upland soil plots.

Photographs – Photographs were taken at photo points 1–8, transect endpoints, and data points. These, as well as additional site photos of the repaired cribs and outflow structures, are provided in Appendix C with comparisons to the first year of monitoring. MDT added photo point 8 in 2020 to monitor the newly installed Log Crib 1A. Please refer to past monitoring reports for the US93 sites containing all previous annual photographs at this weblink: https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

Functional Assessment – The 2023 results of the functional assessment utilizing the 2008 version of the Montana Wetland Assessment (MWAM) are summarized in Table 4. Prior to 2021, the 1999 version of the MWAM form was utilized to determine functions and values. In 2020, because of the adaptive management actions, the 2008 MWAM version was implemented at the behest of the Corps. Changes in functional points scored between past years and from 2021 forward may be related to substantial updates between the two different MWAM versions

and are not necessarily representative of altered function. Comparisons across 2021, 2022, and 2023 are more representative of functionality. The 2023 completed MWAM form for the US 93 Peterson site is provided in Appendix B. Overall, the site rates as a Category II wetland and has generated 27.56 Functional Units. Due to observations of minnows in the channel in 2021 and 2022, fish habitat, which was previously rated as N/A, has been included in the MWAM since 2020. Expected wetland mitigation credits are shown in Table 5.

Table 4. Montana Wetland Assessment Method Summary for the US 93 N Peterson Site.

Function and Value Parameters from the MDT Montana Wetland Assessment Method (2008)	2004 (Baseline) (AA-1)*	2017 (AA-1)*	2021 (AA-1)	2022 (AA-1)	2023 (AA-1)
Listed/Proposed T&E Species Habitat	Low (0.3)	High (0.8)	High (0.8)	High (0.8)	High (0.8)
MTNHP Species Habitat	Low (0.1)	Low (0.1)	Low (0.1)	Low (0.1)	Low (0.1)
General Wildlife Habitat	Low (0.5)	High (0.9)	High (0.9)	High (0.9)	High (0.9)
General Fish/Aquatic Habitat	Low (0.1)	NA	Low (0.3)	Low (0.3)	Low (0.3)
Flood Attenuation	Low (0.2)	High (0.8)	Mod (0.6)	Mod (0.6)	Mod (0.6)
Short and Long Term Surface Water Storage	Mod (0.4)	High (0.8)	High (0.8)	High (0.8)	High (0.8)
Sediment/Nutrient/Toxicant Removal	High (0.9)	High (1.0)	High (1)	High (1)	High (1)
Sediment/Shoreline Stabilization	High (0.7)	High (1.0)	High (1)	High (1)	High (1)
Production Export/Food Chain Support	High (0.8)	High (0.8)	High (0.8)	High (0.8)	High (0.8)
Groundwater Discharge/Recharge	High (1.0)	High (1.0)	High (1)	High (1)	High (1)
Uniqueness	Low (0.2)	Mod (0.4)	Mod (0.4)	Mod (0.4)	Mod (0.4)
Recreation/Education Potential (Bonus Points)	Low (0.1)	High (1.0)	High (0.15)	High (0.15)	High (0.15)
Actual Points / Possible Points	**5.3/12**	**8.6/11**	**7.85/11**	**7.85/11**	**7.85/11**
% of Possible Score Achieved	**44%**	**78%**	**71%**	**71%**	**71%**
Overall Category	**III**	**II**	**II**	**II**	**II**

*1999 MWAM form. 2008 MWAM first utilized at US 93 N Peterson in 2021.

Wildlife – Eight bird species were identified at the site in 2023. Bird behavior observed included foraging, nesting, loafing, and flying over. Additional wildlife directly observed at the site includes leeches and crayfish in the stream channel. Further evidence of wildlife use includes observations of tracks, scat, bedding, and bird nests. Woody vegetation provides important usable habitat for wildlife and birds.

Credit Summary – Wetland acreage totaled 3.51-acres and has generated 23.84 Functional Units in 2023. This is a slight increase of 0.31 acres from 2022. Based on the 3.51 acres of delineated wetlands using the USACE credit ratios for creation and rehabilitation/secondary restoration, the site is currently receiving 3.04 USACE credit acres and 1.34 CSKT credit acres. Table 5 summarizes the estimated wetland credits based on USACE-approved credit ratios and the wetland delineation completed in June 2023. Credit acres calculated in 2023 exceed anticipated credit acres for both the USACE and CSKT.

Table 5. Expected USACE Functional Credits for US 93 Peterson Site for 2023.

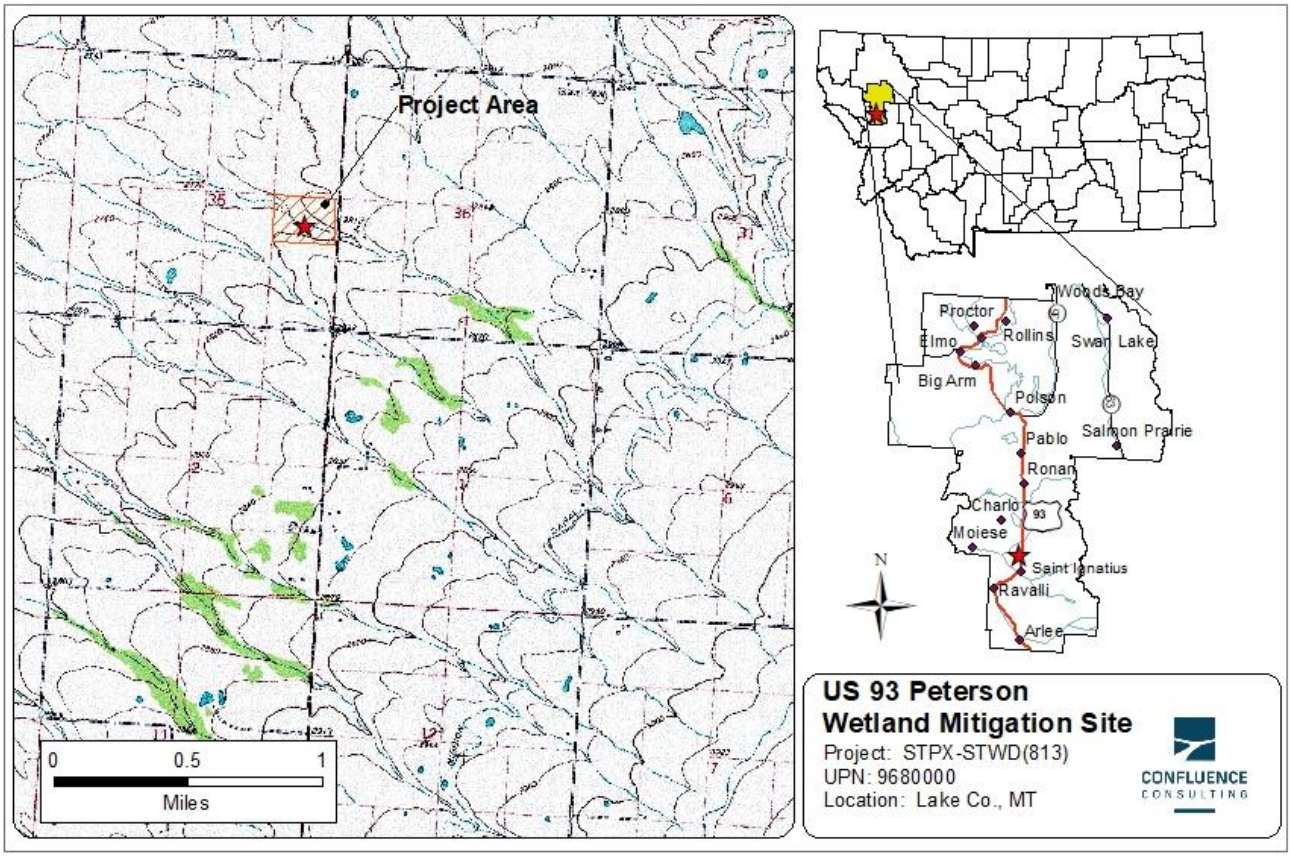
Compensatory Mitigation Type	2023 Delineated Acres	Mitigation Ratio		2023 Wetland Mitigation Credit Acres		MWAM Actual Points	2023 Functional Credits Generated
		USACE	CSKT	USACE	CSKT		
Creation	2.26	1:1	3.36:1	2.26	0.67	7.85	17.74
Rehabilitation/Secondary Restoration	1.25	1.61:1*	1.86:1	0.78	0.67	7.85	6.09
(Wetland Mitigation Credit Acres X MWAM Actual Points**							23.84

*Corrected enhancement ratio implemented in 2014.

**Functional Credits are calculated based on the USACE Mitigation Credit Acres and do not include CSKT Credit Acres.

Maps, Plans, Photos

Figure # 1: Site Location Map



Project Area Maps/Figures: See Appendix A (Figure 2 – Monitoring Activity Locations, Figure 3 – Mapped Site Features and Figure 4 – Wetland Delineation).

Data Forms: See Appendix B (Site Monitoring form, USACE data forms, and MWAM forms).

Tables: See Appendix B (Comprehensive Vegetation Species List, Table B-1).

Photos: See Appendix C.

Plans: See Appendix D of 2020 US 93 N Peterson Wetland Monitoring Report found at this website: https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

Conclusions

Based on the results of the fifteenth year of monitoring, the mitigation site has developed into a diverse emergent wetland with a scrub shrub component. The site is meeting the following performance standards in 2023: the construction of 12 log crib structures and earthen berms and the planting of shrubs and herbaceous plugs within the wetland fringe. However, the site has not developed into the target Bebb's Willow habitat type. At the 2023 site visit, none of the three crib structures installed in May 2020 were functioning as intended. These structures require repair to operate effectively and expand wetland habitat. The slope wetlands north and south of the main channel have continued to recede. However, this decrease in wetland acreage was offset in 2023 by the newly activated wetland at the west project boundary where adjacent irrigation is spreading groundwater laterally and supplying wetland development at the site, resulting in a net increase of wetland acreage. Both the USACE and CSKT mitigation credits outlined in the 2008 mitigation plan have been reached and exceeded.

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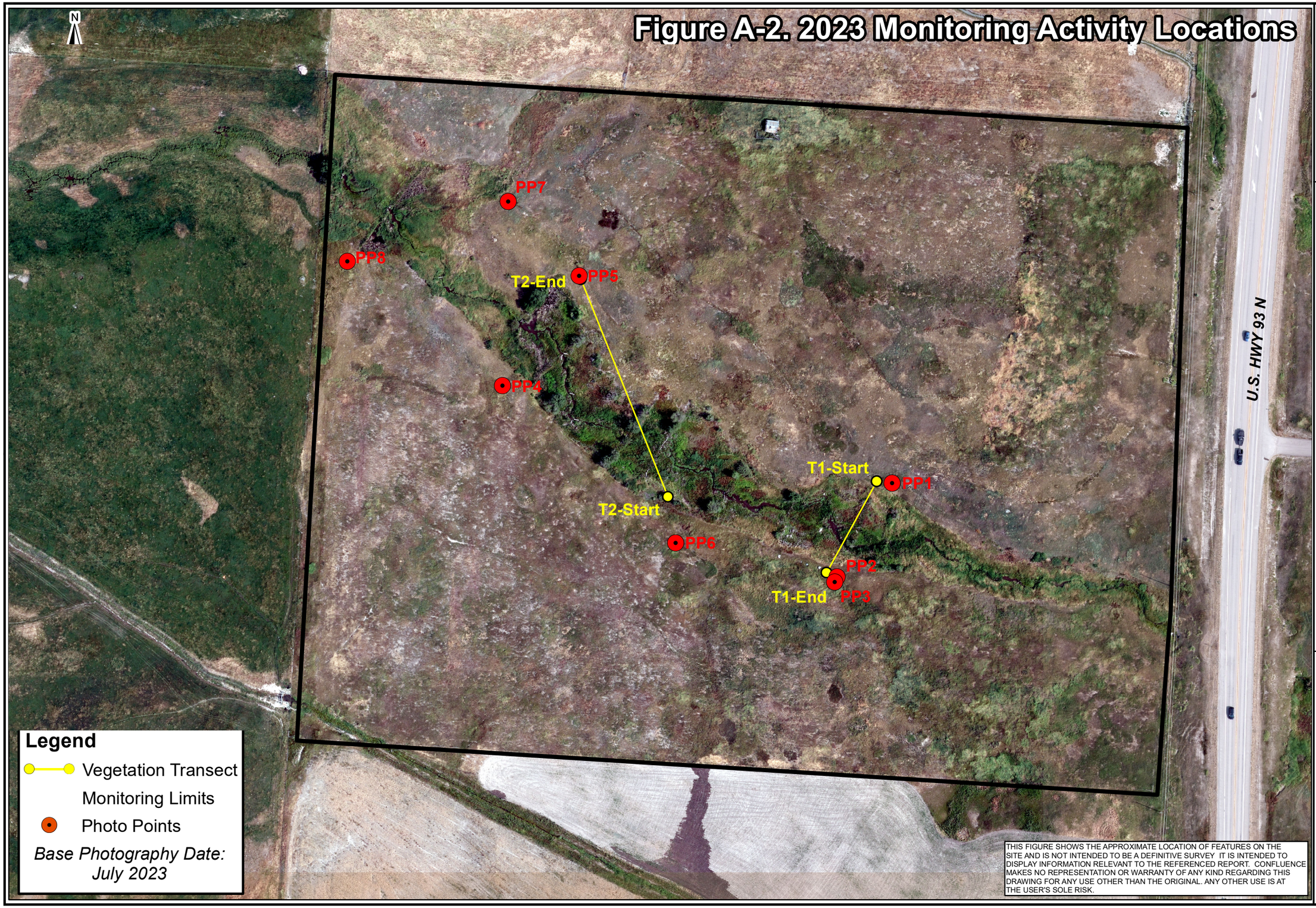
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APPENDIX A
PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring
US 93 Peterson
Lake County, Montana

Figure A-2. 2023 Monitoring Activity Locations



Legend

- Vegetation Transect
- Monitoring Limits
- Photo Points

Base Photography Date: July 2023

THIS FIGURE SHOWS THE APPROXIMATE LOCATION OF FEATURES ON THE SITE AND IS NOT INTENDED TO BE A DEFINITIVE SURVEY IT IS INTENDED TO DISPLAY INFORMATION RELEVANT TO THE REFERENCED REPORT. CONFLUENCE MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND REGARDING THIS DRAWING FOR ANY USE OTHER THAN THE ORIGINAL. ANY OTHER USE IS AT THE USER'S SOLE RISK.

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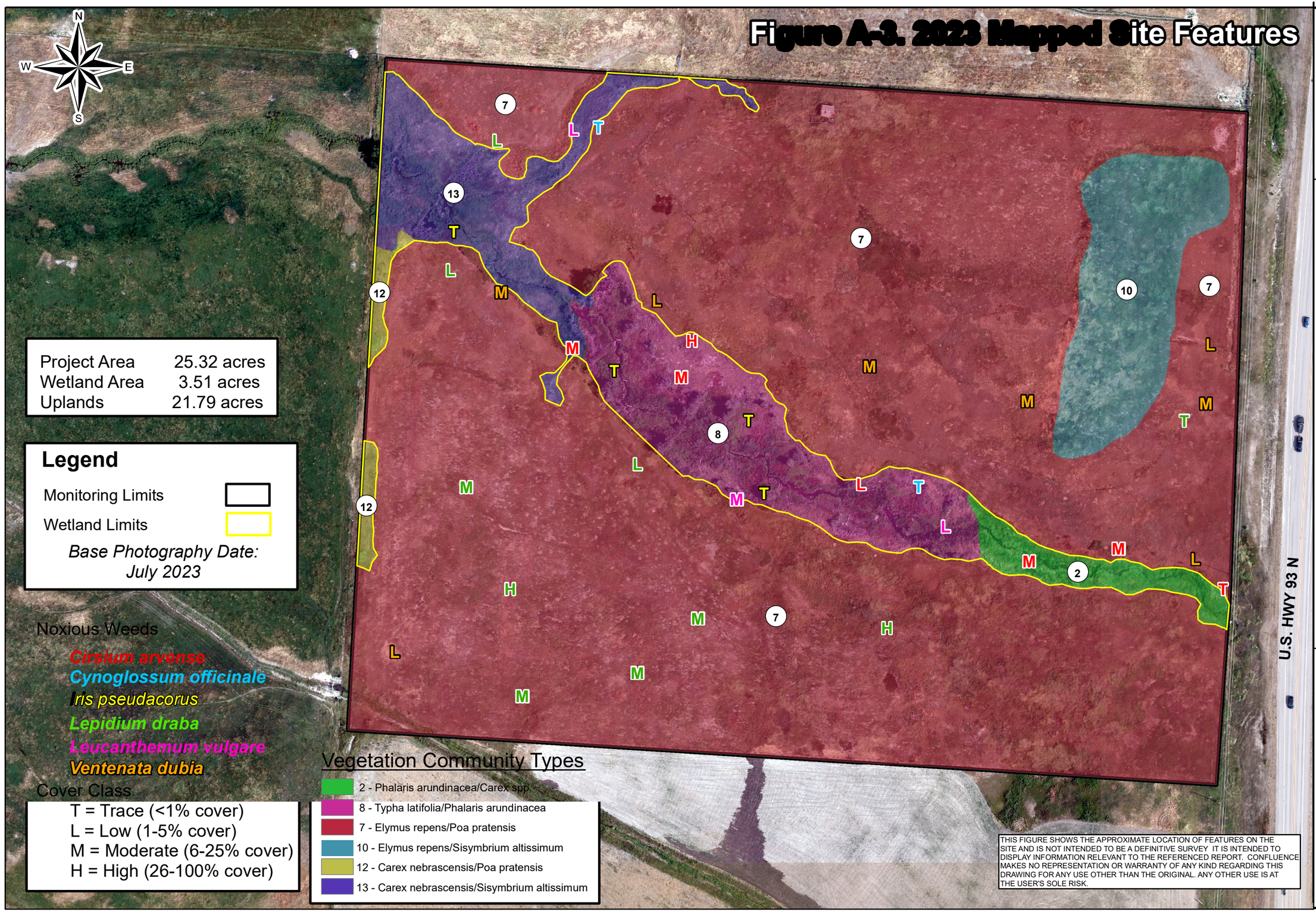
US-93 Peterson Mitigation Site
2023 Monitoring Activity Locations

0 60 120 240 360 480 600 Feet

Project:	STPX-STWD(813)
Location:	Lake Co., Montana
Map Creation Date:	August 2023
Project Manager:	R. McEldowney
Drawn By:	S. Weyant

File: X:\Project\MDT Wetland Mitigation 2\Mains\US93 N Peterson\2023\Monitor2023_MDT.mxd

Figure A-3. 2023 Mapped Site Features



Project Area	25.32 acres
Wetland Area	3.51 acres
Uplands	21.79 acres

Legend

Monitoring Limits

Wetland Limits

Base Photography Date: July 2023

Noxious Weeds

- *Cirsium arvense*
- *Cynoglossum officinale*
- *Iris pseudacorus*
- *Lepidium draba*
- *Leucanthemum vulgare*
- *Ventenata dubia*

Cover Class

T = Trace (<1% cover)
L = Low (1-5% cover)
M = Moderate (6-25% cover)
H = High (26-100% cover)

Vegetation Community Types

- 2 - Phalaris arundinacea/Carex spp
- 8 - Typha latifolia/Phalaris arundinacea
- 7 - Elymus repens/Poa pratensis
- 10 - Elymus repens/Sisymbrium altissimum
- 12 - Carex nebrascensis/Poa pratensis
- 13 - Carex nebrascensis/Sisymbrium altissimum

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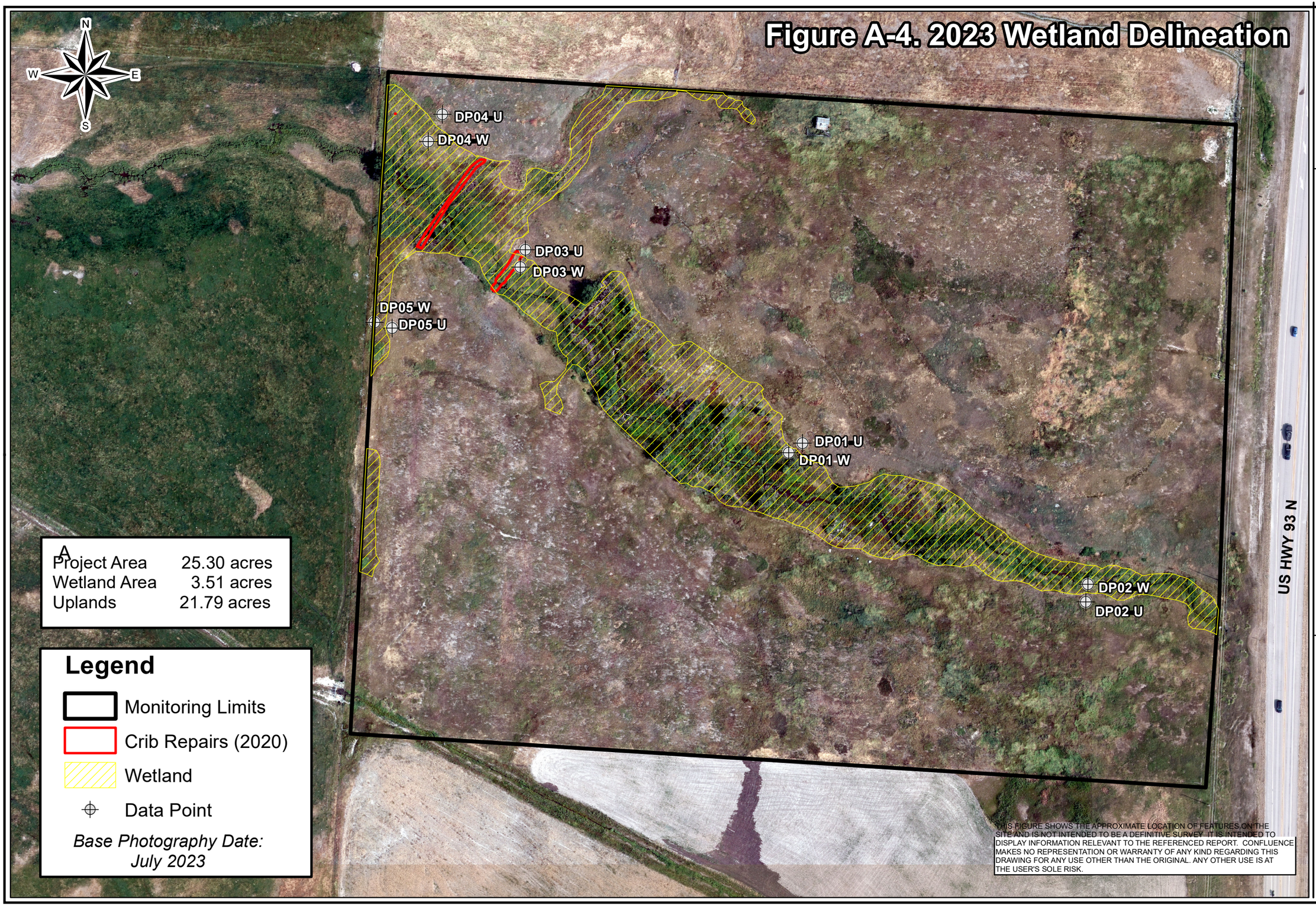
US-93 Peterson Mitigation Site
2023 Mapped Site Features

0 75 150 300 450 600 Feet

Project: STPX-STWD(813)
Location: Lake Co., Montana
Map Creation Date: December 2023
Project Manager: R. McEldowney
Drawn By: S. Weyant

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Figure A-4. 2023 Wetland Delineation



A	
Project Area	25.30 acres
Wetland Area	3.51 acres
Uplands	21.79 acres

Legend

- Monitoring Limits
- Crib Repairs (2020)
- Wetland
- Data Point

Base Photography Date: July 2023

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US-93 Peterson Mitigation Site
2023 Wetland Delineation

0 75 150 300 450 600 Feet

Project: STPX-STWD(813)
Location: Lake Co., Montana
Map Creation Date: September 2023
Project Manager: R. McEldowney
Drawn By: S. Weyant

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APPENDIX B
MONITORING FORMS

MDT Wetland Mitigation Monitoring
US 93 Peterson
Lake County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: US 93 Peterson Assessment Date/Time 6/21/2023

Person(s) conducting the assessment: S Weyant

Weather: Clearly, partly cloudy, 75 degrees Location: St. Ignatius

MDT District: Missoula Milepost: 35.5

Legal Description: T 19N R 20W Section(s) 35

Initial Evaluation Date: 8/15/2008 Monitoring Year: 15 #Visits in Year: 1

Size of Evaluation Area: 25 (acres)

Land use surrounding wetland:

Residential & agriculture.

HYDROLOGY

Surface Water Source: Unnamed tributary to Post Creek; irrigation ditch diversion.

Inundation: ☑ Average Depth: 0.25 **(ft)** Range of Depths: 0-18 **(ft)**

Percent of assessment area under inundation: 15 %

Depth at emergent vegetation-open water boundary: 0 **(ft)**

If assessment area is not inundated then are the soils saturated within 12 inches of surface: Yes

Other evidence of hydrology on the site (ex. – drift lines, erosion, stained vegetation, etc:

Surface water, high water table, saturation, surface soil cracks, inundation visible on aerial imagery, hydrogen sulfide odor, geomorphic position, and a positive fac-neutral test.

Groundwater Monitoring Wells

Record depth of water surface below ground surface, in feet.

Additional Activities Checklist:

☐ Map emergent vegetation-open water boundary on aerial photograph.

☐ Observe extent of surface water during each site visit and look for evidence of past surface water elevations (drift lines, erosion, vegetation staining, etc.)

☐ Use GPS to survey groundwater monitoring well locations, if present.

Hydrology Notes:

Lake County, MT has experienced a string of drought conditions (abnormally dry to extreme drought) through the growing season since 2021. Hydrology to the slope wetlands appears to be decreasing and the wetland boundary in these areas has receded.

VEGETATION COMMUNITIES

Site US 93 Peterson

(Cover Class Codes **0** = < 1%, **1** = 1-5%, **2** = 6-10%, **3** = 11-20%, **4** = 21-50% , **5** = >50%)

Community # 2 **Community Type:** Phalaris arundinacea / Carex spp. **Acres:** 0.38

Species	Cover class	Species	Cover class
Alnus incana	1	Brassica juncea	2
Carex aquatilis	1	Carex lasiocarpa	1
Carex nebrascensis	1	Carex pachystachya	1
Carex pellita	2	Carex stipata	2
Cirsium arvense	0	Dipsacus fullonum	2
Eleocharis palustris	1	Epilobium ciliatum	2
Glyceria grandis	0	Juncus balticus	0
Juncus ensifolius	1	Juncus tenuis	1
Nasturtium officinale	2	Phalaris arundinacea	4
Poa palustris	0	Rosa woodsii	1
Schoenoplectus acutus	1	Scirpus microcarpus	1
Solanum dulcamara	2	Typha latifolia	3

Comments:

Wetland community type created in 2021 to represent the diversifying wetland areas mapped as the Phalaris arundinacea community. This WC is observed along the stream channel at the west and east ends of the mitigation site. Cover by Typha latifolia in 2023 has decreased at the upstream end of the mitigation site where inundation has also decreased in association with the failure of the crib structures to retain water.

Community # 7 **Community Type:** Elymus repens / Poa pratensis **Acres:** 20.46

Species	Cover class	Species	Cover class
Bare Ground	1	Brassica juncea	2
Bromus inermis	2	Bromus tectorum	1
Carex nebrascensis	2	Cirsium arvense	0
Dipsacus fullonum	1	Elymus repens	4
Elymus trachycaulus	0	Gallium aperine	0
Juncus balticus	0	Lactuca serriola	0
Lepidium campestre	1	Lepidium draba	1
Lepidium perfoliatum	2	Mentha arvensis	0
Pascopyrum smithii	2	Phalaris arundinacea	0
Poa pratensis	4	Rosa woodsii	0
Sisymbrium altissimum	1	Sonchus arvensis	1
Thlaspi arvense	0	Ventenata dubia	2

Comments:

Upland type surrounding the wetland assessment area. Ventenata dubia is increasing and spreading across the site within this community, particularly in disturbed and drier areas that appear to have been previously sprayed with herbicide.

Community # 8 **Community Type:** Typha latifolia / Phalaris arundinacea **Acres:** 1.77

Species	Cover class	Species	Cover class
Alnus incana	2	Bare Ground	0
Brassica juncea	2	Carex aquatilis	1
Carex nebrascensis	2	Carex stipata	0
Carex utriculata	2	Cirsium arvense	0
Cirsium vulgare	0	Cornus alba	1
Cynoglossum officinale	0	Dipsacus fullonum	1
Elymus repens	0	Epilobium ciliatum	2
Geum macrophyllum	2	Glyceria grandis	0
Hesperis matronalis	0	Iris pseudacorus	0
Lemna minor	0	Leucanthemum vulgare	1
Mentha arvensis	1	Myosotis laxa	2
Nasturtium microphyllum	2	Nasturtium officinale	3
Nepeta cataria	1	Open Water	0
Persicaria amphibia	1	Phalaris arundinacea	4
Poa palustris	1	Poa pratensis	1
Rosa woodsii	1	Salix exigua	1
Sisymbrium altissimum	0	Solanum dulcamara	2
Sonchus arvensis	0	Thlaspi arvense	2
Typha latifolia	3	Veronica americana	0

Comments:

Wetland type present along the stream channel in the central portion of the mitigation site. The density of cattail stands were observed to have decreased in 2023.

Community # 10 **Community Type:** Elymus repens / Sisymbrium altissimum **Acres:** 1.35

Species	Cover class	Species	Cover class
Brassica juncea	1	Bromus inermis	1
Cirsium vulgare	0	Elymus repens	5
Lepidium perfoliatum	2	Sisymbrium altissimum	4
Thlaspi arvense	0		

Comments:

Upland community type in northeast quandrant of site.

Community # 12 **Community Type:** Carex nebrascensis / Poa pratensis **Acres:** 0.16

Species	Cover class	Species	Cover class
Brassica juncea	2	Carex nebrascensis	5
Carex stipata	1	Elymus repens	2
Glyceria grandis	1	Juncus tenuis	1
Pascopyrum smithii	1	Poa palustris	1
Poa pratensis	3	Typha latifolia	1

Comments:

WT replaced in 2021 with WT 13. This community is now present along the west boundary of the mitigation site where irrigation in the adjacent pasture is overflowing to support wetland development on the hillside.

Community # 13 **Community Type:** Carex nebrascensis / Nasturtium officinale **Acres:** 1.2

Species	Cover class	Species	Cover class
Alyssum alyssoides	1	Brassica juncea	3
Carduus nutans	0	Carex nebrascensis	5
Carex stipata	1	Cynoglossum officinale	1
Dipsacus fullonum	1	Elymus repens	0
Gallium aperine	1	Glyceria grandis	0
Lactuca serriola	1	Lepidium draba	1
Leucanthemum vulgare	1	Nasturtium officinale	3
Pascopyrum smithii	0	Phalaris arundinacea	2
Poa pratensis	2	Sisymbrium altissimum	1
Thlaspi arvense	2	Typha latifolia	1

Comments:

Wetland type 13 was created in 2021 to represent the vegetation community in the slope wetland at the north portion of the site previously mapped as WT 12. This area has a large component of weedy, annual species rated UPL and FACU that are spreading throughout.

Total Vegetation Community Acreage **25.32**

VEGETATION TRANSECTS

Site: US 93 Peterson Date: 6/21/2023

Transect Number: 1 **Compass Direction from Start:** 210

Interval Data:

Ending Station 13 Community Type: Elymus repens / Poa pratensis

Species	Cover class	Species	Cover class
Bare Ground	2	Brassica juncea	1
Dipsacus fullonum	1	Elymus repens	4
Gallium aperine	1	Pascopyrum smithii	1
Poa pratensis	2	Ventenata dubia	1

Ending Station 133 Community Type: Typha latifolia / Phalaris arundinacea

Species	Cover class	Species	Cover class
Alnus incana	0	Bare Ground	1
Brassica juncea	4	Carex nebrascensis	1
Carex stipata	1	Carex utriculata	1
Cynoglossum officinale	0	Dipsacus fullonum	2
Epilobium ciliatum	2	Geum macrophyllum	0
Hesperis matronalis	1	Myosotis laxa	3
Nasturtium microphyllum	2	Open Water	1
Phalaris arundinacea	3	Poa pratensis	0
Rosa woodsii	0	Sisymbrium altissimum	0
Solanum dulcamara	1	Thlaspi arvense	1
Typha latifolia	2	Veronica americana	1

Ending Station 144 Community Type: Elymus repens / Poa pratensis

Species	Cover class	Species	Cover class
Elymus trachycaulus	3	Lactuca serriola	0
Poa pratensis	4	Thlaspi arvense	0

Transect Notes:

The wetland vegetation community (WC 8) is dominated by weedy, annual species (field pennycress, brown mustard) in the wetland areas away from the active channel.

Transect Number: 2 **Compass Direction from Start:** 340

Interval Data:

Ending Station 255 Community Type: Typha latifolia / Phalaris arundinacea

Species	Cover class	Species	Cover class
Alnus incana	1	Brassica juncea	3
Carex nebrascensis	1	Cirsium arvense	0
Dipsacus fullonum	2	Elymus repens	0
Epilobium ciliatum	3	Geum macrophyllum	2
Glyceria grandis	0	Iris pseudacorus	0
Leucanthemum vulgare	1	Mentha arvensis	0
Myosotis laxa	3	Nasturtium officinale	3
Nepeta cataria	0	Persicaria amphibia	0
Phalaris arundinacea	0	Poa palustris	0
Rosa woodsii	0	Solanum dulcamara	1
Sonchus arvensis	1	Thlaspi arvense	2
Typha latifolia	3	Veronica americana	1

Ending Station 325 Community Type: Elymus repens / Poa pratensis

Species	Cover class	Species	Cover class
Bare Ground	1	Bromus tectorum	0
Carex nebrascensis	0	Lactuca serriola	0
Pascopyrum smithii	3	Poa pratensis	5
Sisymbrium altissimum	1	Thlaspi arvense	1
Ventenata dubia	1		

Transect Notes:

Transect spans channel in WT 8.

PLANTED WOODY VEGETATION SURVIVAL

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Planting Type	#Planted	#Alive	Notes
Alnus incana	1163		
Betula occidentalis	817		
Cornus alba	408		
Crataegus douglasii			
Ribes hudsonianum	245		
Rosa woodsii	450		
Salix exigua	408		

Comments

No planted woody vegetation survival was assessed during 2020-2023 monitoring events. Woody plants were evaluated based on ocular observation. Alnus incana has the highest woody plant density, but appears stunted (thin foliage, bare branches, some basal regrowth). Rosa woodsii and Cornus alba are present along the wetland/upland boundary, and Salix exigua plantings and volunteers are observed in WT 8. Overall, woody vegetation provides important wildlife habitat and structural diversity at this site.

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WILDLIFE

Birds

Were man-made nesting structures installed? No

If yes, type of structure: _____

How many? _____

Are the nesting structures being used? No

Do the nesting structures need repairs? No

Nesting Structure Comments:

Species	#Observed	Behavior	Habitat
American Crow	1	FO	
Common Yellowthroat	3	L, FO	
European Starling	25	FO	
Mourning Dove	1	L	
Red-tailed Hawk	1	FO	
Red-winged Blackbird	15	FO, L, F	
Ring-billed Gull	5	FO	
Turkey Vulture	7	FO	

Bird Comments

Observed owl pellets, feathers, and birds nests in shrubs.

BEHAVIOR CODES

BP = One of a breeding pair **BD** = Breeding display **F** = Foraging **FO** = Flyover **L** = Loafing **N** = Nesting

HABITAT CODES

AB = Aquatic bed **SS** = Scrub/Shrub **FO** = Forested **UP** = Upland buffer **I** = Island

WM = Wet meadow **MA** = Marsh **US** = Unconsolidated shore **MF** = Mud Flat **OW** = Open Water

Mammals and Herptiles

Species	# Observed	Tracks	Scat	Burrows	Comments
Crayfish	4	No	No	No	Unidentified crayfish observed in channel.
Leech	2	No	No	No	Unidentified leech sp. observed in channel.

Wildlife Comments:

Sightings, tracks, and scat indicate wildlife presence. Minnows observed in channel in 2021 and 2022.

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PHOTOGRAPHS

Take photographs of the following permanent reference points listed in the check list below. Record the direction of the photograph using a compass. When at the site for the first time, establish a permanent reference point by setting a ½ inch rebar or fencepost extending 2-3 feet above ground. Survey the location with a resource grade GPS and mark the location on the aerial photograph.

Photograph Checklist:

☐ One photograph for each of the four cardinal directions surrounding the wetland.

☐ At least one photograph showing upland use surrounding the wetland. If more than one upland exists then take additional photographs.

☐ At least one photograph showing the buffer surrounding the wetland.

☐ One photograph from each end of the vegetation transect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description
DP01u	47.361646	-114.099637		Upland data point
DP01w	47.361606	-114.099712		Wetland data point
DP02u	47.361104	-114.097994		Upland data point
DP02w	47.361171	-114.097988		Wetland data point
DP03u	47.362321	-114.101259		Upland data point
DP03w	47.362254	-114.101282		Wetland data point
DP04u	47.36282	-114.101771		Upland data point
DP04w	47.362713	-114.101841		Wetland data point
DP05u	47.361993	-114.101981		Upland data point
DP05w	47.362011	-114.102083		Wetland data point
PP1	47.361538	-114.098828	175	Photo point 1: Photo 1.
PP2-1	47.361169	-114.099105	35	Photo point 2: Photo 1.
PP2-2	47.361169	-114.099105	110	Photo point 2: Photo 2.
PP3	47.36115	-114.099117	45	Photo point 3.
PP4	47.361821	-114.101036	30	Photo point 4.
PP5	47.362254	-114.100645	175	Photo point 5.
PP6	47.361263	-114.100017	315	Photo point 6.
PP7-1	47.362521	-114.101066	5	Photo point 7: Photo 1.
PP7-2	47.362521	-114.101066	267	Photo point 7: Photo 2.
PP8	47.362257	-114.101944	34	Photo point 8.
T1-End	47.361169	-114.099105	45	Photo point 2. T-1 End.
T1-Start	47.361538	-114.098828	215	Photo point 1. T-1 Start.
T2-End	47.362242	-114.100633	315	Photo point 5. T-2 End.
T2-Start	47.361435	-114.100076	135	Transect 2 start.

Comments:

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ADDITIONAL ITEMS CHECKLIST

Hydrology

☐ Map emergent vegetation/open water boundary on aerial photos.
☐ Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift lines, vegetation staining, erosion, etc).

Photos

☐ One photo from the wetland toward each of the four cardinal directions
☐ One photo showing upland use surrounding the wetland.
☐ One photo showing the buffer around the wetland
☐ One photo from each end of each vegetation transect, toward the transect

Vegetation

☑ Map vegetation community boundaries

☑ Complete Vegetation Transects

Soils

☑ Assess soils

Wetland Delineations

☑ Delineate wetlands according to applicable USACE protocol (1987 form or Supplement)
☑ Delineate wetland – upland boundary onto aerial photograph.

Wetland Delineation Comments

Wetland acreage increased 0.04-acres in 2023 to a total delineated acreage of 3.51-acres.

Functional Assessments

☑ Complete and attach full MDT Montana Wetland Assessment Method field forms.

Functional Assessment Comments:

The Assessment Area (AA) is rated as a Category II Wetland.

Maintenance

Were man-made nesting structure installed at this site? No

If yes, do they need to be repaired?

If yes, describe the problems below and indicate if any actions were taken to remedy the problems

Were man-made structures built or installed to impound water or control water flow

into or out of the wetland? Yes

If yes, are the structures in need of repair? Yes

If yes, describe the problems below.

The second wire from the top of fence at the entry gate has again been cut and needs repair. Crib repairs in 2020 are failing - water in the channel was observed flowing under, rather than over the cribs. Undercutting was observed at two structures.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-21

Applicant/Owner: MDT State: Montana Sampling Point: DP01u

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Undulating Slope (%): 10

Subregion (LRR): E 44 Lat: 47.361639 Long: -114.099624 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: Not mapped

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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Upland sample point on toe slope adjacent to DP01w. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	75	✔	FAC
2. Carex nebrascensis	15		OBL
3. Brassica juncea	4		UPL
4. Elymus repens	2		FAC
5. Thlaspi arvense	1		UPL
6. Juncus balticus	1		FACW
7. Sisymbrium altissimum	1		FACU
8. Lactuca serriola	1		FACU
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	1	x 2 =	2
FAC species	77	x 3 =	231
FACU species	2	x 4 =	8
UPL species	5	x 5 =	25
Column Totals:	100 (A)		281 (B)

Prevalence Index = B/A = 2.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Although hydrophytic vegetation was observed, the data point lacked evidence of hydric soil development and is not supported by wetland hydrology (1987 COE Wetland Delineation Manual).

SOIL

Sampling Point: DP01u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 2	7.5YR 2.5/1	100					Loam	Many fine roots
2 - 10	7.5YR 2.5/1	100					Loam	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 10

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

No evidence of wetland hydrology observed. Soils bone dry.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-21

Applicant/Owner: MDT State: Montana Sampling Point: DP01w

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Stream Channel Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR): E 44 Lat: 47.361599 Long: -114.099699 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: Not mapped

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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

PEM, riverine wetland with scrub shrub component. Sample point in north central portion of wetland. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Salix exigua	10	✔	FACW
2. Alnus incana	3	✔	FACW
3.			
4.			
5.			
	13 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Persicaria maculosa	45	✔	FACW
2. Carex stipata	20	✔	OBL
3. Phalaris arundinacea	10		FACW
4. Typha latifolia	5		OBL
5. Brassica juncea	4		UPL
6. Nasturtium officinale	2		OBL
7. Carex bebbii	2		OBL
8. Glyceria grandis	1		OBL
9. Leucanthemum vulgare	1		FACU
10.			
11.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	68	x 2 =	136
FAC species	0	x 3 =	0
FACU species	1	x 4 =	4
UPL species	4	x 5 =	20
Column Totals:	103 (A)		190 (B)

Prevalence Index = B/A = 1.84

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP01w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 11	10YR 2/2	100					Clay Loam	
11 - 14	10YR 5/1	88	10YR 6/8	5	C	M	Clay	Gravelly
11 - 14			5Y 5/1	7	D	M		
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✔ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Prominent redoximorphic concentrations common within the depleted matrix.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

Evidence of wetland hydrology includes a positive fac-neutral test and geomorphic position.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-21

Applicant/Owner: MDT State: Montana Sampling Point: DP02u

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 44 Lat: 47.361097 Long: -114.097981 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: Not mapped

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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample point in southeast corner of the site. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Bromus inermis	70	✔	UPL
2. Elymus repens	20	✔	FAC
3. Lepidium draba	4		UPL
4. Thlaspi arvense	3		UPL
5. Brassica juncea	2		UPL
6. Lactuca serriola	1		FACU
7.			
8.			
9.			
10.			
11.			
	100	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	1	x 4 =	4
UPL species	79	x 5 =	395
Column Totals:	100 (A)		459 (B)

Prevalence Index = B/A = 4.59

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Data point is dominated by upland vegetation.

SOIL

Sampling Point: DP02u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 16	10YR 2/2	100					Silt Loam	
-								
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

No evidence of wetland hydrology observed. Soils bone dry.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-21

Applicant/Owner: MDT State: Montana Sampling Point: DP02w

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Fringe Local relief (concave, convex, none): None Slope (%): 3

Subregion (LRR): E 44 Lat: 47.361165 Long: -114.097975 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: PEM1C

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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

PEM, riverine wetland. Sample point located approximately 6" from active channel. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	85	✔	FACW
2. Solanum dulcamara	4		FAC
3. Brassica juncea	1		UPL
4. Carex stipata	1		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	85	x 2 =	170
FAC species	4	x 3 =	12
FACU species	0	x 4 =	0
UPL species	1	x 5 =	5
Column Totals:	91 (A)		188 (B)

Prevalence Index = B/A = 2.07

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Evidence of wetland hydrology includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP02w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 5	10YR 4/1	100					Mucky Peat	Mucky peat + mineral
5 - 12	5Y 2.5/1	100					Clay Loam	Sulfidic odor
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ✔ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Evidence of hydric soil includes sulfidic odor.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ✔ No ___ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Evidence of wetland hydrology includes saturation to the soil surface, high water table, sulfidic odor, a positive fac-neutral test, and geomorphic position.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-22

Applicant/Owner: MDT State: Montana Sampling Point: DP03u

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 44 Lat: 47.362315 Long: -114.101246 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: PEM1C

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 ✔	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Upland sample point located adjacent to log crib structed installed in 2020. Area was previously delineated as wetland and is no longer supported by wetland hydrology. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1. Rosa woodsii	5	✔	FACU
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	27	✔	FACW
2. Pascopyrum smithii	25	✔	FACU
3. Elymus repens	15		FAC
4. Carex nebrascensis	8		OBL
5. Brassica juncea	5		UPL
6. Schedonorus pratensis	3		FACU
7. Carex pachystachya	2		FAC
8. Cirsium arvense	2		FAC
9. Plantago lanceolata	1		FACU
10. Poa pratensis	1		FAC
11. Leucanthemum vulgare	1		FACU
	90	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	8	x 1 =	8
FACW species	27	x 2 =	54
FAC species	20	x 3 =	60
FACU species	35	x 4 =	140
UPL species	5	x 5 =	25
Column Totals:	95 (A)		287 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ____ No ✔

Remarks:

Data point includes hydrophytic and upland rated plant species. No hydrophytic vegetation indicators present.

SOIL

Sampling Point: DP03u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 7	10YR 2/2	100					Clay Loam	
-								
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 7

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators present.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

No evidence of wetland hydrology observed. Soil is bone dry.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-22

Applicant/Owner: MDT State: Montana Sampling Point: DP03w

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 44 Lat: 47.362248 Long: -114.101268 Datum: NAD 83

Soil Map Unit Name: 22 - Colake silt loam, 0 to 1 percent slopes NWI classification: PEM1C

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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

PEM, riverine wetland. Sample point is located upstream of the upstream-most log crib structure installed in 2020. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft r)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	60	✔	FACW
2. Carex stipata	28	✔	OBL
3. Brassica juncea	3		UPL
4. Poa pratensis	2		FAC
5. Poa palustris	1		FAC
6. Leucanthemum vulgare	1		FACU
7. Cirsium arvense	1		FAC
8. Elymus repens	1		FAC
9. Gallium aperine	1		FACU
10.			
11.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 2

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	28	x 1 =	28
FACW species	60	x 2 =	120
FAC species	5	x 3 =	15
FACU species	2	x 4 =	8
UPL species	3	x 5 =	15
Column Totals:	98 (A)		186 (B)

Prevalence Index = B/A = 1.90

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP03w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 10	10YR 2/1	100					Clay Loam	
10 - 24	2.5Y 3/2	95	10YR 5/2	5	D	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ✔ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Distinct redoximorphic concentrations common within the depleted matrix.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

Evidence of wetland hydrology includes a positive fac-neutral test and geomorphic position. Soils slightly moist.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-22

Applicant/Owner: MDT State: Montana Sampling Point: DP04u

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 25

Subregion (LRR): E 44 Lat: 47.362814 Long: -114.101757 Datum: NAD 83

Soil Map Unit Name: 143 - Ronan silty clay loam, 4 to 8 percent slopes NWI classification: Not mapped

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 ✔	**Is the Sampled Area within a Wetland?** Yes _____ No ✔
Hydric Soil Present?	Yes _____	No ✔	
Wetland Hydrology Present?	Yes _____	No ✔	

Remarks:

Upland sample point is located on hillside and located approximately 2.5' higher in elevation than DP04w. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Bromus inermis	45	✔	UPL
2. Gallium aperine	15	✔	FACU
3. Lepidium draba	10		UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 30

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	15	x 4 =	60
UPL species	55	x 5 =	275
Column Totals:	70 (A)		335 (B)

Prevalence Index = B/A = 4.79

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ✔

Remarks:

Data point is dominated by upland vegetation.

SOIL

Sampling Point: DP04u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 6	10YR 3/1	100					Clay Loam	
6 - 12	10YR 3/1	100					Clay	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 12

Hydric Soil Present? Yes _____ No ✔

Remarks:

No hydric soil indicators observed.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

No evidence of wetland hydrology observed. Soils dry.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-22

Applicant/Owner: MDT State: Montana Sampling Point: DP04w

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Valley Floor Local relief (concave, convex, none): Linear Slope (%): 0

Subregion (LRR): E 44 Lat: 47.362707 Long: -114.101827 Datum: NAD 83

Soil Map Unit Name: 143 - Ronan silty clay loam, 4 to 8 percent slopes NWI classification: PEM1C

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 ____	**Is the Sampled Area within a Wetland?** Yes ✔ No ____
Hydric Soil Present?	Yes ✔	No ____	
Wetland Hydrology Present?	Yes ✔	No ____	

Remarks:

PEM, riverine wetland. Sample point approximately 30' north of stream channel. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 5 ft r)			
1. Phalaris arundinacea	70	✔	FACW
2. Brassica juncea	4		UPL
3. Geum macrophyllum	1		FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 25

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	1	x 3 =	3
FACU species	0	x 4 =	0
UPL species	4	x 5 =	20
Column Totals:	75 (A)		163 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

✔ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Evidence of hydrophytic vegetation includes a positive rapid test, a positive dominance test, and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP04w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0 - 6	10YR 3/2	100					Clay Loam	
6 - 12	10YR 3/1	97	10YR 5/8	3	C	M	Clay Loam	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Bedrock

Depth (inches): 12

Hydric Soil Present? Yes ✔ No ___

Remarks:

Prominent redoximorphic concentrations common within the matrix.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✔ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

Evidence of wetland hydrology includes a positive fac-neutral test and geomorphic position. Soil is moist.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-23

Applicant/Owner: MDT State: Montana Sampling Point: DP05u

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Undulating Slope (%): 30

Subregion (LRR): E 44 Lat: 47.361986 Long: -114.101968 Datum: NAD 83

Soil Map Unit Name: 143 - Ronan silty clay loam, 4 to 8 percent slopes NWI classification: Not mapped

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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✔
Hydric Soil Present?	Yes ____	No ✔	
Wetland Hydrology Present?	Yes ____	No ✔	

Remarks:

Upland sample point on hillside in northwest portion of site. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Poa pratensis	80	✔	FAC
2. Elymus repens	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 13

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		255 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No ____

Remarks:

Vegetation at the data point is comprised of the FAC rated species creeping wild rye and Kentucky bluegrass.

SOIL

Sampling Point: DP05u

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 7	7.5YR 3/2	100					Clay Loam	
7 - 16	10YR 3/1	100					Clay Loam	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✔

Remarks:

Soil is very compacted. Soil horizon has few clay pockets with relict mottles (10YR 5/3).

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

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:

No evidence of wetland hydrology observed. Soil is bone dry.

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

Project/Site: US93 N Peterson City/County: Lake County Sampling Date: 2023-06-23

Applicant/Owner: MDT State: Montana Sampling Point: DP05w

Investigator(s): S Weyant Section, Township, Range: S35 T19N R20W

Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): Undulating Slope (%): 30

Subregion (LRR): E 44 Lat: 47.362004 Long: -114.10207 Datum: NAD 83

Soil Map Unit Name: 143 - Ronan silty clay loam, 4 to 8 percent slopes NWI classification: Not mapped

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 _____	**Is the Sampled Area within a Wetland?** Yes ✔ No _____
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:

PEM, slope wetland. This area is receiving groundwater from the irrigated pasture west and adjacent to the site. Hydrologic conditions on the site are atypical. The U.S. Drought Monitor Index for Lake County, MT during the site visit is D1 (moderate drought).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft r)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft r)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5 ft r)			
1. Carex nebrascensis	45	✔	OBL
2. Poa pratensis	30	✔	FAC
3. Brassica juncea	7		UPL
4. Juncus tenuis	5		FAC
5. Poa palustris	3		FAC
6. Elymus repens	1		FAC
7.			
8.			
9.			
10.			
11.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 9

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	0	x 2 =	0
FAC species	39	x 3 =	117
FACU species	0	x 4 =	0
UPL species	7	x 5 =	35
Column Totals:	91 (A)		197 (B)

Prevalence Index = B/A = 2.16

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✔ 2 - Dominance Test is >50%

✔ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ✔ No _____

Remarks:

Evidence of hydrophytic vegetation includes a positive dominance test and a prevalence index less than or equal to 3.0.

SOIL

Sampling Point: DP05w

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0 - 7	7.5YR 2.5/1	100					Silty Clay Loam	
7 - 16	2.5Y 3/2	90	10YR 5/1	10	D	M	Silty Clay Loam	
-								
-								
-								
-								
-								
-								

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

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

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1) (**except MLRA 1**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✔ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✔ No ___

Remarks:

Distinct redoximorphic depletions common within the matrix.

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)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Vis ble 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 along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9) (**MLRA 1, 2, 4A, and 4B**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ___ Raised Ant Mounds (D6) (**LRR A**)
- ___ Frost-Heave Hummocks (D7)

Field Observations:

Surface Water Present? Yes ___ No ✔ Depth (inches): _____

Water Table Present? Yes ✔ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ✔ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✔ No ___

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

Remarks:

Evidence of wetland hydrology includes saturation to the soil surface, high water table, and a positive fac-neutral test.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: US 93 Peterson **2. MDT Project #:** NH-5-2(122)31 **Control #:** 9680000

3. Evaluation Date: 06/22/2023 **4. Evaluator(s):** S Weyant **5. Wetlands/Site #(s):** AA-1

6. Wetland Location(s): i. Legal: T19N,R20W,35 **Latitude/Longitude:** 47.361687, -114.099664 : Centroid of

ii. Approx. Stationing or Mileposts: RP 35.5 US 93 North

iii. Watershed: 4

Watershed Name, County: Flathead, Lake

7. a. Evaluating Agency: CCI - MDT

b. Purpose of Evaluation:

1. ___ Wetlands potentially affected by MDT project
2. ___ Mitigation wetlands; pre-construction
3. X Mitigation wetlands; post-construction
4. ___ Other:

8. Wetland size: 3.510 acres (measured)

9. Assessment area (AA): 3.510 acres (measured)

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
R	EM	I	PP	84.00
S	EM	I	SI	6.00
R	SS	I	PP	10.00

Abbreviations: *(see manual for definitions)*

HGM Classes: Riverine (**R**), Depressional (**D**), Slope (**S**), Mineral Soil Flats (**MSF**), Organic Soil Flats (**OSF**), Lacustrine Fringe (**LF**);

Cowardin Classes: Rock Bottom (**RB**), Unconsolidated bottom (**UB**), Aquatic Bed (**AB**), Unconsolidated Shore (**US**), Moss-lichen Wetland (**ML**), Emergent Wetland (**EM**), Scrub-Shrub Wetland (**SS**), Forested Wetland (**FO**)

Modifiers: Excavated (**E**), Impounded (**I**), Diked (**D**), Partly Drained (**PD**), Farmed (**F**), Artificial (**A**)

Water Regimes: Permanent / Perennial (**PP**), Seasonal / Intermittent (**SI**), Temporary / Ephemeral (**TE**)

11. Estimated relative abundance: (of similarly classified sites within the same Major Montana Watershed Basin, see definitions)

COMMON

12. General condition of AA:

i. Disturbance: (use matrix below to determine [circle] appropriate response – see instructions for Montana-listed noxious weed and aquatic nuisance vegetation species (**ANVS**) list)

Conditions within AA	*Predominant conditions adjacent to (within 500 feet of) AA*		
	Managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or buildings; and noxious weed or ANVS cover is >=15%.	Land not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to minor clearing; contains few roads or buildings; noxious weed or ANVS cover is <= 30%.	Land cultivated or heavily grazed or logged; subject to substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.
AA occurs and is managed in predominantly natural state; is not grazed, hayed, logged, or otherwise converted; does not contain roads or occupied buildings; and noxious weed or ANVS cover is <= 15%.	low disturbance	**low disturbance**	moderate disturbance
AA not cultivated, but may be moderately grazed or hayed or selectively logged; or has been subject to relatively minor clearing, fill placement, or hydrological alteration; contains few roads or buildings; noxious weed or ANVS cover is <=	moderate disturbance	moderate disturbance	high disturbance
AA cultivated or heavily grazed or logged; subject to relatively substantial fill placement, grading, clearing, or hydrological alteration; high road or building density; or noxious weed or ANVS cover is > 30%.	high disturbance	high disturbance	high disturbance

Comments: (types of disturbance, intensity, season, etc.): AA includes an unnamed perennial stream channel and adjacent fringe wetlands and slope wetland. Wetlands within the AA were constructed in 2006 and managed in a natural state. Adjacent area is subject to grazing.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Cynoglossum officinale, Iris pseudocorus, and Leucanthemum vulgare are present within the AA. Additionally, Lepidium draba and Ventenata dubia are prominent in the areas surrounding the AA.

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Rangeland to the north, south and west; US 93 corridor to the east. Woody vegetation is dispersed across the wetland, therefore a scrub shrub wetland class is included to capture its observed importance to wildlife (especially Passerines) on the site.

13. Structural Diversity: (based on number of "Cowardin" ***vegetated*** classes present [do not include unvegetated classes], see #10 above)

Existing # of "Cowardin" Vegetated Classes in AA	**Initial Rating**	**Is current management preventing (passive) existence of additional vegetated classes?**		**Modified Rating**
>= 3 (or 2 if 1 is forested) classes	H	NA	NA	NA
2 (or 1 if forested) classes	**M**	NA	NA	NA
1 class, but not a monoculture	M	<-- NO	YES -->	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	NA

Comments: Vegetated classes at the mitigation site include emergent and scrub-shrub.

SECTION PERTAINING to FUNCTIONS & VALUES ASSESSMENT

14A. Habitat for Federally Listed or Proposed Threatened or Endangered Plants or Animals:

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
	Grizzly Bear(D)	

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
Functional Points and Rating	1H	.9H	**.8M**	.7M	.3L	.1L	0L

Sources for documented use (e.g. observations, records, etc): Documented occurrence (CSKT Wildlife staff observation 2017/2018). Suspected occurrence (MTNHP 2023, USFWS IPaC 2023).

14B. Habitat for plant or animals rated S1, S2, or S3 by the Montana Natural Heritage Program: (not including species listed in14A above)

i. AA is Documented (D) or Suspected (S) to contain (circle one based on definitions contained in instructions):

Primary or critical habitat (list species)	**Secondary habitat (list species)**	**Incidental habitat (list species)**
		Great Blue Heron (S3)(S) - S2S3

ii. Rating (use the conclusions from i above and the matrix below to arrive at [circle] the functional points and rating)

Highest Habitat Level	*doc/primary*	*sus/primary*	*doc/secondary*	*sus/secondary*	*doc/incidental*	*sus/incidental*	*None*
***S1 Species:** Functional Points and Rating*	1H	.8H	.7M	.6M	.2L	.1L	0L
***S2 and S3 Species:** Functional Points and Rating*	.9H	.7M	.6M	.5M	.2L	**.1L**	0L

Sources for documented use (e.g. observations, records, etc): Great Blue Heron have been documented in the project vicinity (MTNHP Environmental Summary 2023).

14C. General Wildlife Habitat Rating:

i. Evidence of overall wildlife use in the AA (circle substantial, moderate, or low based on supporting evidence):

Substantial (based on any of the following [check]):
- ___ observations of abundant wildlife #s or high species diversity (during any period)
- ___ abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.
- ___ presence of extremely limiting habitat features not available in the surrounding area
- ___ interviews with local biologists with knowledge of the AA

Minimal (based on any of the following [check]):
- ___ few or no wildlife observations during peak use periods
- ___ little to no wildlife sign
- ___ sparse adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

Moderate (based on any of the following [check]):
- X observations of scattered wildlife groups or individuals or relatively few species during peak periods
- X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc.
- X adequate adjacent upland food sources
- ___ interviews with local biologists with knowledge of the AA

ii. Wildlife habitat features (Working from top to bottom, circle appropriate AA attributes in matrix to arrive at rating. Structural diversity is from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each other interms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these terms])

Structural diversity (see #13)	High								Moderate								Low			
Class cover distribution (all vegetated classes)	Even				Uneven				Even				Uneven				Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A	P/P	S/I	T/E	A
Low disturbance at AA (see #12i)	E	E	E	H	E	E	H	H	E	H	H	M	**E**	H	M	M	E	H	M	M
Moderate disturbance at AA (see #12i)	H	H	H	H	H	H	H	M	H	H	M	M	H	M	M	L	H	M	L	L
High disturbance at AA (see #12i)	M	M	M	L	M	M	L	L	M	M	L	L	M	L	L	L	L	L	L	L

iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [circle] the functional points and rating)

Evidence of wildlife use (i)	*Wildlife habitat features rating (ii)*			
	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	**.9H**	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: General wildlife is rated high based on low disturbance to the area and moderate habitat use.

14D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used by fish, fish use is not restorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then mark ___ **NA** and proceed to 14E.)

Type of Fishery: Cold Water **(CW)** ___ Warm Water **(WW)** **X** **Use the CW or WW guidelines in the user manual to complete the matrix**

i. Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [circle] the functional points and rating)

Duration of surface water in AA	Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Optimal		Adequate		Poor		Optimal		Adequate		Poor		Optimal		Adequate		Poor	
Thermal cover optimal / suboptimal	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S	O	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M		.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA: Unidentified fish species.

ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)

a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? **X** *If yes, reduce score in i above by 0.1.*

b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? ___ *If yes, add 0.1 to the adjusted score in* ***i*** *or* ***iia.***

iii. Final Score and Rating: 0.3L **Comments:** General fish habitat rated NA due to impassable barriers (log cribs) that prevented fish from using AA in previous years. Rating updated in 2021 with the observation of minnows in 2021 and 2022.

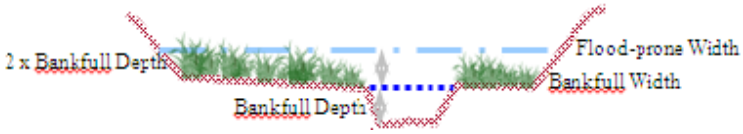
14E. Flood Attenuation: (Applies only to wetlands subject to flooding via in-channel or overbank flow. If wetlands in AA are not flooded from in-channel or overbank flow, mark ___ **NA** and proceed to 14F.)

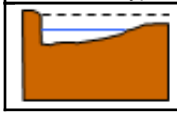
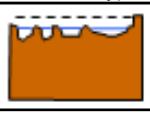
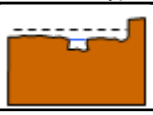
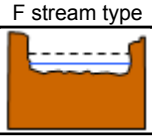
i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	Slightly entrenched - C, D, E stream types			Moderately entrenched – B stream type			Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains **no outlet or restricted outlet**	1H	.9H		.8H	.7M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

Entrenchment ratio (ER) estimation – see User's Manual for additional guidance. Entrenchment ratio = (flood-prone width)/(bankfull width) Flood-prone width = estimated horizontal projection of where 2 x maximum bankfull depth elevation intersects the floodplain on each side of the stream.

4.6 /	2 =	**2.30**
Flood-prone width	*Bankfull width*	*Entrenchment ratio (ER)*



Slightly Entrenched ER = >2.2			**Moderately Entrenched ER = 1.41 – 2.2**	**Entrenched ER = 1.0 – 1.4**		
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
						

ii. Are ≥10 acres of wetland in the AA subject to flooding **AND** are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ___ **Comments:** Log crib structures were installed as beaver dam analogues to spread flow out and create wetland habitat. The dense cattail marsh works to slow flood waters and functions similarly to woody vegetation, so the score was manually increased.

14F. Short and Long Term Surface Water Storage: (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, ___**NA** and proceed to 14G.)

i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet			1.1 to 5 acre feet			<=1 acre foot		
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond **>= 5 out of 10 years**	1H	.9H	.8H	**.8H**	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond **< 5 out of 10 years**	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Log crib structures impound and store water.

14G. Sediment/Nutrient/Toxicant Retention and Removal: (Applies to wetlands with potential to receive sediments, nutrients, or toxicants through influx of surface or ground water or direct input. If no wetlands in the AA are subject to such input, ___**NA** and proceed to 14H.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating [H=high, M=moderate, or L=low])

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			
% cover of wetland vegetation in AA	>= 70%		< 70%		>= 70%		< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains **no or restricted outlet**	**1H**	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains **unrestricted outlet**	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: The AA routinely floods and is dominated by emergent vegetation, and has a restricted outlet created by log crib structures.

14H Sediment/Shoreline Stabilization: (Applies only if AA occurs on or within the banks or a river, stream, or other natural or man-made drainage, or on the shoreline of a standing water body which is subject to wave action. If 14H does not apply, ___**NA** and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

*% Cover of **wetland** streambank or shoreline by species with stability ratings of >=6 (see **Appendix F**).*	*Duration of surface water adjacent to rooted vegetation*		
	Permanent / Perennial	Seasonal / Intermittent	Temporary / Ephemeral
>= 65%	**1H**	.9H	.7M
35-64%	.7M	.6M	.5M
35%	.3L	.2L	.1L

Comments: The AA contains an unnamed tributary to Post Creek. Dominant wetland cover is provided by Typha latifolia and Phalaris arundinacea.

14I. Production Export/Food Chain Support:

i. Level of Biological Activity (synthesis of wildlife and fish habitat ratings [circle])

General Fish Habitat Rating (14D.iii.)	**General Wildlife Habitat Rating (14C.iii.)**		
	E/H	M	L
E/H	H	H	M
M	H	M	M
L	**M**	M	L
N/A	H	M	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14I.i.); Factor C = whether or not the AA contains a surface or subsurface outlet; the final three rows pertain to duration of surface water in the AA, where P/P, S/I, and T/E are as previously defined, and A = "absent" [see instructions for further definitions of these terms].)

A	Vegetated component >5 acres						Vegetated component 1-5 acres						Vegetated component < 1 acre					
B	High		Moderate		Low		High		Moderate		Low		High		Moderate		Low	
C	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	**.7M**	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

iii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1.) **Vegetated Upland Buffer (VUB):** Area with >= 30% plant cover, = 15% noxious weed or ANVS cover, and that is not subjected to periodic mechanical mowing or clearing (unless for weed control).

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference? ___**X** *If yes, add 0.1 to the score in ii above.*

iv. Final Score and Rating: 0.80H **Comments:** Vegetated component of AA is 3.51 acres of emergent wetland with a developing scrub-shrub component. The AA includes a permanent/perennial stream channel and surface water outlet.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below)

i. Discharge Indicators

- X The AA is a slope wetland
- ___ Springs or seeps are known or observed
- ___ Vegetation growing during dormant season/drought
- X Wetland occurs at the toe of a natural slope
- ___ AA permanently flooded during drought periods
- ___ Wetland contains an outlet, but no inlet
- ___ Shallow water table and the site is saturated to the surface
- X Other: Seeps are present at the wetland edge

ii. Recharge Indicators

- ___ Permeable substrate present without underlying impeding layer
- ___ Wetland contains inlet but no outlet
- ___ Stream is a known 'losing' stream; discharge volume decreases
- ___ Other:

iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating)

	Duration of saturation at AA Wetlands *FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM*			
Criteria	P/P	S/I	T	None
Groundwater Discharge or Recharge	**1H**	.7M	.4M	.1L
Insufficient Data/Information	N/A			

Comments: Majority of site hydrology is supplied from surface water and water retention by cribs, but seeps occur north and south of the creek.

14K. Uniqueness:

i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating)

Replacement potential	AA contains fen, bog, warm springs or mature (>80 yr-old) forested wetland **or** plant association listed as "S1" by the MTNHP			AA does not contain previously cited rare types **and** structural diversity (#13) is high **or** contains plant association listed as "S2" by the MTNHP			AA does not contain previously cited rare types or associations **and** structural diversity (#13) is low-moderate		
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	**.4M**	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L

Comments: Wetland types are common in this watershed. Scrub shrub habitat cannot be demonstrated in a data point as the shrub/sapling stratum is <30% in all areas of the site. However, the woody habitat provides structural diversity and important habitat for wildlife. Therefore, a PSS component is included in the assessment.

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)

i. Is the AA a known or potential rec./ed. site: (circle) **X** (if 'Yes' continue with the evaluation; if 'No' then mark ___ **NA** and proceed to the overall summary and rating page)

ii. Check categories that apply to the AA: **X** Educational/scientific study; ___ Consumptive rec.; **X** Non-consumptive rec.; ___ Other :

iii. Rating:

Known or Potential Recreation or Education Area	Known	Potential
Public ownership or public easement with general public access (no permission required)	.2H	**.15H**
Private ownership with general public access (no permission required)	.15H	.1M
Private or public ownership without general public access, or requiring permission for public access	.1M	.05L

Comments: Site has the potential for educational use.

General Site Notes
Wetland acreage at the mitigation site increased 0.04-acres in the 2023 monitoring event.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA-1

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	M	0.80	1	2.81	
B. MT Natural Heritage Program Species Habitat	L	0.10	1	0.35	
C. General Wildlife Habitat	H	0.90	1	3.16	*
D. General Fish Habitat	L	0.30	1	1.05	
E. Flood Attenuation	M	0.60	1	2.11	
F. Short and Long Term Surface Water Storage	H	0.80	1	2.81	
G. Sediment/Nutrient/Toxicant Removal	H	1.00	1	3.51	*
H. Sediment/Shoreline Stabilization	H	1.00	1	3.51	*
I. Production Export/Food Chain Support	H	0.80	1	2.81	
J. Groundwater Discharge/Recharge	H	1.00	1	3.51	*
K. Uniqueness	M	0.40	1	1.40	
L. Recreation/Education Potential (bonus points)	H	0.15	1	0.53	
Totals:		7.85	11.00	27.56	
Percent of Possible Score			71%		

Category I Wetland: (must satisfy one of the following criteria; otherwise go to Category II)

____ Score of 1 functional point for Listed/Proposed Threatened or Endangered Species; **or**
____ Score of 1 functional point for Uniqueness; **or**
____ Score of 1 functional point for Flood Attenuation and answer to Question 14E.ii is "yes"; **or**
____ Percent of possible score > 80% (round to nearest whole #).

Category II Wetland: (Criteria for Category I not satisfied and meets any one of the following criteria; otherwise go to Category IV)

____ Score of 1 functional point for MT Natural Heritage Program Species Habitat; **or**
__X__ Score of .9 or 1 functional point for General Wildlife Habitat; **or**
____ Score of .9 or 1 functional point for General Fish Habitat; **or**
____ "High" to "Exceptional" ratings for **both** General Wildlife Habitat **and** General Fish/Aquatic Habitat; **or**
____ Score of .9 functional point for Uniqueness; **or**
__X__ Percent of possible score > 65% (round to nearest whole #).

Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)

Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)

____ "Low" rating for Uniqueness; **and**
____ Vegetated wetland component 1 acre (do not include upland vegetated buffer); **and**
____ Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: The US 93 N Peterson MDT Wetland Mitigation Site rates as a Category II wetland.

Table B-1. US93 N Peterson Mitigation Site. Comprehensive Vegetation Species List 2008-2023

Scientific Name	Common Name	WMVC Wetland Indicator[(a)]
Achillea millefolium	Common Yarrow	FACU
Agropyron cristatum	Crested Wheatgrass	UPL
Alnus incana	Speckled Alder	FACW
Amsinckia menziesii	Small-flower Fiddle-neck	UPL
Asparagus officinalis	Asparagus	FACU
Bistorta bistortoides	American Bistort	FACW
Brassica juncea	Chinese Mustard	UPL
Bromus arvensis	Field Brome	UPL
Bromus inermis	Smooth Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Cardaria draba	Whitetop	UPL
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex nebrascensis	Nebraska Sedge	OBL
Carex pachystachya	Thick-Head Sedge	FAC
Carex pellita	Woolly Sedge	OBL
Carex praegracilis	Clustered Field Sedge	FACW
Carex sp.	Sedge	N/A
Carex stipata	Stalk-Grain Sedge	OBL
Carex utriculata	Northwest Territory Sedge	OBL
Carex vesicaria	Lesser Bladder Sedge	OBL
Cirsium arvense	Canadian Thistle	FAC
Cirsium vulgare	Bull Thistle	FACU
Cornus alba	Red Osier	FACW
Cynoglossum officincale	Gypsy-Flower	FACU
Dactylis glomerata	Orchard Grass	FACU
Descurainia sophia	Herb Sophia	UPL
Dianthus sp.	Pink	N/A
Dipsacus fullonum	Fuller's Teasel	FAC
Eleocharis palustris	Common Spike-Rush	OBL
Elodea sp.	Waterweed	N/A
Elymus repens	Creeping Wild Rye	FAC
Epilobium ciliatum	Fringed Willowherb	FACW
Erodium cicutarium	**Redstem Stork's Bill**	**UPL**
Festuca arundinacea	Tall fescue	UPL
Festuca sp.	Fescue	N/A
Gallium aperine	Sticky-Willy	FACU
Geum macrophyllum	Large-Leaf Avens	FAC
Glyceria grandis	American Manna Grass	OBL
Helianthus pauciflorus	Stiff Sunflower	UPL
Hordeum jubatum	Fox-Tail Barley	FAC

Table B-1. US93 N Peterson Mitigation Site. Comprehensive Vegetation Species List 2008-2023

Scientific Name	Common Name	WMVC Wetland Indicator[(a)]
Impatiens ecalcarata	Spurless Touch-Me-Not	FACW
Iris pseudacorus	Pale-Yellow Iris	OBL
Juncus balticus	Baltic Rush	FACW
Juncus effusus	**Common rush**	**FACW**
Juncus ensifolius	Dagger-Leaf Rush	FACW
Juncus sp.	Rush	N/A
Juncus tenuis	Lesser Poverty Rush	FAC
Kochia scoparia	Mexican Kochia	FAC
Lactuca serriola	Prickly Lettuce	FACU
Lemna minor	Common Duckweed	OBL
Lepidium campestre	Field Pepper-grass	UPL
Lepidium perfoliatum	Clasping Pepperwort	FACU
Leucanthemum vulgare	Ox-Eye Daisy	FACU
Malva neglecta	Dwarf Cheeseweed	UPL
Medicago sativa	Alfalfa	UPL
Melilotus officinalis	Yellow Sweet-Clover	FACU
Mentha arvensis	American Wild Mint	FACW
Myosotis laxa	Bay Forget-Me-Not	OBL
Myriophyllum sibiricum	Siberian Water-Milfoil	OBL
Nasturtium microphyllum	One-Row Watercress	OBL
Nasturtium officinale	Watercress	OBL
Nepeta cataria	Catnip	FACU
Oenanthe sp.	Waterdropwort	N/A
Pascopyrum smithii	Western-Wheat Grass	FACU
Persicaria amphibia	Water Smartweed	OBL
Persicaria lapathifolia	Dock-Leaf Smartweed	FACW
Persicaria maculosa	**Spotted Lady's Thumb**	**FACW**
Phalaris arundinacea	Reed Canary Grass	FACW
Plantago lanceolata	English Plantain	FACU
Poa palustris	Fowl Blue Grass	FAC
Poa pratensis	Kentucky Blue Grass	FAC
Poa sp.	Bluegrass	N/A
Potentilla recta	Sulphur Cinquefoil	UPL
Potentilla sp.	Cinquefoil	N/A
Prunella vulgaris	Common Selfheal	FACU
Rosa woodsii	Woods' Rose	FACU
Rumex crispus	Curly Dock	FAC
Salix bebbiana	Gray Willow	FACW
Salix drummondiana	Drummond's Willow	FACW

Table B-1. US93 N Peterson Mitigation Site. Comprehensive Vegetation Species List 2008-2023

Scientific Name	Common Name	WMVC Wetland Indicator[(a)]
Salix exigua	Narrowleaf Willow	FACW
Salix sp.	Willow	N/A
Schedonorus pratensis	Meadow False Fye Grass	FACU
Schoenoplectus acutus	Hard-Stem Club-Rush	OBL
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Silene latifolia	Bladder Campion	UPL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Solanum dulcamara	Climbing Nightshade	FAC
Sonchus arvensis	Field Sow-Thistle	FACU
Suaeda calceoliformis	Paiuteweed	FACW
Symphoricarpos albus	Common Snowberry	FACU
Thlaspi arvense	Field Pennycress	UPL
Tragopogon dubius	Meadow Goat's-beard	UPL
Trifolium aureum	**Golden clover**	**UPL**
Trifolium pratense	Red Clover	FACU
Trifolium sp.	Clover	N/A
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Ventenata dubia	Ventenata	UPL
Verbascum blattaria	White Moth Mullein	UPL
Verbascum thapsus	Great Mullein	FACU
Veronica sp.	Speedwell	N/A

[(a)] 2020 NWPL (USACE 2020)
Species observed for the first time in 2023 are **bolded.**

APPENDIX C
PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring
US 93 Peterson
Lake County, Montana

US93 Peterson: Photo Point Photographs



Photo Point: 1 **Location:** PP1
Bearing: 135 degrees **Year:** 2017



Photo Point: 1 **Location:** PP1
Bearing: 135 degrees **Year:** 2023



Photo Point: 2 **Location:** PP2 photo 1
Bearing: 35 degrees **Year**: 2017



Photo Point: 2 **Location:** PP2 photo 1
Bearing: 35 degrees **Year:** 2023



Photo Point: 2 **Location:** PP2 photo 2
Bearing: 110 degrees **Year:** 2017



Photo Point: 2 **Location:** PP2 photo 2
Bearing: 110 degrees **Year:** 2023

US93 Peterson: Photo Point Photographs



Photo Point: 4 **Location:** Looking across T-2
Bearing: 30 degrees **Year:** 2017



Photo Point: 4 **Location:** Looking across T-2
Bearing: 30 degrees **Year:** 2023



Photo Point: 5 Location: Wetland boundary
Bearing: 175 degrees **Year**: 2017



Photo Point: 5 **Location**: Wetland boundary
Bearing: 175 degrees **Year**: 2023



Photo Point: 6 **Location:** Transect 2 Start
Bearing: 315 degrees **Year:** 2017



Photo Point: 6 **Location:** Transect 2 Start
Bearing: 315 degrees **Year:** 2023

US93 Peterson: Photo Point Photographs



Photo Point: 7 **Location:** PP7 photo 1
Bearing: 5 degrees **Year:** 2020



Photo Point: 7 **Location:** PP7 photo 1
Bearing: 5 degrees **Year:** 2023



Photo Point: 7 **Location:** PP7 photo 2
Bearing: 267 degrees **Year:** 2020



Photo Point: 7 **Location:** PP7 photo 2
Bearing: 267 degrees **Year:** 2023



Photo Point: 8 **Location:** New crib structure.
Bearing: 34 degrees **Year**: 2020



Photo Point: 8 **Location:** New crib structure.
Bearing: 34 degrees **Year**: 2023

US93 Peterson: Transect Photographs



Photo Point: T-1 Start **Location:** T-1 Start
Bearing: 215 degrees **Year:** 2017



Photo Point: T-1 Start **Location:** T-1 Start
Bearing: 215 degrees **Year:** 2023

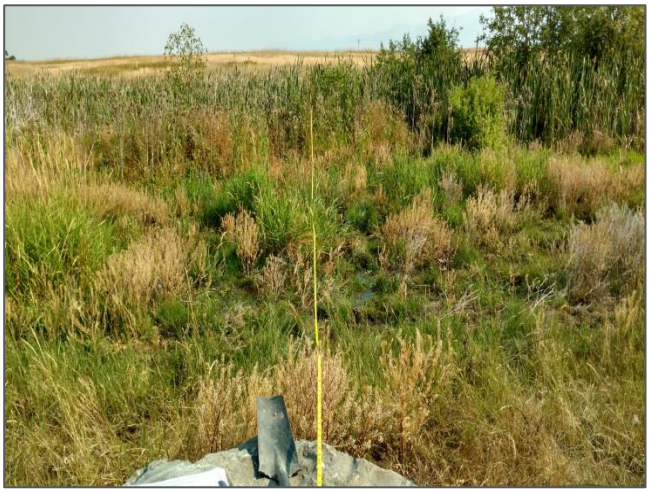


Photo Point 3 (T-1 End) **Location:** T-1 End
Bearing: 45 degrees **Year**: 2017

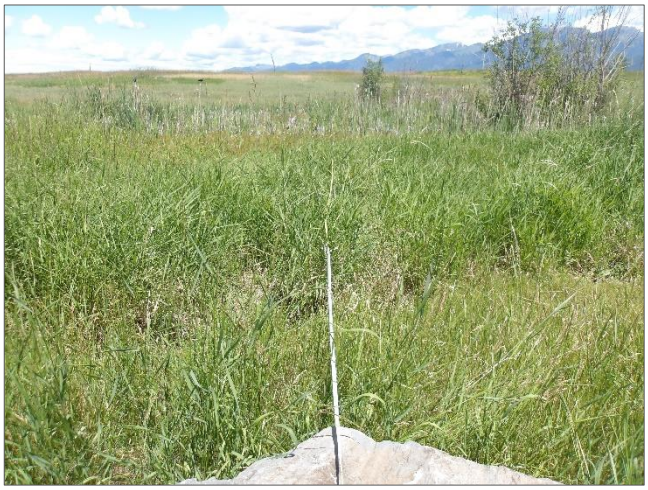


Photo Point 3 (T-1 End) **Location:** T-1 End
Bearing: 45 degrees **Year:** 2023



Photo Point: T-2 Start **Location**: T-2 Start
Bearing: 135 **Year**: 2020



Photo Point: T-2 Start **Location**: T-2 Start
Bearing: 135 **Year**: 2023



Photo Point: T-2 End **Location:** T-2 End
Bearing: 315 degrees **Year:** 2020



Photo Point: T-2 End **Location:** T-2 End
Bearing: 315 degrees **Year:** 2023

US93 Peterson: Data Point Photographs



Data Point: DP01w
Year: 2023



Data Point: DP01u
Year: 2023



Data Point: DP02w
Year: 2023



Data Point: DP02u
Year: 2023



Data Point: DP03w
Year: 2023



Data Point: DP03u
Year: 2023



Data Point: DP04w
Year: 2023



Data Point: DP04u
Year: 2023



Data Point: DP05w
Year: 2023



Data Point: DP05u
Year: 2023

US93 Peterson: Additional Site Photographs



Additional Photo 1. View of downstream log crib structure facing north across the channel.



Additional Photo 2. View of middle log crib structure facing north/northeast across the channel.



Additional Photo 3. View of upstream log crib structure facing northeast across the channel.



Additional Photo 4. Example photo of water level at log crib structure in the central portion of the project site.