Montana Department of Transportation Wetland Mitigation Monitoring Report

SILICON MOUNTAIN MITIGATION SITE

Project Overview

MDT Project Number: STPX 47 (024) 56 UPN# 6044

Watershed: Watershed #2 – Upper Clark Fork of the Columbia River

Monitoring Year: 2022

Years Monitored: 8th year of monitoring

Corps Permit Number: NWO-2012-01822-MTH

Stream Protection Act (SPA) Number: MDT-R2-74-2012

Monitoring Conducted By: Confluence Consulting Inc

Dates Monitoring Was Conducted: June 13th-14th, 2022

Purpose of the Approved Project:

The Silicon Mountain wetland mitigation project was developed cooperatively by the Montana Department of Transportation (MDT) and Butte – Silver Bow County (BSBC). The project was intended to provide MDT with 11.45 acres of compensatory wetland mitigation credits and 12,369 stream mitigation credits. The credits generated by the project will be used to offset wetland and stream impacts associated with Butte Silver Bow County's Silicon Tech Park, the Port bridge/road realignment project, and impacts associated with future Montana Department of Transportation (MDT) project-related wetland and stream impacts in Watershed #2 – Upper Clark Fork River. The Silicon Mountain mitigation site was designed to: (a) create 7.84 acres of emergent and scrub/shrub wetland by excavating six wetland cells; (b) protect 10.06 acres of existing emergent and scrub/shrub wetland; (c) restore upland, wetland, and riparian areas that were impacted by the new bridge/roadway alignment by seeding and planting graminoids, shrubs, and trees; (d) restore and reconstruct approximately 3,250 linear feet of the Sand Creek channel to its historic natural condition; and (e) relocate and restore approximately 650 linear feet of the Sand Creek channel on 2.04 acres of privately owned property south of the MDT bridge/road realignment project. The project was expected to generate 11.45 wetland mitigation credit acres, 4.33 of which would be credited to BSBC and the remaining 7.12 credits would be held in reserved by MDT.

Site Location:

Latitude: 45.998489 Longitude: -112.662948

County: Butte Silver Bow Nearest Town: Rocker, MT

Map Included: Figure 1 on page #10

Mitigation Site Construction Started: 2013 Construction Ended: 2015

Dates of Any Recent Corrective or Maintenance Activities (since previous report):

Activity: NA Date: NA Specific recommendations for any additional corrective actions: Weed treatment

will continue in 2023.

Anticipated Wetland Credit Acres: 11.45

Wetland Credit Acres Generated to Date: 14.29 total, 4.33 assigned to Butte Silver Bow County; 9.96

assigned MDT

Anticipated Stream Credits: 12,369.50

Stream Credits Generated to Date: 12,369.50

Previous Monitoring Reports:

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

Monitoring Period: 5 years from construction completion or until concurrence by the US Army Corps of Engineers (USACE).

<u>Requirements</u> (from approved mitigation plan, banking instrument, or Department of Army (DA) permit conditions)

Performance Standards: A summary of performance standards, associated success criteria, and 2022 achievement status for the Silicon Mountain site is provided in Table 1.

Table 1. Summary of Performance Standards

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	Criteria for the three wetland parameters (hydrology, vegetation, and soils) are met as outlined in the 1987 Wetland Manual and 2010 Regional Supplement.	Υ	Areas that are identified as wetland within the mitigation site meet the criteria for all three parameters.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.	Υ	Areas identified as wetland within the mitigation site exhibit soil saturation for at least 12.5 percent of the growing season.
	Hydric soil conditions are present or appear to be forming.	Υ	Hydric soil characteristics have developed throughout all constructed wetlands.
Hydric Soil	Soil is sufficiently stable to prevent erosion.	Υ	Disturbed soil is stable and generally does not exhibit signs of erosion.
	Soil is able to support plant cover.	Υ	Plant cover is establishing well within developed wetlands.
Hydrophytic	Success is achieved where combined absolute cover of facultative or wetter species is ≥ 70 percent.	Y	Established wetland cells support 70 percent or greater cover of hydrophytic vegetation (OBL, FACW, and FAC).
Vegetation	State-listed noxious weeds do not exceed 10 percent absolute cover.	Υ	Montana state-listed noxious weeds are estimated at 2 percent absolute cover within wetland areas in 2022.
Channel- Restoration	Revegetation along the new Sand Creek channel corridor will be considered successful when banks are vegetated with a majority of deep- rooting riparian and wetland herbaceous and woody plant species.	Υ	The majority of stream bank vegetation along the constructed Sand Creek channel corridor is dominated by vegetation communities with stability ratings greater than or equal to 6.
Success	The intent of the stream restoration is to allow for the stream to naturally migrate within the floodplain and to allow it to freely move and stabilize itself within the site.	Y	The stream has plenty of space within the floodplain for natural migration. The stream currently appears to be stable with no lateral adjustment observed after construction.
Stream Bank Vegetation	Banks are vegetated with a majority of deep-rooting riparian plant species that have root-stability indexes ≥ 6.	Y	The majority of stream bank vegetation along the constructed Sand Creek channel corridor is dominated by vegetation communities with stability ratings greater than or equal to 6.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion	
Open Water	The project is intended to provide seasonal open water during the spring and early summer within excavated depressions. As the growing season progresses and the groundwater levels recede, vegetation is expected to germinate within the majority of the depressions. Open water with submerged and/or floating vegetation will, therefore, be considered successful and creditable.	Y	In 2022, wetland Cells 2, 3, and portions of cells 4, 5, and wetland 13 exhibited rooted hydrophytic vegetation in inundated areas and these areas were included in the wetland acreage. Wetland Cells 1, 5, portion of cell 4, and wetland 13 appear to support perennial inundation and exhibited open water and an aquatic macrophyte community. These areas were delineated as open water.	
	Noxious weeds do not exceed 10 percent cover within upland buffer area.	Y	Noxious weed cover is approximately 2 percent within the upland buffer.	
Upland Buffer	Any area that was disturbed within the creditable buffer zone must have at least 50 percent aerial cover of non-weed species by the end of the monitoring period.	Y	Disturbed areas have established greater than 50 percent cover by non-weed weed species.	
Weed Control	Control measures will be based on annual monitoring of the site to determine weed species and the degree of infestation within the site; control measures will be implemented by MDT to minimize and/or eliminate the intrusion of state-listed noxious weed species within the site.	Y	State-listed noxious weed species across the site have been monitored and mapped during each year since construction. MDT has implemented weed-control efforts. Absolute cover from Montana state-listed noxious weeds was estimated at 5 percent across the entire site.	

Summary Data

Wetland Delineation — The total wetland acreage delineated within the project area in 2022 was 17.93 acres (Table 2; Appendix A). As of the 2022 monitoring event, 8.62 new wetland acres have become established, and 9.31 acres of pre-existing wetland have been preserved (Table 2). The total number of wetland acres delineated decreased by 0.14 acres since 2021. Even though wetland expansion was observed in a few portions of the site, the total wetland acreage still displayed a net loss due to open water expansion and a wetland acreage reduction within cell 6. Open water, as defined by recent USACE guidance (N. Green, personal communication, May 6, 2020), accounted for 3.51 acres of the mitigation site in 2022, which was an increase of 0.27 acres since 2021. Of this open water, 0.66 acres are associated with the preservation wetlands in the eastern portion of the site, and 2.86 acres are associated with created wetlands (Table 2). Uplands accounted for approximately 26.83 acres of the mitigation site and 1.70 acres are represented by the restored Sand Creek channel (Figure A-3, Appendix A). No mudflats were observed at this site in 2022. Wetland delineation data forms can be found in Appendix B, and Photos or data points in Appendix C.

Table 2. Upland, Wetland & Aquatic Habitat Acreage Delineated at the Silicon Mountain Site from 2016 to 2022.

Habitat Type	2016 Acreage	2017 Acreage	2018 Acreage	2019 Acreage	2020 Acreage	2021 Acreage	2022 Acreage
Uplands	31.80	31.30	30.50	30.10	28.96	26.85	26.83
Establishment (Creation) Wetland	6.30	6.30	7.10	7.50	6.04	8.42	8.62
Establishment Open Water ^(a)	NA	NA	NA	NA	2.92	2.65	2.86
Preservation Wetland	10.30	10.80	10.80	10.80	9.65	9.65	9.31
Preservation Open Water ^(a)	NA	NA	NA	NA	0.84	0.60	0.66
Mudflat ^(a)	NA	NA	NA	NA	0.00	0.24	0.00
Stream Channel	1.70	1.70	1.70	1.70	1.70	1.70	1.70
Total Wetland & Aquatic Habitat	18.30	18.80	19.60	20.00	21.14	23.25	23.27

⁽a) Open water and mudflats were only mapped separately from wetlands beginning in 2020.

Vegetation – A total of 178 plant species have been identified at the site from 2015 through 2022; no new species were identified 2022. The following eight wetland and six upland community types were identified and mapped at the mitigation site in 2022 based on species composition and dominance:

- Upland Type 2 Descurainia sophia/Thlaspi arvense
- Upland Type 3 Bromus inermis/Poa pratensis
- Upland Type 5 Elymus repens/Bromus inermis4
- Upland Type 10 Artemisia tridentata/Poa spp.
- Upland Type 13 Leymus cinereus/Elymus trachycaulus
- Upland Type 15 Poa pratensis/Elymus repens
- Wetland Type 4 Carex spp./Juncus balticus
- Wetland Type 7 Open Water/Aquatic Macrophytes
- Wetland Type 8 Salix exigua/Juncus balticus
- Wetland Type 9 *Juncus balticus/Elymus repens*
- Wetland Type 11 Typha latifolia
- Wetland Type 14 Eleocharis palustris/Deschampsia caespitosa
- Wetland Type 16 Juncus balticus/Eleocharis palustris
- Wetland Type 17 Salix spp.

The plant composition for each dominant vegetation community type is provided in full detail on the Wetland Mitigation Site Monitoring form (Appendix B), and the community boundaries shown on Figure A-3 (Appendix A).

Dominant vegetation community types and their boundaries remained very similar to those mapped in 2021, with two exceptions. Two large areas, located in the middle of the site, which had previously been identified as Upland Type (UT) 3 were mapped as Wetland Type (WT) 9 in 2022 due to large increases in *Juncus balticus* and *Elymus repens*. This transition signifies a shift in dominance from upland species to

facultative species, which may indicate that the wetlands are continuing to expand in the middle of the site.

Vegetation cover was estimated along two belt transects (T-1 and T-2) in 2022 (Figure A-2, Appendix A). T-1 is 564 feet long and intersects UT3, WT11, UT13, and WT16. There were no changes in transect intervals, total cover, and only minimal changes in the species observed and their associated cover classes between 2021 and 2022 (Table 3). Hydrophytic vegetation accounted for 86 percent of the transect in 2022, which is a 1 percent increase since 2021. An increase in inundation was observed along T-1 in 2022, primarily in areas that were saturated to the ground surface in 2021.

Table 3. Data Summary for T-1 From 2016 Through 2022 at the Silicon Mountain Site.

Monitoring Year	2016	2017	2018	2019	2020	2021	2022
Transect Length (feet)	564	564	564	564	564	564	564
Vegetation Community Transitions Along Transect	6	6	6	6	6	6	6
Vegetation Communities Along Transect	4	4	5	5	4	4	4
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2
Total Vegetative Species	48	54	42	43	47	46	46
Total Hydrophytic Species	26	33	28	31	35	35	36
Total Upland Species	22	21	14	12	12	11	10
Estimated % Total Vegetative Cover	90	90	90	93	93	93	93
Estimated % Unvegetated	10	10	10	7	7	7	7
% Transect Length Comprising Hydrophytic Vegetation Communities	81.3	86.0	86.0	86.0	86.0	86.0	86.0
% Transect Length Comprising Upland Vegetation Communities	18.7	14.0	14.0	14.0	14.0	14.0	14.0
% Transect Length Comprising Open Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Mudflat	0.0	0.0	0.0	0.0	0.0	0.0	0.0

T-2 is 219 feet long and intersects vegetation communities UT3, WT11, WT14, and UT15. Hydrophytic vegetation has provided 90 percent of the plant cover along the transect for the last four years, and this was the case again in 2022. The number of hydrophytic species observed remained the same as in the previous two years and the number of upland species observed decreased by 1. Total cover increased by 2 percent in 2022.

Priority 2B noxious weeds identified within the Silicon Mountain mitigation site included spotted knapweed (*Centaurea stoebe*), leafy spurge (*Euphorbia esula*), and Canada thistle (*Cirsium arvense*). Leafy spurge and Canada thistle populations sizes were similar to those observed in 2021, but spotted knapweed expanded on the site between the 2021 and 2022 monitoring events. The number of spotted knapweed patches mapped nearly doubled from 5 to 9, with two new patches occurring in the uplands northwest of wetland cell 6, one new patch near photo point 10, and one new patch in the southeast corner of wetland cell 4 Common tansy (*Tanacetum vulgare*), butter-and-eggs (*Linaria vulgaris*), and Russian knapweed (*Acroptilon repens*), were also observed as isolated individuals in several locations across the site, but were not mapped (Figure A-3, Appendix A). The site is currently achieving the success criteria established for noxious weed cover within both the wetland and upland buffer areas.

MDT planted an estimated 30,000 willow cuttings and 350 containerized shrubs and trees along the stream banks of the Sand Creek channel, in riparian areas, and in small clusters around the perimeter of the excavated wetland cells. An estimated 17 percent of the containerized woody plantings had survived through the 2022 survey, consistent with that observed in 2021. An estimated 85 percent of the installed willow cuttings had survived; young shoots arising from the installed cuttings ranged from 12 to 80 inches

in length. The willow cuttings were healthy and robust, with no signs of insect damage or disease observed. Woody species are also volunteering in several places along the stream channel.

Table 4. Data Summary for T-2 From 2016 Through 2022 at the Silicon Mountain Site

Monitoring Year	2016	2017	2018	2019	2020	2021	2022
Transect Length (feet)	219	219	219	219	219	219	219
Vegetation Community Transitions Along Transect	2	2	2	3	3	3	3
Vegetation Communities Along Transect	3	3	3	4	4	4	4
Hydrophytic Vegetation Communities Along Transect	1	1	1	2	2	2	2
Total Vegetative Species	21	47	27	35	37	35	34
Total Hydrophytic Species	10	24	17	19	26	26	26
Total Upland Species	11	23	10	16	11	9	8
Estimated % Total Vegetative Cover	45	55	72	87.5	85	87	89
Estimated % Unvegetated	55	45	28	12.5	15	13	11
% Transect Length Comprising Hydrophytic Vegetation Communities	88	88	91	90	90	90	90
% Transect Length Comprising Upland Vegetation Communities	11.9	11.9	9.1	9.6	10.5	10.5	10.5
% Transect Length Comprising Open Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0
% Transect Length Comprising Mudflat	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hydrology – Wetland hydrology was observed in numerous places across the Silicon Mountain mitigation site in 2022. Approximately 3.51 acres of surface water were observed in constructed wetland cells 1, 2, 4, and 5 and preserved wetland cell 13 (0.66 acres). The estimated average surface water depth was 0.5 feet with depths ranging 0.1-4 feet. Flowing water was present in the entire length of the Sand Creek channel. A high water table and soil saturation was observed in nearly every wetland soil pit and along Sand Creek (Appendix B). The only constructed wetland that showed a reduction in wetland hydrology over previous year was Cell 6.

US Geological Survey (USGS) groundwater monitoring data indicates that groundwater levels at this site experience interannual fluctuation. From 2016 to 2020, groundwater levels gradually increased with the highest water levels recorded May 2019 and 2020 (0.63-ft and 0.85-ft below land surface respectively). Groundwater monitoring data from 2022 indicates that groundwater levels in a portion of the site varied between 1.5- 3.2 feet below the land surface elevation of 5,347 feet from May through September (Table 5; USGS, 2022).

Table 5. 2022 USGS Groundwater Well Data for the Silicon Mountain Mitigation Site.

Date	Water Table Depth (feet below land surface)
5/4/2022	1.55
7/28/2022	3.22
9/22/2022	2.87

Soils – Soil pits were excavated at 20 sample points (10 sets of paired points) to determine the extent of hydric and upland soil development across the site in 2022 (Appendices A and B). Soil textures within wetland test pits ranged from coarse sand to muck to clay. Hydric soil indicators were observed in all but four wetland test pits and included depleted matrix, and hydrogen sulfide. The wetland test pits (i.e., DP04w, DP05w, DP09w, DP10w) that lacked hydric soil indicators exhibited hydrologic indicators,

including surface water, soil saturation, high water table, oxidized rhizospheres on living roots, geomorphic position, and passing the FAC-neutral test; all dominant plant species were OBL and FACW.

Soil textures within upland test pits ranged from loamy sand to sandy clay. No hydric soil indicators were observed in any of the upland test pits. Additional field observations for data points are provided in the USACE wetland determination data forms in Appendix B.

Wildlife – Sixteen bird species were identified in 2022 at the Silicon Mountain site and included several wetland-dependent species. In addition to the bird observations, one white-tailed deer, and a rabbit, were also observed (Appendix B).

Stream Channel Monitoring— The annual cross section survey of the reconstructed Sand Creek channel indicates that the Sand Creek channel form is continuing to evolve (Appendix D). Cross section 1 downcut by approximately 1 foot in the first several years of monitoring but has remained relatively stable for the last three years.

Similarly, the depth profile of cross section 2 changed so that the thalweg shifted away from the left bank and onto the right bank in the early years of monitoring, but in the last two years remained mostly stable. However, in 2022, the channel showed additional but minor amounts of aggradation on the left side and approximately 0.5-1 feet of lateral migration.

Cross sections 3 and 4 have been gradually aggrading since 2016 and the deepest parts of the channel have become narrower. This trend continued in 2022 and the average channel depth is now approximately 1.5 feet higher at both cross sections than it was in 2015.

Over the monitoring period, the deepest portion of the channel at cross section 5 has been gradually downcutting and the depths on the sides of the channel have been gradually increasing. Between 2021 and 2022, the deepest portion of the channel downcut by approximately 0.3 feet.

Cross section 6 has experienced the most change over the monitoring period and exhibited a biennial cutand-fill pattern between 2018 and 2021. In 2022, the channel morphology at cross section 6 remained similar to that in 2021, though slight amounts of aggradation were observed.

The channel form at cross section 7 has displayed minor fluctuations over the monitoring periods, generally retaining the same dimensions from 2016-2020. However, in 2021, the center of the channel downcut by approximately 0.5 feet and aggraded on the right bank. In 2022, the channel depth was maintained but the thalweg shifted more to the center of the channel, widened, and deposition was observed again on either side of the thalweg. Finally, the channel form at cross section 8 has remained relatively stable across all monitoring years.

Although seven of the 8 channel monitoring transects have exhibited evidence of evolution in channel form, none of the cross-section data has indicated that the channel has migrated laterally. Almost all observed change has occurred between the streambanks, and the top of bank locations have remained mostly static.

Riparian Vegetation Monitoring - In 2022, all 16 belt transects monitored along Sand Creek exhibited vegetation communities with stability ratings of 6 or greater, which meets the site's performance criterion. Willow species, including yellow willow (Salix lutea), narrow-leaf willow (Salix exigua), and Pacific willow (Salix lasiandra), represent the dominant community type identified along the stream bank transects. Dominant herbaceous species observed within the willow dominated communities included red-tinge bulrush (Scirpus microcarpus), Nebraska sedge (Carex nebrascensis), and Northwest Territory sedge (Carex utriculata). The willows continue to increase in height and width along the stream banks, with minor shifts in species dominance due to changes in relative cover of some plant species observed during the 2022 monitoring event.

Photographs – Seven wetland and ten stream repeat photo points were established in the project area in 2015 (PP-1 to PP-17; Figure A-2, Appendix A). Photographs of all surveyed channel cross sections, wetland determination data points, and vegetation transect endpoints (T-1 and T-2) are provided in Appendix C, with comparison between 2022 and the first year of monitoring. The locations of these photographs are illustrated on Figure A-2 (Appendix A). Refer to previous years' monitoring reports for all previous annual photographs: https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

Functional Assessment – The 2008 Montana Wetland Assessment Method (MWAM; Berglund and McEldowney, 2008) was used to evaluate the functionality of the site in 2022. Five distinct Assessment Areas (AA) were evaluated at the site in 2022; AA1 – Established Wetland Cells 2, 3, and 4; AA2 – Established Wetland Cells 1 and 5; AA3 – Preservation Wetlands; AA4 – Established Wetland Cell 6; and AA5 – Establishment wetlands adjacent to Sand Creek and Preservation Wetlands.

Table 6. Montana Wetland Assessment Method Summary for the Silicon Mountain Site

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2022 AA1 (Established Wetland Cells 2, 3, and 4)	2022 AA2 (Established Wetland Cells 1 and 5)	2022 AA3 (Preservation Wetlands)	2022 AA4 (Established Wetland Cell 6)	2022 AA5 (Wetlands Established along Sand Creek and adjacent to preservation wetlands)
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	Low (0.0)	Low (0.0)	Low (0.0)	Low (0.0)	Low (0.0)
Montana Natural Heritage Program Species (MTNHP) Habitat	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)	Mod (0.5)
General Wildlife Habitat	High (0.9)	High (0.9)	High (0.9)	Mod (0.4)	High (0.9)
General Fish/Aquatic Habitat	NA	NA	NA	NA	Mod (0.6)
Flood Attenuation	NA	NA	NA	NA	High (0.9)
Short- and Long-Term, Surface-Water Storage	Mod (0.6)	High (0.8)	High (1.0)	Low (0.2)	Mod (0.7)
Sediment/Nutrient/Toxicant Removal	High (1.0)	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)
Sediment/Shoreline Stabilization	Mod (0.6)	High (1.0)	Mod (0.7)	Low (0.2)	High (1.0)
Production Export/Food Chain Support	High (0.9)	Exceptional (1.0)	Mod (0.6)	Mod (0.4)	High (0.8)
Groundwater Discharge/Recharge	Mod (0.7)	High (1.0)	High (1.0)	Mod (0.7)	High (1.0)
Uniqueness	Mod (0.5)	Mod (0.6)	Mod (0.6)	Low (0.3)	Mod (0.6)
Recreation/Education Potential (bonus points)	High (0.2)	High (0.2)	High (0.2)	NA	High (0.2)
Actual Points/Possible Points	5.9/9	6.7/9	6.2/9	3.4/9	7.9/11
% of Possible Score Achieved	66%	74%	69%	38%	72%
Overall Category	II	II	II	III	II

AA1 – Established Wetland Cells 2, 3, and 4 are classified as Category II wetlands and received high ratings for General Wildlife Habitat, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, and Recreation/Education Potential. AA2 – Established Wetland Cells 1 and 5 are classified as Category II wetlands and received an exceptional rating for Production Export/Food Chain Support and high ratings for General Wildlife Habitat, Short- and Long-Term Surface-Water Storage, Sediment/Shoreline

Stabilization, Groundwater Discharge/Recharge, and Recreation/Education Potential. AA3 – Preservation Wetlands were also classified as Category II wetlands and received high ratings for General Wildlife Habitat, Short- and Long-Term Surface-Water Storage, and Groundwater Discharge/Recharge, and Recreation/Education Potential. The ecological function provided by AA4 is generally lower than the other AAs and it was rated as a Category III wetland. AA5 encompasses a few different habitat types that were classified as Category II wetlands and received high ratings for General Wildlife Habitat, Flood Attenuation, Sediment and Shoreline Stabilization, and Groundwater Discharge/Recharge (Table 6; Appendix B).

Credit Summary:

Stream Mitigation Credits

The stream mitigation component of the Silicon Mountain project included restoring approximately 4,300 linear feet of Sand Creek, with 3,900 linear feet considered creditable based on location and design. The project is expected to generate a total of 12,369.50 stream mitigation credits (Table 7).

Table 7. Stream Mitigation Credits^a for the Silicon Mountain Site.

Mitigation Reach	Linear Feet	Sum of Mitigation Factors ^(a)	Mitigation Credits
Reach 1	3,250	3.20	10,400.00
Reach 2	650	3.03	1,969.50
Total	3,900		12,369.50

⁽a) From Silicon Mountain Aquatic Resource Mitigation Plan, Watershed #2 – Upper Clark Fork of the Columbia River, Butte-Silver Bow County, MT (Confluence Consulting, Inc., 2013).

Wetland Mitigation Credits

In 2022, 17.93 acres of wetland were delineated at the Silicon Mountain site. Comprising these acres were 8.62 acres of establishment wetlands, 9.31 acres of preservation wetlands, and 3.51 acres of open water. Applying the USACE-approved ratios to these wetland acreages results in an estimated total of 10.95 wetland mitigation credit acres for the site in 2022, given that mitigation ratios for open water have not yet to be approved by the USACE (Tables 8 and 9). Additionally, the 50-foot upland buffer surrounding the aquatic resources comprised 16.72 acres of the site, which generated an additional 3.34 credit acres at a mitigation ratio of 5:1 (Table 8). With the wetland and upland credit acres combined, the site generated a total of 14.29 mitigation credit acres. This value constitutes 2.84 more credit acres than the 11.45 anticipated mitigation credit acres. This is the second year the site has exceeded the anticipated mitigation credit acres.

Functional Unit Credits

Silicon Mountain Mitigation site scored a total of 69.89 functional unit credits in 2022. This score represents an increase of 4.71 points over 2021, even though the MWAM functional unit scores for some individual wetland cells (e.g. Cell 6) decreased in the same timeframe (Tables 8 and 9). The primary reason for this increase is that the wetland acreage on the site has increased. Functional credits are based on the MWAM scores associated with specific wetland polygons (Table 6; Appendix B). Note that upland areas are not evaluated in MWAM assessments and thus the credit acres associated with the upland buffer do not contribute to the functional unit credits.

Table 8. Summary of Mitigation Credits at the Silicon Mountain Site from 2015 (1st year of monitoring) compared to monitoring from 2020 through 2022**

Compensatory Mitigation Type	Mitigation Area Description	Wetland Type ^(b)	Anticipated Mitigation Surface Area Acres	USACE- Approved Mitigation Ratios	Anticipated Mitigation Credit Acres	2015 Delineated Acres	2015 Mitigation Credit Acres	2020 Delineated Acres	2020 Mitigation Credit Acres	2021 Delineated Acres	2021 Mitigation Credit Acres	2022 Delineated Acres	2022 Mitigation Credit Acres
Establishment (Creation)	Wetland Cells 1, 2, 3, 4, 5 & 6	Palustrine Emergent, Aquatic Bed	7.84	1:1	7.84	6.19	6.19	6.04	6.04	8.42	8.42	6.36	6.36
Establishment (Creation)	Additional wetlands surrounding preservation and riparian zone	Palustrine Emergent, Palustrine Scrub- shrub	0.00	1:1	0.00	-	-	-	-	-	-	2.26	2.26
Preservation	Existing Wetland Areas	Palustrine Emergent, Scrub- Shrub	10.06	4:1	2.52	10.24	2.56	9.65	2.41	9.65	2.41	9.31	2.33
Upland Buffer ^(c)	50-Foot-Wide Upland Buffer	N/A	10.80	5:1	2.16	10.80	2.16	10.80	2.16	10.80	2.16	16.72	3.34
Open Water ^(a)	Wetland Cells 1, 4, 5, & 13	Lacustrine/ Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	3.75	TBD	3.24	TBD	3.51	TBD
Mudflat ^(a)	Preserved Wetland Cell 13	Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	0.00	TBD	0.24	TBD	0.00	N/A
	Total Acreage		28.70	NA	11.45	27.23	10.91	30.24	10.61	32.35	12.99	38.16	14.29
Butte S	Silver Bow County Cred	it Acres	2.16	2:1	4.33		4.33		4.33		4.33		4.33
Cre	dit Acres Assigned to N	ИDT	26.54		7.12		6.83		6.28		8.66		9.96

⁽a) Mitigation ratios and crediting for Open Water and Mudflat are To Be Determined (TBD) by the US Army Corps of Engineers.

⁽b) FGDC, 2013

⁽c) In years prior to 2022, upland buffer credits have been reported for the anticipated delineated acres. In 2022, the reporting method switched to actual upland buffer acreages delineated.

^{**} Additional year's monitoring reports can be found at the MDT website

Table 9. 2022 Wetland Functional Credits at the Silicon Mountain Site

Mitigation Area Description	AA	2022 Delineated Acres*	Ratio	2022 Wetland Mitigation Credit Acres	MWAM Actual Points (see Table 6)	Functional Credits (Mitigation Credit Acres × Actual Points)
Wetland Cell 1 (Establishment)	AA2	2.20	1:1	2.20	6.1	13.42
Wetland Cell 2 (Establishment)	AA1	1.59	1:1	1.59	5.9	9.38
Wetland Cell 3 (Establishment)	AA1	0.68	1:1	0.68	5.9	4.01
Wetland Cell 4 (Establishment)	AA1	1.27	1:1	1.27	5.9	7.49
Wetland Cell 5 (Establishment)	AA2	0.44	1:1	0.44	6.1	2.68
Wetland Cell 6 (Establishment)	AA3	0.18	1:1	0.18	3.4	0.61
Riparian and Expansion Wetlands (Establishment)	AA5	2.26	1:1	2.26	7.9	17.85
Preservation	AA4	9.31	4:1	2.33	6.2	14.45
	Total	17.93*		10.95	NA	69.89

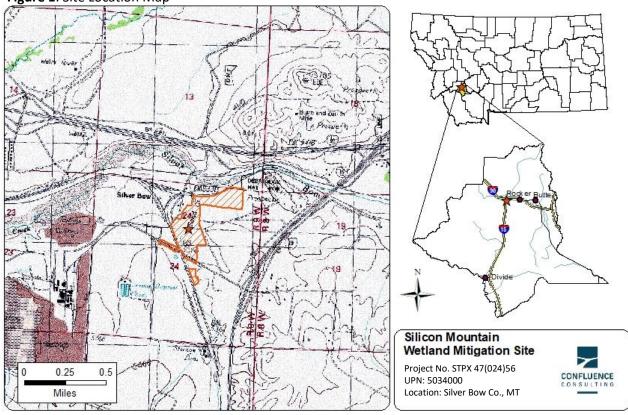
^{*}Does not include Open Water Areas

Conclusions

The Silicon Mountain Mitigation site is continuing to develop into a diverse stream and wetland ecosystem. The site is meeting all established performance criteria and has exceeded the anticipated mitigation credit acreage. All wetland cells, except cell 6, are functioning as intended and wetland acreage continues to increase with each successive monitoring event. The Sand Creek channel form continues to evolve, though the location of the channel has remained static. Willow cuttings installed along the banks of Sand Creek are doing well and streambanks are stable with thriving woody vegetation communities. At this time, no remedial actions are necessary within the stream and wetland areas because the site has continued to develop as intended and the mitigation targets are being achieved. Weed control efforts will continue in 2023 to ensure that the site continues to meet the performance criteria related to noxious weed cover.

Maps, Plans, Photos

Figure 1. Site Location Map



Project Area Maps/Figures: See Appendix A (Figure A-2 – 2022 Monitoring Activity Locations; Figure A-3 – 2022 Mapped Site Features; Figure A-4 – 2022 Wetland Credit Areas; and Figure A-5 – 2022 Wetland Delineation)

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

Plant List: See Appendix B (Table B-1)

Photos: See Appendix C

Channel Cross Sections: See Appendix D

Plans: See Appendix D of 2015 Monitoring Report

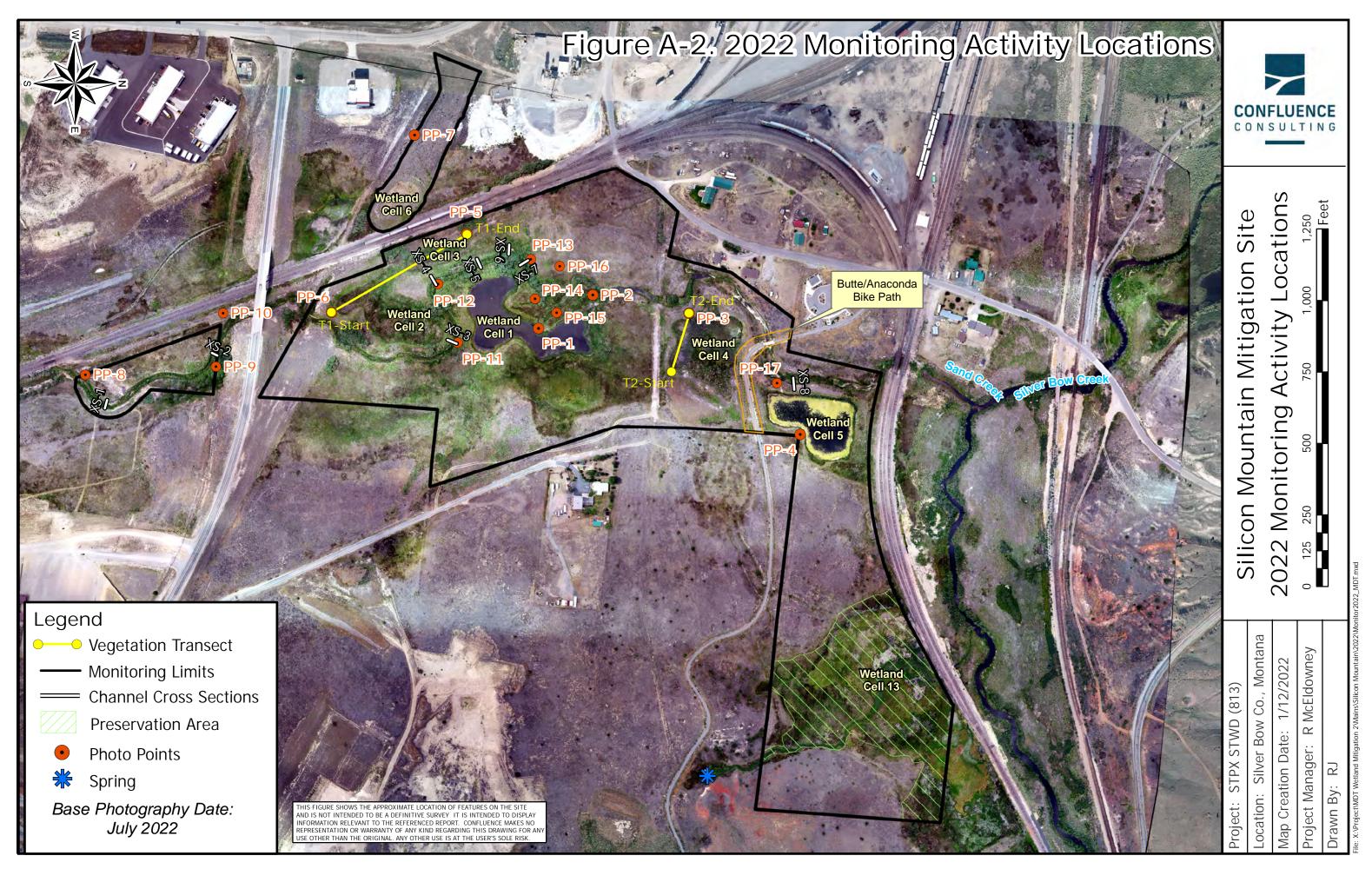
https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

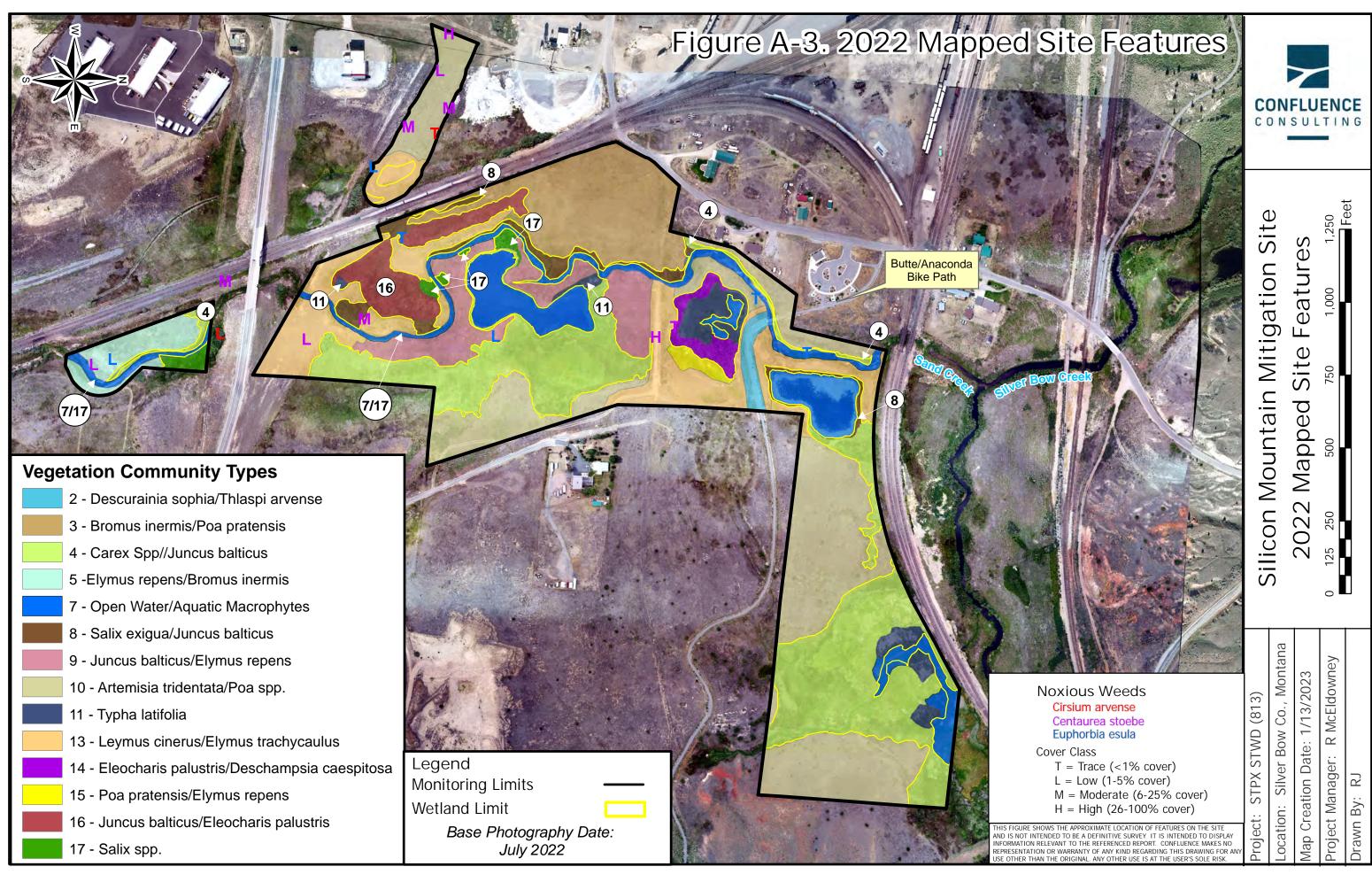
References

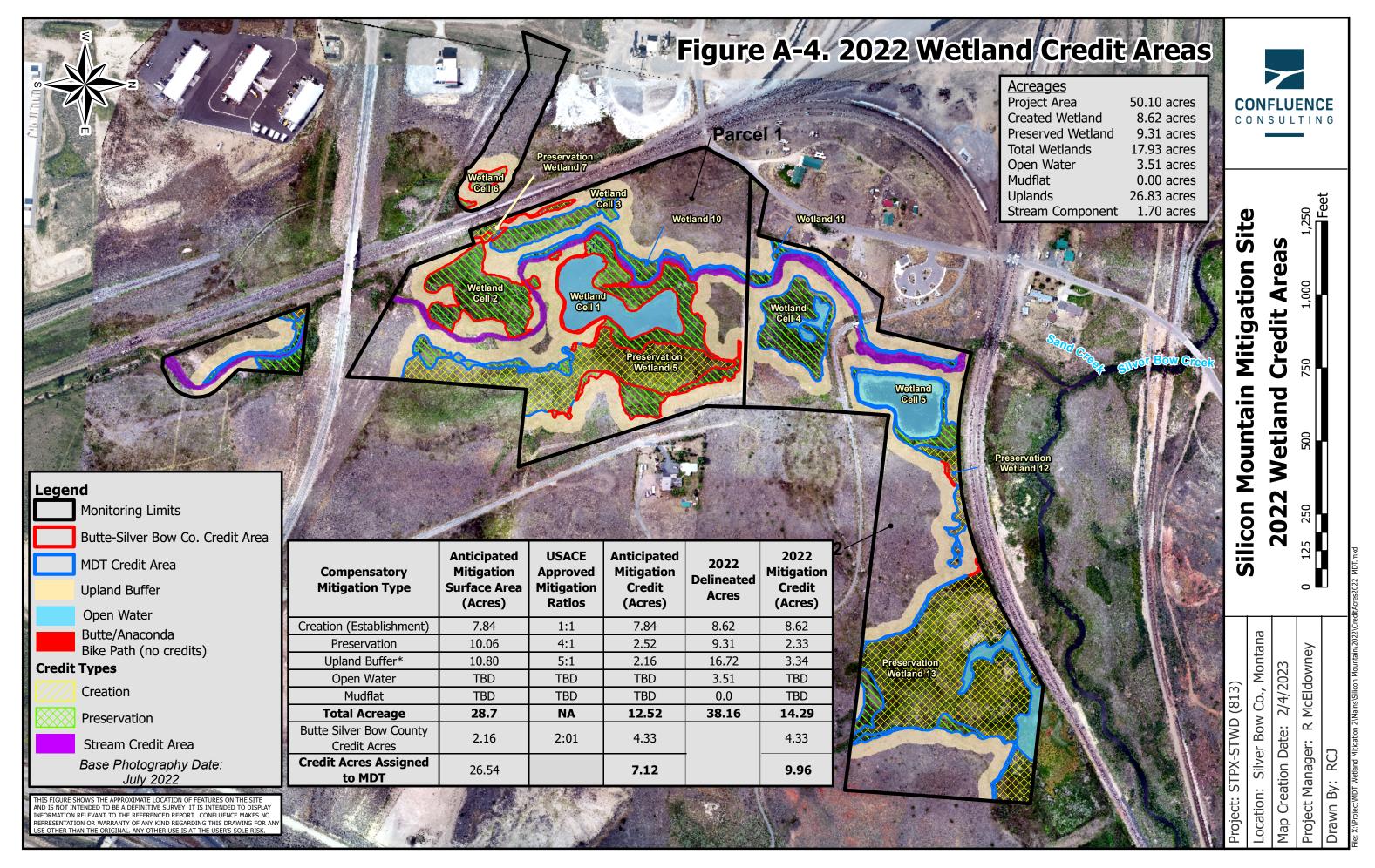
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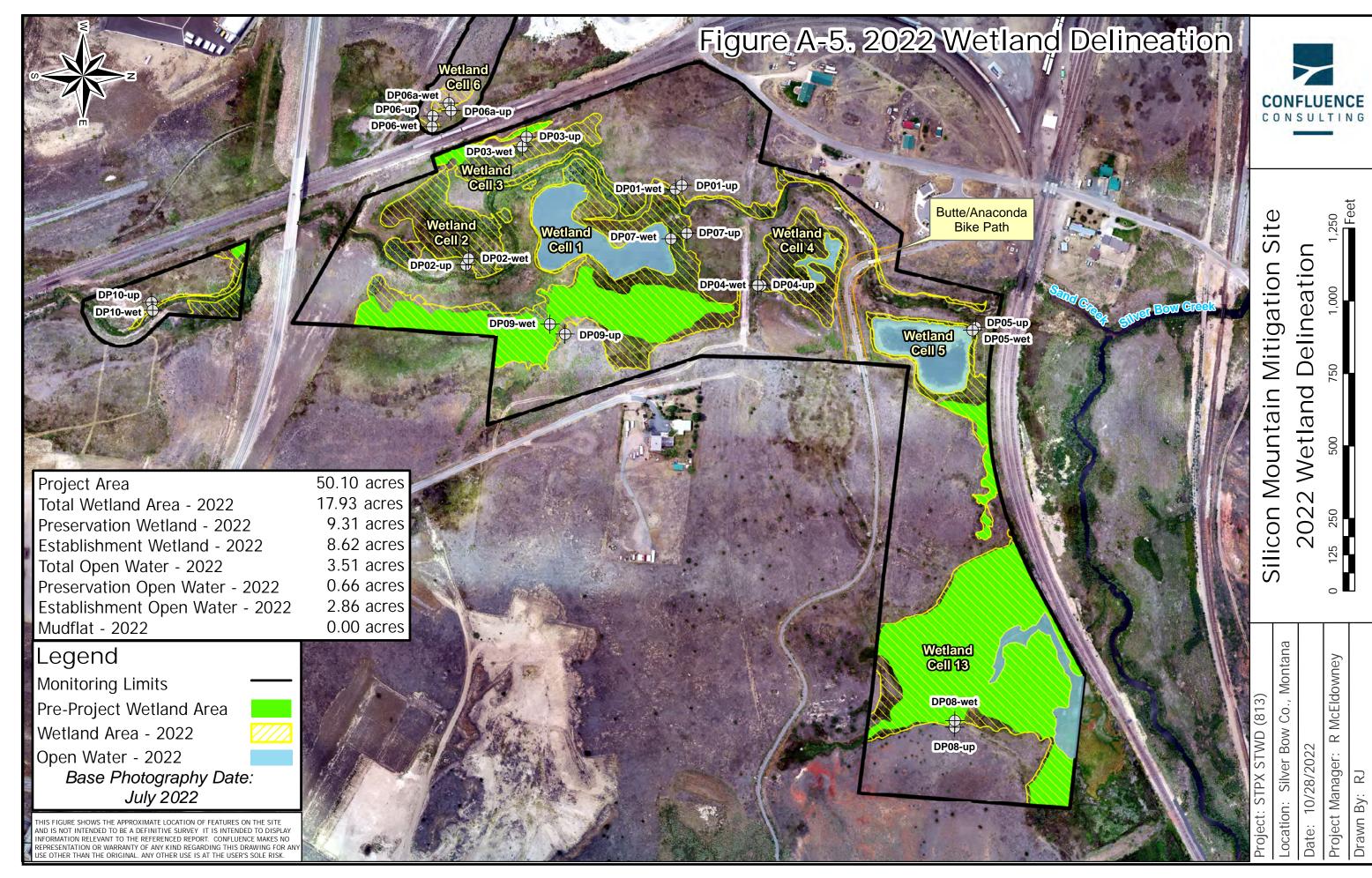
APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana









APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana

Project/Site: Silicon Mountain Wetle		City/Count	y: Silverbow		Sampling D	
Applicant/Owner. MDT and Butte-Sil	ver Bow County			State: Monta	na Sampling P	oint: DP01-up
nvestigator(s): S Weyant, W Fouts		Section, T	ownship, Range:	S 24	T 3N R	9W
andform (hillslope, terrace, etc.): Terr	race	Local relie	f (concave, conv	ex, none): flat		Slope (%): 2
Subregion (LRR): LRR E	Lat:		46.00008 Lor		-112.662871	Datum: NAD 83
oil Map Unit Name: Riverrun, occas	sionally flooded-Mannixle	e, frequently		· -		apped
re climatic / hydrologic conditions on						
re Vegetation, Soil, o					es" present? Ye	s 🗸 No 🗆
re Vegetation, Soil, or		And the second				
UMMARY OF FINDINGS - A	71-81-CC91-122 CO 3 - 5-1-1 C-1	ing sampli	ng point loca	tions, transe	ects, importa	nt features, etc.
Hydrophytic Vegetation Present?	Yes No V		he Sampled Area			
Hydric Soil Present?	Yes No V		hin a Wetland?		□ No S	✓
Wetland Hydrology Present?	Yes No _					
Non-wetland sample point located	d five feet above DP01-w	et to the nort	n of wetland cel	l 1.		
Total Compression						
VEGETATION - Use scientifi	c names of plants					
	Absolute Dom	niant Indica	tor	ominance Tes	workshoot	
<u>Tree Stratum</u> Plot size (30 Foot	Radius) % Cover: Spe	cies? Status	;			
				umber of Domii at are OBL, FA		1 (A)
				otal Number of pecies Across A		4 (B)
	"		Р	· ercent of Domir hat Are OBL, F <i>i</i>	ant Species	25 % (A/B)
	e (15 Foot Radius)		P	revalence Inde	x worksheet	
Artemisia cana	3	FACU	_ _	Total % Co	ver of:	Multiply by:
			C	BL species	0 X 1	0
				ACW species	6 X2	12
				AC species ACU species	40 X3 29 X4	120
Herbaceous Stratum Plot siz	e (5 Foot Radius)			PL species	29 X 4 23 X 5	116 115
Bromus inermis	20	l UPL		olumn Totals		
Elymus repens	30		_ '	L	98 (A)	363 (B)
Elymus trachycaulus	10	FAC		Prevalence	Index = B/A =	3.70408
Euphorbia esula	1 [UPL			getation Indicato	
Juncus balticus	5	FACW		_	•	phytic Vegetation
Lupinus sericeus	2] UPL		2 - Dom	inance Test is >	50%
Poa compressa	25	FACU		3 - Prev	alence Index is <	= 3.0
Solidago canadensis	1	FACU		4 - Mor	hological Adapta	ations (Provide
Solidago gigantea	1 [FACW		support sheet.	ing data in remar	ks or on separate
					and Nam Vacanta	on Diamete
					and Non-Vascula	
				☐ Problem	atic Hydrophytic	Vegetation (Explain)
Woody Vine Stratum Plot siz	e (30 Foot Radius)					hydrology must be matic for #3, 4, 5.
				ydrophytic egetation	Yes □ NO	· •
Percent Bare Ground	5			resent?	IGS 🗀 INC	, <u>.</u>
emarks:						
Data point is dominated by uplan	d and facultative vegetat	ion.				
US Army Corps of Engineers			W	estern Mountai	ns, Valleys, and 0	Coasts - Version 2.0

SOIL									Sampling Point: DP01-up
Profile Des	cription: (I	Describe	to the de	oth needed to docu	ment the in	dicator o	or confirm	the absence	
Depth	TA THE	Matrix	9	Redo	x Features				
(inches)	Color ((moist)	%	Color (moist)	%	Type ¹	Loc2	Texture	Remarks
0-03	10YR	3/2	100				Sa	indy Loam	Many fine roots.
03-16	10YR	3/2	100				Sa	indy Loam	
-				>			-		-
_									-
				>-					=
7									
				=Reduced Matrix, C			d Sand Gra		cation: PL=Pore Lining, M=Matrix.
		: (Applic	able to al	LRRs, unless other		d.)		The state of the state of	ors for Problematic Hydric Soils ³ :
Histoso				Sandy Redox					m Muck (A10)
	pipedon (A	2)		Stripped Matrix			C 510 5 (0.0)		d Parent Material (TF2)
	Histic (A3)			Loamy Mucky		(except	MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (/		10.70	Loamy Gleyed				Oth	er (Explain in Remarks)
	ed Below Da		e (A11)	Depleted Matri				20.000.00	
	ark Surface			Redox Dark Su					ors of hydrophytic vegetation and
	Mucky Mine			Depleted Dark)			and hydrology must be present,
	Gleyed Matr			Redox Depres	sions (F8)			unles	ss disturbed or problematic.
	Layer (if pr	resent):							
Type:	T. T. T.							V.C. 140 5- A	
Depth (ii	nches):	_		_				Hydric Soil	Present? Yes No
HYDROLO	OGY								
Section of the Section	ydrology In			0.500,0,Tuest pt					STATE FALSA BUTA
Primary Ind	icators (mini	imum of c	one require	d; check all that app	ly)			Secon	ndary Indicators (2 or more required)
Surface	Water (A1)			Water-Sta	ined Leaves	s (B9) (ex	cept	V	Vater-Stained Leaves (B9) (MLRA 1, 2
	ater Table (A2)		MLRA	1, 2, 4A, an	nd 4B)			4A, and 4B)
Saturat	ion (A3)			Salt Crust	(B11)				rainage Pattems (B10)
Water I	Marks (B1)			Aquatic In	vertebrates	(B13)			ry-Season Water Table (C2)
Sedime	ent Deposits	(B2)		Hydrogen	Sulfide Odd	or (C1)		s	Saturation Visible on Aerial Imagery (C
Drift De	posits (B3)			Oxidized	Rhizosphere	es along L	iving Root	ls (C3) 🔔 G	Seomorphic Position (D2)
Algal N	lat or Crust ((B4)		Presence	of Reduced	Iron (C4))	s	Shallow Aquitard (D3)
Iron De	posits (B5)			Recent Ire	n Reduction	n in Tilled	Soils (C6)	F	AC-Neutral Test (D5)
	Soil Cracks	s (B6)			r Stressed P				Raised Ant Mounds (D6) (LRR A)
	tion Visible o		magery (E		plain in Rem				rost-Heave Hummocks (D7)
	ly Vegetated		A						
Field Obse			e governous por	134			-1		
	ter Present?	, v	es 🗆	No Depth (in	ches):				
Water Table			es 🗌	No Depth (in			3 .		
							Wester	ad Mudealan	y Present? Yes ☐ No ✔
Saturation I (includes ca	apillary fringe	e)	es	No Depth (in					y Present? Yes No
Describe R	ecorded Dat	a (stream	gauge, m	onitoring well, aerial	photos, pre	vious insp	pections), i	f available:	
Remarks:									
	served to	be mois	t, but no	evidence of wetlan	d hydrolog	y observ	ved.		

Project/Site: Silicon Mountain Wetlan Applicant/Owner MDT and Butte-Silve		_	City/County: Silverbo	State: Montana Sampling Point: DP01-wet
A COLUMN TO THE	l bow County		No action of the second	C OA T ON D OW
vestigator(s): S Weyant, W Fouts			Section, Township, R	
andform (hillslope, terrace, etc.): Flood ubregion (LRR): LRR E		at:		e, convex, none): concave Slope (%): 0 26 Long: -112.662819 Datum: NAD 83
oil Map Unit Name: Riverrun, occasio	nally flooded-Manni	xlee,	frequently flooded c	complex, 0 t NWI classification. Not mapped
re climatic / hydrologic conditions on the	ydrology signif	icantly	disturbed? Are	e "Normal Circumstances" present? Yes 🔽 No 🗌
re Vegetation, Soil, or H :UMMARY OF FINDINGS - Att				needed, explain any answers in Remarks.) locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes V No Yes V No		is the Sample within a Wetla	ed Area
Remarks: PEM riverine wetland. Sample point	located on the fring	e of S	Sand Creek to the no	orth of wetland cell 1.
VEGETATION - Use scientific	names of plants			
<u>Tree Stratum</u> Plot size (30 Foot R	Absolute D	omiar		Dominance Test worksheet
Tiee Stratum 1 lot 3/20 (30 1 oot 10	^{adius)} % Cover: S	pecie	s? Status	Number of Dominant Species that are OBL, FACW or FAC: 3 (A)
				Total Number of Dominant Species Across All Strata: 3 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
Salix lutea	20	V	OBL	Prevalence Index worksheet
- Cally lated	20	V	OBL	Total % Cover of: Multiply by:
				OBL species 104 X 1 104 FACW species 8 X 2 16
				FAC species 3 X3 9
				FACU species 2 X 4 8
<u>Herbaceous Stratum</u> Plot size (5 Foot Radius)			UPL species 3 X 5 15
Carex nebrascensis	25	V	OBL	Column Totals 120 (A) 152 (B)
Carex pellita	45	✓	OBL	Prevalence Index = B/A = 1.26667
Cicuta douglasii	1		OBL	Hydrophytic Vegetation Indicators
Cirsium arvense	3		FAC	1 - Rapid Test for Hydrophytic Vegetation
Descurainia sophia	1	<u> </u>	UPL	✓ 2 - Dominance Test is >50%
Juncus balticus	6		FACU	✓ 3 - Prevalence Index is <= 3.0
Lactuca serriola Lepidium draba	2		FACU UPL	
Mentha arvensis	2		FACW	4 - Morphological Adaptations (Provide supporting data in remarks or on separate
Scirpus microcarpus	10		OBL	sheet.
Solidago canadensis	1		FACU	5 - Wetland Non-Vascular Plants
Typha latifolia	3		OBL	Problematic Hydrophytic Vegetation (Explain)
	30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 0				Hydrophytic Vegetation Present? Ves ✓ NO
Remarks:				1
Evidence of hydrophytic vegetation	includes a positive	domir	nance test and a pre	evalence index less than or equal to 3.0.
US Army Corps of Engineers				Western Mountains, Valleys, and Coasts - Version 2.0
				Joseph Modritaino, valleyo, and Oddoto - version 2.0

Profile Desc	arintian. /					and the second distance of the	J. 45			
	cription: (o the de	pth neede				or confirm t	he absence	of indicators.)
Depth (inches)	Color	(moist)	%	Color	(moist)	x Features %	Type ¹	Loc ²	Texture	Remarks
0-05	10YR	4/3	100	COIOI	(IIIOISI)	70	Type		rse Sand	
										2mm gravels, coarse sand.
05-08	10YR	4/3	100						rse Sand	5mm gravels, coarse sand.
08-16	10Y	2.5/0	60	N	2.5/0	40	_	Fibric-m	nucky Miner	al High organic matter content.
						\equiv				
Type: C=C	oncentratio	n, D=Depl	etion, RN	/I=Reduced	d Matrix, CS	=Covered	or Coate	d Sand Grai	ns. ² Loc	ation: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators	: (Applica	ble to a	II LRRs, u	nless other	wise note	(d.)		Indicato	rs for Problematic Hydric Soils ³ :
Black Hi Hydroge Depleted Thick Da Sandy M	pipedon (A istic (A3) en Sulfide (d Below Da ark Surface Mucky Mine	A4) ark Surface (A12) eral (S1)	: (A11)	Strip Loai Loai Dep Red Dep	dy Redox (Soped Matrix my Mucky M my Gleyed M leted Matrix ox Dark Sur leted Dark S	(S6) lineral (F1 Matrix (F2) (F3) face (F6) Surface (F		MLRA 1)	Red Very Othe	n Muck (A10) Parent Material (TF2) Shallow Dark Surface (TF12) Per (Explain in Remarks) Per of hydrophytic vegetation and and hydrology must be present.
	Sleyed Mat			Red	ox Depressi	ions (F8)			unles	s disturbed or problematic.
Restrictive I	Layer (if p	resent):								
Type:	1177.								VALUES STATE	2005
Depth (in	ches):								Hydric Soil	Present? Yes V No
Hydric soil i	indicator o	of sulfidic	odor wa	as observ	ed. Organi	c matter	content o	observed i	n the lowest	t horizon was very high.
YDROLO	GY		odor wa	as observ	ed. Organi	c matter	content o	observed i	n the lowest	t horizon was very high.
YDROLO	GY drology In	dicators:		0.000	-2: 6		content o	observed i		t horizon was very high.
YDROLO Wetland Hyde Primary Indice Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatic	drology In cators (min Water (A1) ater Table (on (A3) larks (B1) nt Deposits posits (B3) at or Crust posits (B5) Soil Crack on Visible of	dicators: imum of or) A2) (B2) (B4) s (B6) on Aerial Ir	ne requin	ed; check a	all that apply Water-Stair MLRA 1 Salt Crust Aquatic Inv	ned Leave 1, 2, 4A, a (B11) rertebrates Sulfide Od hizospher of Reduce n Reductio Stressed	es (B9) (ex nd 4B) s (B13) for (C1) res along I d Iron (C4 on in Tilled Plants (D1	ccept Living Roots) I Soils (C6)	Secon W Di Si (C3) V G F/ R:	
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturatic Water M Sedimer Drift Dep Algal Ma Iron Dep Surface	drology In cators (min Water (A1) ater Table (on (A3) larks (B1) nt Deposits posits (B3) at or Crust posits (B5) Soil Crack on Visible of y Vegetater vations: er Present? present?	dicators: imum of or) A2) (B2) (B4) s (B6) on Aerial Ir d Concave	magery (I Surface	ed; check a	Water-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Od hizospher of Reducetic Stressed lain in Rei	es (B9) (ex nd 4B) s (B13) or (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	ccept Living Roots) I Soils (C6) I) (LRR A) Wetlar	Secon W Di Si (C3) Y F/ Ri Fr	Idary Indicators (2 or more required) Vater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Pattems (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (Ce) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)
YDROLO Wetland Hyd Primary Indic Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Surface Inundatio Sparsely Field Observ Surface Water Table Saturation Profice Includes cap	drology In cators (min Water (A1) ater Table (on (A3) larks (B1) nt Deposits posits (B3) at or Crust posits (B5) Soil Crack on Visible of y Vegetater vations: er Present? present?	dicators: imum of or) A2) (B2) (B4) s (B6) on Aerial Ir d Concave	magery (I Surface	ed; check a	Water-Stain MLRA 1 Salt Crust (Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrates Sulfide Od hizospher of Reducetic Stressed lain in Rei	es (B9) (ex nd 4B) s (B13) or (C1) res along I d Iron (C4 on in Tilled Plants (D1 marks)	ccept Living Roots) I Soils (C6) I) (LRR A) Wetlar	Secon W Di Si (C3) Y F/ Ri Fr	Idary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Pattems (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (Ce) eomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) rost-Heave Hummocks (D7)

Project/Site: Silicon Mountain Wetla	nd Mitigation Site	_ City/0	County: Silverbow	Sampling Date: 6/13/202	2
Applicant/Owner: MDT and Butte-Silv	ver Bow County	7 7		State: Montana Sampling Point: DP02-up	
Investigator(s): S Weyant, W Fouts		Secti	on, Township, Ran	ge: S 24 T 3N R 9W	
Landform (hillslope, terrace, etc.): <u>Ben</u> Subregion (LRR): <mark>LRR E</mark>	Lat:		45.998243	onvex, none): convex Slope (%):	2
Soil Map Unit Name: Riverrun, occas	ionally flooded-Mannixlee	, frequ	ently flooded con	nplex, 0 t NWI classification;PEM	
	Hydrology significan	tly distu	rbed? Are "N atic? (If nee	(If no, explain in Remarks.) Normal Circumstances" present? Yes Reded, explain any answers in Remarks.) Recations, transects, important features, et]
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes □ No ✔ Yes □ No ✔ Yes □ No ✔		Is the Sampled within a Wetland		
Upland sample point located on a		nd cell :	2.		
VEGETATION - Use scientific	Absolute Domi	ant I	ndicator	Ta	_
Tree Stratum Plot size (30 Foot	Radius) % Cover: Spec	Dominance Test worksheet Number of Dominant Species			
				that are OBL, FACW or FAC:	
				Total Number of Dominant Species Across All Strata: 2 (B)	
Sapling/Shrub Stratum Plot size	e (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 50 % (A/B)	
	,			Prevalence Index worksheet	
				Total % Cover of: Multiply by: OBL species 0 X 1 0	_
				FACW species 5 X2 10	
				FAC species 40 X 3 120	
Harbanaua Ctratum Dist -:	(F Foot Padius)			FACU species 0 X4 0	
	e (5 Foot Radius)	LIP	ol .	UPL species 55 X 5 275	
Astragalus cicer Bromus inermis	2 <u> </u>	UP UP		Column Totals 100 (A) 405 (B)
Elymus repens	10	FA		Prevalence Index = B/A = 4.05	
Juncus balticus	5 🗍		CW	Hydrophytic Vegetation Indicators	
Lepidium draba	3	UP	L	1 - Rapid Test for Hydrophytic Vegetation	
Leymus cinereus	30	FA	C	2 - Dominance Test is >50%	
				☐ 3 - Prevalence Index is <= 3.0 ☐ 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.	
				☐ 5 - Wetland Non-Vascular Plants ☐ Problematic Hydrophytic Vegetation (Expla	ıin\
Woody Vine Stratum Plot size	e (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must b present, unless disturbed or problematic for #3, 4, 5.	e
Percent Bare Ground	0			Hydrophytic Vegetation Present? Ves □ NO ✓	
Remarks:		h. An u	ıpland vegetation	community was present at this data point.	
LIC Americ Course of First				Western Mauntains Walless and Co. 1. V. 1.	
US Army Corps of Engineers				Western Mountains, Valleys, and Coasts - Version 2	(I)

Sampling Point: DP02-up In the absence of indicators.) Texture Remarks Doamy Sand Many fine roots Doamy Sand
pamy Sand Many fine roots
pamy Sand Many fine roots
•
pamy Sand
3) postices Ol - Post linio Matheteli
rains. *Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
2 cm Muck (A10)
Red Parent Material (TF2)
Very Shallow Dark Surface (TF12)
Other (Explain in Remarks)
3Indicators of hydrophytic vegetation and
wetland hydrology must be present,
unless disturbed or problematic.
Unalati and the plan p
Hydric Soil Present? Yes No
Secondary Indicators (2 or more required)
Water-Stained Leaves (B9) (MLRA 1, 2
4A, and 4B)
Drainage Pattems (B10)
Dry-Season Water Table (C2)
Saturation Visible on Aerial Imagery (CS
ots (C3) Geomorphic Position (D2)
Shallow Aquitard (D3)
FAC-Neutral Test (D5)
Raised Ant Mounds (D6) (LRR A)
Frost-Heave Hummocks (D7)
and Hydrology Present? Yes No
if available:

Applicant/Owner: MDT and Butte-Silver Bow County Investigator(s): S Weyant, W Fouts Section, Township, Range: S 24 T 3N R 9W Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): Subregion (LRR): LRR E Lat: 45.998263 Long: -112.661854 Datum: NAD Soil Map Unit Name: Riverrun, occasionally flooded-Mannixlee, frequently flooded complex, 0 t NWI classification. PEM 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 naturally problematic? (If needed, explain any answers in Remarks.) SUMMARY OF FINDINGS — Attach site map showing sampling point locations, transects, important features Hydrophytic Vegetation Present? Yes No within a Wetland? Yes No No No Wetland Hydrology Present? Yes No No Wetland Hydrology Present? Yes No No No No No No No No No N	Project/Site: Silicon Mountain Wetland Mitigation Site	City/C	ounty: Silverbow		Sampling Da	6/13/2022
Local relief (concave, convex, none); Concave Slope (%); Subregion (LRR) LRR E	Applicant/Owner: MDT and Butte-Silver Bow County			State: Montana	Sampling Po	int: DP02-wet
Associate Lat 4.5.998263 Long: 1.12.661854 Datum NAD	nvestigator(s): S Weyant, W Fouts	Sectio	n, Township, Range	S 24 T	3N R	9W
No	Subregion (LRR): LRR E	d:	45.998263	ong:1	12.661854	Slope (%):3 Datum: NAD 83
Are *Normal Circumstances* present? Yes No Nere Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)	Soil Map Unit Name: Riverrun, occasionally flooded-Mannix	dee, freque	ntly flooded comp	lex, 0 t NWI classifi	cation;PEM	
Hydric Soil Present? Yes Ves No	re Vegetation, Soil, or Hydrology significant Vegetation, Soil, or Hydrology natural	cantly disturt	oed? Are "No tic? (If needs	mal Circumstances" ed, explain any answ	present? Yes ers in Remarks	i.)
VEGETATION - Use scientific names of plants Tree Stratum Plot size (30 Foot Radius) Absolute % Cover. Dominant Species? Sapling/Shrub Stratum Plot size (15 Foot Radius) Poot Radius) Herbaceous Stratum Plot size (15 Foot Radius) Alopecurus pratensis 15 FAC Carex nebrascensis 10 OBL Carex pellita 10 OBL Elymus repens 5 OBL Elymus repens 5 FACW Juncus effusus 25 V FACW Juncus effusus 25 V FACW Woody Vine Stratum Plot size (30 Foot Radius) Percent Bare Ground O **Remarks:* Dominant Species **Number of Dominant Species **Intal Re OBL, FACW or FAC: **100 Main Species Problematic Pack of Pack (B) Percent Bare Ground 0 District Providence Index worksheet Total Number of Dominant Species Problematic Species Across All Strata: **2 (A) 100 Main Carca Pack (B) 4 Dominant Species Pack (B) 100 Main Carca Pack (B) 4 Dominant Species (B) 100 Main Carca Pack (B) 4 Dominant Species (B) 100 Main Carca Pack (B) 5 X2 110 Main Carca Pack (B) 6 Date Pack (B) 100 Main Carca Pack (B) 10 Main Carca Pack (B) 100 Main Carca Pack (B) 10 Main Carca Pack (B) 100 Main Carca Pack (B) 10 Main Carca Pack (B)	Hydric Soil Present? Yes ✓ No Wetland Hydrology Present? Yes ✓ No				No_	
Absolute Species Status Manual Species Status Manual Manual	PEM depressional wetland. Sample point in excavated w	vetland cell	2 at the toe of the	slope on which DI	P02-up was l	ocated.
Tree Stratum Plot size (30 Foot Radius) % Cover: Species? Status Number of Dominant Species that are OBL, FACW or FAC:	·					
Sapling/Shrub Stratum Plot size (15 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis Acarex nebrascensis 10 OBL Eleocharis palustris Eleocharis palustris 5 OBL Elymus repens 5 FAC Juncus effusus Dyncus effusus Woody Vine Stratum Plot size (30 Foot Radius) Hat are OBL, FACW or FAC: 2 (A) Total Number of Dominant Species 100 % (a) Percent of Dominant Species 100 % (a) Percent of Dominant Species 100 % (a) Prevalence Index worksheet Total % Cover of: Multiply by 00	The Continue District (OC Foot Dedicts)	tatus				
Sapling/Shrub Stratum Plot size (15 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis Carex nebrascensis 10 0 0BL Carex pellita 10 0 0BL Eleocharis palustris Elymus repens Juncus effusus Diuncus effusus Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Prevalence Index worksheet Total % Cover of: Multiply by OBL species 25 X1 25 FACW species 55 X2 110 FAC species 20 X3 60 FACU species 0 X4 0 UPL species 0 X4 0 UPL species 0 X5 0 Column Totals 100 (A) 195 Prevalence Index = B/A = 1.95 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation Indicators of hydric sil and weltand hydrology my present, unless disturbed or problematic for #3, Hydrophytic Vegetation Yes V NO Present?				that are OBL, FACW	or FAC:	2 (A)
Sapling/Shrub Stratum Plot size (15 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis 15 FAC Carex nebrascensis 10 OBL Eleocharis palustris Eleocharis palustris 5 OBL Elymus repens 5 FAC Juncus effusus 5 FAC Juncus effusus 7 FACW Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Percent Bare Ground Percent Bare Ground Plot size (10 Foot Radius) That Are OBL, FACW, or FAC: Prevalence Index worksheet Total % Cover of:				Species Across All S	trata:	2 (B)
Prevalence Index worksheet Total % Cover of: Multiply by Debuggeries 25 x 1 25	Sapling/Shrub Stratum Plot size (15 Foot Radius)					100 % (A/B)
Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis 15 FAC Carex nebrascensis 10 OBL Eleocharis palustris 5 OBL Elymus repens 5 FAC Juncus effusus 25 FACW Juncus effusus 25 FACW Woody Vine Stratum Plot size (30 Foot Radius) Noody Vine Stratum Plot size (30 Foot Radius) OBL species 25 X 1 25 FACW species 55 X 2 110 FAC OUML species 0 X 4 0 UPL species 0 X 5 0 Column Totals 100 (A) 195 Prevalence Index = B/A = 1.95 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetat 1 - Rapid Test for Hydrophytic Vegetat 2 - Dominance Test is >50% 4 - Morphological Adaptations (Provide supporting data in remarks or on sepa sheet. 5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Elemants) Hydrophytic Vegetation (Elemants) Percent Bare Ground 0 Percent Bare Ground 0	,					
Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis 15 FAC Carex nebrascensis 10 OBL Carex pellita 10 OBL Eleocharis palustris 5 OBL Elymus repens 5 FAC Juncus balticus 30 ✓ FACW Juncus effusus 25 ✓ FACW Woody Vine Stratum Plot size (30 Foot Radius) FACW species 55 X 2 110 FAC Species 20 X 3 60 FACU species 0 X 4 0 UPL species 0 X 5 0 Column Totals 100 (A) 195 Prevalence Index = B/A = 1.95 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provides supporting data in remarks or on sepasheet. 5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Elimicators of hydric sil and wetland hydrology mupresent, unless disturbed or problematic for #3, which is the standard of the present of th						
Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis 15				•		
Herbaceous Stratum Plot size (5 Foot Radius) Alopecurus pratensis 15				•		
Alopecurus pratensis Alopecurus pratensis Carex nebrascensis 10						0
Carex nebrascensis Carex pellita Dal Eleocharis palustris Elymus repens Juncus balticus Juncus effusus Description The stratum Plot size (30 Foot Radius) Percent Bare Ground OBL Brevalence Index = B/A = 1.95 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - No Indicators of Hydrophytic Vegetation 2 - No Indicators of Hydrophytic Vegetation 2 - No Indicators of Hydrophytic Vegetation 3 - No Indicators o	Herbaceous Stratum Plot size (5 Foot Radius)			UPL species	0 X5	0
Carex pellita 10 □ OBL Eleocharis palustris 5 □ OBL Elymus repens 5 □ FAC Juncus balticus 30 ☑ FACW Juncus effusus 25 ☑ FACW Woody Vine Stratum Plot size (30 Foot Radius) Prevalence Index = B/A = 1.95 Hydrophytic Vegetation Indicators □ 1 - Rapid Test for Hydrophytic Vegetation □ 2 - Dominance Test is >50% ☑ 3 - Prevalence Index is <= 3.0 □ 4 - Morphological Adaptations (Provide supporting data in remarks or on sepasheet. □ 5 - Wetland Non-Vascular Plants □ Problematic Hydrophytic Vegetation (Elndicators of hydric sil and wetland hydrology mapresent, unless disturbed or problematic for #3, which is the state of the present? Percent Bare Ground 0 Remarks:				Column Totals	100 (A)	195 (B)
Eleocharis palustris Elymus repens 5				Prevalence Inde	ex = B/A =	1.95
Elymus repens S				Hydrophytic Vegeta	tion Indicator	's
Juncus balticus Juncus effusus 2 - Dominance Test is >50% 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on sepasheet. 5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (E Indicators of hydric sil and wetland hydrology mupresent, unless disturbed or problematic for #3, which is the standard of the present? Percent Bare Ground 0 Present? NO □ Present?	-					
Juncus effusus 25	I	_		2 - Domina	nce Test is >50)%
Woody Vine Stratum Plot size (30 Foot Radius) Percent Bare Ground 0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (E Indicators of hydric sil and wetland hydrology mupresent, unless disturbed or problematic for #3, · Hydrophytic Vegetation Yes ✓ NO □ Present?	-			3 - Prevaler	nce Index is <=	: 3.0
Woody Vine Stratum Plot size (30 Foot Radius) Problematic Hydrophytic Vegetation (E Indicators of hydric sil and wetland hydrology me present, unless disturbed or problematic for #3, Hydrophytic Vegetation Ves ✓ NO □ Present? Remarks:				supporting		
Woody Vine Stratum Plot size (30 Foot Radius) Hydrophytic Vegetation Percent Bare Ground 0 Percent Bare Ground 0 Indicators of hydric sil and wetland hydrology mupresent, unless disturbed or problematic for #3, Hydrophytic Vegetation Present?						
Percent Bare Ground 0 Vegetation Yes ✓ NO ☐ Present?	Woody Vine Stratum Plot size (30 Foot Radius)			ndicators of hydric sil	and wetland h	nydrology must be
Remarks:	Porcent Rara Ground			Vegetation	Yes ▼ NO	
Evidence of hydrophytic vegetation included a positive dominance test and a prevalence index less than or equal to 3.0.	Remarks:	_				
	Evidence of hydrophytic vegetation included a positive of	dominance t	test and a prevale	nce index less tha	n or equal to	3.0.
US Army Corps of Engineers Western Mountains, Valleys, and Coasts - Versi	LIS Army Corps of Engineers		,	Western Mountains	Valleve and C	nasts - Version 2.0

Profile Desc												mpling Point: DP02-wo
	cription: (to the de	pth need	ed to docun			r or con	firm the a	bsence	of indicator	rs.)
Depth (inches)	Color	Matrix (moist)	%	Colo	Redo:	x Feature: %	Type ¹	Loc2	Te	xture		Remarks
0-02	10YR	3/2	100	0010	(moist)		Type		Sandy L		Roots	Remarks
02-09	10YR	4/2	100								Roots	
				-> /5	110				Sandy L			
06-16	10YR	5/1	95	5YR	4/6	5	<u>C</u>	PL 	Sandy L	_oam	-	
							-				=	
					ed Matrix, CS			ted Sand				Pore Lining, M=Matrix
		: (Applica	able to a		unless other		ed.)			100		ematic Hydric Soils ³ :
Black Hi Hydroge Depleted Thick Da	(A1) pipedon (A istic (A3) en Sulfide (d Below Da ark Surface Mucky Mine Gleyed Mat	A4) ark Surface a (A12) eral (S1)	B (A11)	Stri	ndy Redox (S ipped Matrix amy Mucky M amy Gleyed I pleted Matrix dox Dark Sui pleted Dark S dox Depress	(S6) Ineral (F° Matrix (F2 (F3) rface (F6) Surface (F).	pt MLRA		Red Very Other	er (Explain in rs of hydrop nd hydrology	erial (TF2) irk Surface (TF12)
Restrictive I					an Dapitos				-	4,0,00		, prostottano
Type:												
Depth (in	ches):								Hyd	ric Soil	Present?	Yes 🗸 No 🗆
YDROLO	77.0	dicators:										
Section in the Section	The state of the s		ne requir	ed check	all that apply	/)				Secon	dary Indicate	ors (2 or more required)
Sedimer Drift Dep Algal Ma Iron Dep Surface Inundati	ater Table (on (A3) larks (B1) nt Deposits posits (B3) at or Crust posits (B5) Soil Crack on Visible ((B2) (B4) (B6) on Aerial II			Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence o Recent Iron Stunted or Other (Exp	1, 2, 4A, a (B11) vertebrate Sulfide Od thizospher of Reduce n Reduction Stressed	nd 4B) s (B13) for (C1) res alon d Iron (Con in Till Plants (g Living f C4) led Soils	(C6)	D D S G G S F R	4A, and 4E rainage Path ry-Season Waturation Vis eomorphic Phallow Aquita AC-Neutral Taised Ant Mo	ems (B10) Vater Table (C2) ible on Aerial Imagery (Position (D2) ard (D3)
Field Obser	er Present	Y	es V	No No	Depth (inc	hes):		4 0 0	etland Hy	(drolog)		Yes ✔ No
Water Table Saturation Pr (includes cap	pillary fring	e)	gauge, n			hotos, pr	evious ir				y Present?	Tes No
Surface Water Water Table Saturation Pro (includes cap Describe Rec	pillary fring	e)				hotos, pr	evious ir				y Present?	res_wNo

	tain Wetland Mitigation Site	City/County: Silverbow	Sampling Date: 6/13/2022
Transfer of the Contract of th	Butte-Silver Bow County	Anna America de C	State: Montana Sampling Point: DP03-up
nvestigator(s): S Weyant,		Section, Township, Rang	
andform (hillslope, terrace,		Local relief (concave, co	
Subregion (LRR): LRR E	Lat:		Long:112.663393NAD 83
			plex, 0 t NWI classification. Not mapped
	ditions on the site typical for this time of		
	, or Hydrology significan		ormal Circumstances" present? Yes 🗹 No
Are Vegetation, Soil	, or Hydrology naturally	problematic? (If need	ded, explain any answers in Remarks.)
SUMMARY OF FINDI	NGS – Attach site map showi	ng sampling point lo	cations, transects, important features, etc.
Hydrophytic Vegetation Pr Hydric Soil Present? Wetland Hydrology Preser	Yes _ No _ □	Is the Sampled A	
Remarks:	int located on a bench between the	arms of cell 3 and rough	ly 3 feet higher than DP03-w
Non-welland Sample po	int located on a bench between the	anns of cen 5 and rough	ly 3 leet higher than bros-w.
VEGETATION - Use	scientific names of plants		
	(20 Fact Radius) Absolute Dom		Dominance Test worksheet
Tiee Stratum Piot Size	(30 Foot Radius) % Cover: Spec	ies? Status	Number of Dominant Species that are OBL, FACW or FAC:
			Total Number of Dominant Species Across All Strata: 1 (B)
Sapling/Shrub Stratum	Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)
			Prevalence Index worksheet
			Total % Cover of: Multiply by: OBL species 0 X 1 0
			OBL species 0 X1 0 FACW species 1 X2 2
			FAC species 2 X 3 6
	51		FACU species 0 X 4 0
Herbaceous Stratum	Plot size (5 Foot Radius)	LIBI	UPL species 97 X 5 485
Bromus inermis Festuca ovina	92 v	UPL UPL	Column Totals 100 (A) 493 (B)
Juncus balticus		FACW	Prevalence Index = B/A = 4.93
Poa pratensis	2	FAC	Hydrophytic Vegetation Indicators
			1 - Rapid Test for Hydrophytic Vegetation
			☐ 2 - Dominance Test is >50%
			3 - Prevalence Index is <= 3.0
			 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
			5 - Wetland Non-Vascular Plants
			☐ Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum	Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare G	round 5		Hydrophytic Vegetation Yes □ NO Present?
Remarks:			
ınıs data poınt is domir	nated by upland vegetation.		
US Army Corps of Engine	are		Western Mountains, Valleys, and Coasts - Version 2.0
OO ATTITY COLPS OF ETIGINE	G13		vvestern iviountains, valleys, and Coasts - version 2.0

SOIL											Sampling Point: DP03-up
Profile Des	cription: (Describe	to the de	pth neede	d to docun	nent the i	ndicato	rorco	nfirm	the absence of	
Depth	-	Matrix				x Features			3	27.1	
(inches)		(moist)	%	Color	(moist)	%	Type	Lo		Texture	Remarks
0-04	10YR	3/2	100						CI	ay Loam	Many fine roots.
04-11	2.5Y	4/2	92	10YR	5/6	8	С	M,	Loa	amy Sand	
11-16	10YR	4/3	60	N	2.5/0	40			Sand	y Clay Loam	Mixed matrix
	A.III.								_	100	1
	-		_	>===		_	-	·-	_		
						_	_	-			
					d Matrix, CS			ted Sa	nd Gra		ation: PL=Pore Lining, M=Matrix.
Hydric Soil		: (Applic	able to al				(d.)			the state of the state of	s for Problematic Hydric Soils ³ :
Histoso					dy Redox (S						Muck (A10)
	pipedon (A	.2)			ped Matrix						Parent Material (TF2)
	fistic (A3)				my Mucky M			pt MLF	(1 AS		Shallow Dark Surface (TF12)
	en Sulfide				my Gleyed I),			Other	r (Explain in Remarks)
	ed Below Da		e (A11)		leted Matrix					2	
	ark Surface				ox Dark Sur						s of hydrophytic vegetation and
	Mucky Mine				leted Dark S	and the second second	7)				d hydrology must be present,
	Gleyed Mat			Red	ox Depress	ions (F8)				unless	disturbed or problematic.
Restrictive	Layer (if p	resent):									
Type:											and the second
Depth (in	nches):									Hydric Soil F	Present? Yes 🔽 No 🗌
IYDROLO	ngv										
Wetland Hy	2770	dicators:							_		
Primary Ind				d; check a	all that apply	()				Second	dary Indicators (2 or more required)
	Water (A1				Water-Stail		s (B9) (excep			ater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table					1, 2, 4A, a	11.201.20				4A, and 4B)
	ion (A3)	(1-12)			Salt Crust		114 407				ainage Pattems (B10)
	Marks (B1)				Aquatic Inv		/R13)				y-Season Water Table (C2)
	ent Deposits	(P2)		_	Hydrogen S						turation Visible on Aerial Imagery (C9
	posits (B3)	0		_	Oxidized R			a Lipina	Doot		comorphic Position (D2)
						and the second			Kool		
	lat or Crust			_	Presence of				(00)		allow Aquitard (D3)
	posits (B5)			_	Recent Iron						C-Neutral Test (D5)
	Soil Crack			_	Stunted or			D1) (LI	RR A)		ised Ant Mounds (D6) (LRR A)
	tion Visible		A		Other (Exp	lain in Rei	marks)			Fro	ost-Heave Hummocks (D7)
	ly Vegetate	d Concav	e Surface	(B8)							
Field Obse	rvations:					e. k					
Surface Wa	ter Present	5 A	es_L	No _	Depth (inc	:hes):					
Water Table	Present?	Y	es	No 🗸	Depth (inc	ches):		_			
Saturation F (includes ca			es	No 🗸	Depth (inc	ches):		_	Wetla	nd Hydrology	Present? Yes No
Describe Re	ecorded Da	ta (stream	gauge, n	onitoring v	well, aerial p	hotos, pre	evious in	spection	ons), if	available:	
Remarks:											
No evidend	e of wetla	nd hvdro	logy obs	erved							
TTO OVIGORIO	o or would	ila liyalo	logy obo	orvou.							

Project/Site: Silicon Mountain Wetlan		City/C	ounty: Silverbow	Sampling Date: 6/13/2022
Applicant/Owner: MDT and Butte-Silve	er Bow County			State: Montana Sampling Point: DP03-wet
nvestigator(s): S Weyant, W Fouts		Section	on, Township, Rang	e: S 24 T 3N R 9W
andform (hillslope, terrace, etc.): Depre Subregion (LRR): LRR E	Lat:		45.998689	
Soil Map Unit Name: 12A: Riverrun, od	ccasionaly flooded-Man	nixlee, fr	equently flooded	NWI classification PEM
Are climatic / hydrologic conditions on the Are Vegetation, Soil, or Hare Vegetation, Soil, or H	lydrology significations signification si	ntly distur	bed? Are "No atic? (If need	ormal Circumstances" present? Yes 🗹 No 🔲
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes	11	Is the Sampled A within a Wetland	
The state of the s	point located in Wetlar	nd Cell 3	in between the ra	ailroad tracks and Sand Creek channel.
VEGETATION - Use scientific	names of plants			
Tree Stratum Plot size (30 Foot R	Absolute Dom adius) % Cover: Spec		ndicator status	Dominance Test worksheet
	7 % Cover. Spec	nes! 3	otatus	Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
				Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
<u></u>	,0			Prevalence Index worksheet
				Total % Cover of: Multiply by:
				OBL species 15 X 1 15
				FACW species 30 X 2 60 FAC species 52 X 3 156
				FACU species 0 X4 0
Herbaceous Stratum Plot size (5 Foot Radius)			UPL species 3 X 5 15
Agrostis stolonifera	5	FAG	С	Column Totals 100 (A) 246 (B)
Alopecurus pratensis	40	FAG	C	
Carex utriculata	7	ОВ	L	Prevalence Index = B/A = 2.46
Cirsium arvense	5	FAG	<u> </u>	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Juncus balticus	7	FAG	CW	
Lepidium draba	3	UP	<u>L</u>	✓ 2 - Dominance Test is >50%
Phalaris arundinacea	20 🗸			✓ 3 - Prevalence Index is <= 3.0
Poa pratensis	2	FAG		4 - Morphological Adaptations (Provide
Potentilla anserina	8	OB		supporting data in remarks or on separate sheet.
Symphyotrichum ciliatum	3	FAC	CW_	5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Explain
Woody Vine Stratum Plot size (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 6				Hydrophytic Vegetation Present? Ves ✓ NO
Remarks:		minance	Test and a Preva	alence Index less than or equal to 3.0.

Profile Descr	ription: /r	Jeserihe.	to the de	oth needs	ייייייי מל מ	ment the .		L Or con	titus .	THE ADECDRACE			
Depth	cription: (Describe to the de			purneeue				or com		ine absence	of malcators.		
(inches)	Matrix Color (moist) %			Redox Features Color (moist) % Type ¹ Loc ²						Texture	Remarks		
0-05	10YR	2/1	100							Loam	Many fine roots		
05-16+	2.5YR	4/2	93	5Y	5/1	5	D	M	San	ndy Loam			
05-16+				7.5YR	4/6	2	С	М	San	ndy Loam			
								1					
				-			_	-					
Type: C=Co								ited Sand	d Grai		ation: PL=Pore Lining, M=Matrix.		
lydric Soil Ir	ndicators	(Applic	able to a	II LRRs, ur	less othe	rwise note	ed.)			the state of the state of	s for Problematic Hydric Soils ³ :		
Histosol (dy Redox (2 cm Muck (A10)			
	ipedon (A2	2)			ped Matrix					Red Parent Material (TF2)			
Black His						Mineral (F1		pt MLRA	(1)		Very Shallow Dark Surface (TF12)		
	Sulfide (A					Matrix (F2)			Othe	r (Explain in Remarks)		
	Below Da		e (A11)		eted Matri								
	rk Surface					ırface (F6)					s of hydrophytic vegetation and		
	ucky Mine					Surface (F	7)				d hydrology must be present,		
	leyed Matr			Red	ox Depress	sions (F8)				unless	disturbed or problematic.		
Restrictive L	ayer (if pr	resent):											
Туре:	Carrier V.												
Depth (inc	hes):									Hydric Soil	Present? Yes V No		
				nmon with				d					
YDROLOG	edoximor	ohic cond	centratio					d					
YDROLOG	GY rology Inc	condition of the distance of t	centratio	ns few wi	thin the d	epleted m		d					
YDROLOG	GY rology Inc	condition of the distance of t	centratio	ns few wi	thin the d	epleted m		d			dary Indicators (2 or more required)		
YDROLOG Vetland Hyd Primary Indica	GY rology Incators (mini	dicators:	centratio	ns few wi	thin the d	epleted m	natrix.				dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2		
YDROLOG Vetland Hyd Primary Indica	GY rology Industrial	dicators:	centratio	ns few wi	thin the d	epleted m	es (B9)	(except			a TRANSPORT FOR A THE ARRANGED AND		
YDROLOG Vetland Hyd Primary Indica Surface V	GY rology Inc ators (mini Nater (A1) er Table (A	dicators:	centratio	ns few wi	thin the d	epleted m	es (B9)	(except		w	ater-Stained Leaves (B9) (MLRA 1, 2		
YDROLOG Vetland Hyd Primary Indica Surface V	GY rology Indators (mini Nater (A1) ter Table (A	dicators:	centratio	ns few wi	thin the dithin the di	epleted m	es (B9) nd 4B)	(except		w	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)		
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Saturation Water Ma	GY rology Indiators (mini Nater (A1) er Table (A) n (A3) arks (B1)	dicators:	centratio	ns few wi	thin the dithin the disputed that app. Water-Sta MLRA Salt Crust Aquatic In	epleted m	es (B9) nd 4B) s (B13)	(except		W Dr Dr.	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10)		
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Y Saturation Water Ma	edoximorp rology Indators (mini Nater (A1) ter Table (A1) arks (B1) I Deposits	dicators:	centratio	ns few wi	thin the d	ly) lined Leave 1, 2, 4A, a (B11) livertebrates Sulfide Oct	es (B9) ond 4B) s (B13)	(except	Roots	W	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Cs		
YDROLOG Vetland Hyd Primary Indica Surface V High Wat ✓ Saturation Water Ma Sediment Drift Depo	rology Indiators (minimum (A1) ther Table (A1) ther (A3) ther (A3) there (B1) there (B3) there (B3)	dicators: mum of o	centratio	ns few wi	thin the d	ly) ined Leave 1, 2, 4A, a (B11) ivertebrate: Sulfide Oc Rhizosphei	es (B9) ond 4B) s (B13) dor (C1) res alon	(except	Roots	□ W □ Dr □ Dr □ Sa (C3) ☑ Ge	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Cs comorphic Position (D2)		
YDROLOG Vetland Hyd Primary Indica Surface V High Wat Vater Ma Sediment Drift Depo	rology Inc ators (mini Nater (A1) ter Table (And (A3) ter (A3) ter (B1) t Deposits to Crust (B3)	dicators: mum of o	centratio	ns few wi	Ill that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence	ly) lined Leave 1, 2, 4A, a (B11) vertebrates Sulfide Oc Rhizospher of Reduce	es (B9) ond 4B) s (B13) dor (C1) res alon d fron (C	(except g Living I		W Dr Dr Sa (C3) Ge Sh	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (Co comorphic Position (D2) allow Aquitard (D3)		
YDROLOG Vetland Hyd Primary Indica Surface V High Wat V Saturation Water Ma Sediment Drift Depo	rology Inc ators (mini Nater (A1) ter Table (A1) arks (B1) t Deposits osits (B3) t or Crust (Dosits (B5)	dicators: mum of o	centratio	ns few wi	Il that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro	ly) lined Leave 1, 2, 4A, a (B11) livertebrate: Sulfide Oc Rhizospher of Reduce	es (B9) ond 4B) s (B13) dor (C1) res alon d Iron (con in Till	g Living (C4)	(C6)	W Dr Dr Sa (C3)	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (Ca comorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5)		
YDROLOG Vetland Hyd Vetland Indica Surface V High Wat Y Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S	rology Indiators (mini Nater (A1) ter Table (A1) ter Table (B1) t Deposits osits (B3) t or Crust (osits (B5) Soil Cracks	dicators: mum of o (B2) (B4)	ne requin	ed; check a	Il that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro Stunted o	ly) lined Leave 1, 2, 4A, a (B11) livertebrates Sulfide Oc Rhizospher of Reduce on Reduction	es (B9) ond 4B) s (B13) dor (C1) res alon d Iron (Con in Till Plants (g Living (C4)	(C6)	UMDr Dr Dr Sa (C3) Ge Sh FA	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (Ca ecomorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)		
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YDROLOG Wetland Hyd Primary Indica Surface V High Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Surface Water Table F Saturation Pre (includes capi Describe Reco	rology Indators (minimal Nater (A1) arks (B1) to Deposits (B3) to Crust (B5) Soil Cracks (B5) Vegetated ations: r Present? elilary fringe orded Data	dicators: mum of o A2) (B2) (B4) s (B6) on Aerial I d Concave y y y a (stream	magery (I	ed; check a	Ill that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro Stunted o Other (Ex	ly) lined Leave 1, 2, 4A, a (B11) livertebrate: Sulfide Oct Rhizospher of Reduce on Reduction r Stressed plain in Re liches): liches): liches): liches): liches, pre	es (B9) ond 4B) s (B13) dor (C1) res alon d Iron (Con in Till Plants (marks)	g Living (C4) (led Soils (D1) (LRf	(C6) R A) /etlan	☐ William ☐ Dr ☐ Dr ☐ Sa ☐ Sc	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (Caeomorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7) Present? Yes V No		
YDROLOG Wetland Hyd Primary Indica Surface V High Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundatio Sparsely Field Observ Surface Water Water Table F Saturation Precincludes capic Describe Reco	rology Indiators (minimal Nater (A1) arks (B1) to Deposits (B3) to Crust (B5) Soil Cracks (B5) Soil Cracks (B5) Present? Present.	dicators: mum of o A2) (B2) (B4) (B6) on Aerial I d Concave Y Y Y a (stream	magery (I	ed; check a	Ill that app Water-Sta MLRA Salt Crust Aquatic In Hydrogen Oxidized I Presence Recent Iro Stunted o Other (Ex	ly) lined Leave 1, 2, 4A, a (B11) livertebrate: Sulfide Oct Rhizospher of Reduce on Reduction r Stressed plain in Re liches): liches): liches): liches): photos, pre	es (B9) ond 4B) s (B13) dor (C1) res alon d Iron (Con in Till Plants (marks)	g Living (C4) (led Soils (D1) (LRf	(C6) R A) /etlan	☐ William ☐ Dr ☐ Dr ☐ Sa ☐ Sc	ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) aturation Visible on Aerial Imagery (Cs comorphic Position (D2) allow Aquitard (D3) aC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A) ast-Heave Hummocks (D7)		
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Project/Site: Silicon Mountain Wetlar		_ City/	County: Silverbo				
Applicant/Owner: MDT and Butte-Silve	er Bow County			State: Montana Sampling Point: DP04-up			
nvestigator(s); R Jones, M Hickey		Sect	ion, Township, R	ange: S 24 T 3N R 9W			
andform (hillslope, terrace, etc.):		Loca	al relief (concave,	convex, none): Slope (%);18			
	Lat:		46.0007	7 Long: -112.661668 Datum: NAD 83			
Soil Map Unit Name: Varney-Anacond	a Loams, 0 to 4 percent	slopes	, moderately in	npacted NWI classification Not mapped			
are climatic / hydrologic conditions on th	e site typical for this time of	year?	Yes V No	(If no, explain in Remarks.)			
re Vegetation, Soil, or I	Hydrology Significar	ntly distu	rbed? Are	"Normal Circumstances" present? Yes V No			
		-		eeded, explain any answers in Remarks.)			
				locations, transects, important features, etc			
	- 10 CC 17 D 20 CC X - 27 C C C Y	ny sai	inhining hour	locations, transects, important reatures, etc			
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No V	-	Is the Sample	d Area			
Wetland Hydrology Present?	Yes No V		within a Wetla				
Remarks							
Upland sample point on slope adja	cent to DP04-wet.						
VEGETATION - Use scientific	names of plants						
<u>Tree Stratum</u> Plot size (30 Foot F	Absolute Dom Radius) % Cover: Spec		Indicator Status	Dominance Test worksheet			
· ·	70 ООУСТ. ОРСС	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Status	Number of Dominant Species that are OBL. FACW or FAC: 2 (A)			
				()			
				Total Number of Dominant Species Across All Strata: 5 (B)			
				Percent of Dominant Species That Are OBL, FACW, or FAC: 40 % (A/B)			
Sapling/Shrub Stratum Plot size	(15 Foot Radius)			Prevalence Index worksheet			
				Total % Cover of: Multiply by:			
				OBL species 0 X1 0			
				FACW species 0 X2 0			
				FAC species 25 X 3 75 FACU species 25 X 4 100			
Herbaceous Stratum Plot size	(5 Foot Radius)			UPL species 20 X 5 100			
Bromus inermis	15	UF	PL	Column Totals 70 (A) 275 (B)			
Centaurea stoebe	5	UF					
Elymus lanceolatus	10	FA	CU	Prevalence Index = B/A = 3.92857			
Elymus trachycaulus	10	FA	ıC	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation			
Leymus cinereus	15	FA					
Pascopyrum smithii	10		CU	2 - Dominance Test is >50%			
Poa compressa	5 🗌	FA	CU	☐ 3 - Prevalence Index is <= 3.0			
				4 - Morphological Adaptations (Provide supporting data in remarks or on separate			
				sheet.			
				5 - Wetland Non-Vascular Plants			
				Problematic Hydrophytic Vegetation (Explain			
				Indicators of hydric sil and wetland hydrology must be			
Woody Vine Stratum Plot size	(30 Foot Radius)			present, unless disturbed or problematic for #3, 4, 5.			
				Hydrophytic			
				Vegetation Yes □ NO ✓			
Percent Bare Ground 30)			Present?			
Remarks: Data point is dominated by upland	vegetation						
Data point to dominated by apiana	.090.00.011.						
US Army Corps of Engineers				Western Mountains, Valleys, and Coasts - Version 2.0			

SOIL										Sampling Point: D	P04-up	
Profile Des	cription: (Describe	to the de	pth neede	d to docu	ment the i	ndicato	or or o	onfirm	n the absence of indicators.)		
Depth	14 14	Matrix			Redo	x Features						
(inches)	Color	(moist)	%	Color	(moist)	%	Type	1 L	oc2	Texture Remarks		
0-08	10YR	3/2	97	7.5YR	4/4	3	С	M	Sand	dy Clay Loam		
08-20	10YR	4/2	100						Sand	dy Clay Loam		
							_	3,-	-			
				. >				===				
-			-	-						- 32		
Type: C=C	Concentratio	n D-Der	detion PA	1-Deduced	Matrix C	S=Covered	l or Cor	atod S	and Gr	rains. ² Location: PL=Pore Lining, M=N	Astrix	
Hydric Soil								aled 2	and Gr	Indicators for Problematic Hydric		
Histoso		· ······	and to a		dy Redox (2 cm Muck (A10)	20.26	
	pipedon (A	2)			ped Matrix					Red Parent Material (TF2)		
	listic (A3)				ny Mucky I	and the same of th) (exce	pt MI	RA 1)		2)	
	en Sulfide (A4)			ny Gleyed				254.54	Other (Explain in Remarks)		
Deplete	ed Below Da	ark Surfac	e (A11)	Dep	leted Matri:	x (F3)						
	ark Surface				ox Dark Su					3Indicators of hydrophytic vegetation		
	Mucky Mine				leted Dark	the street of the second street of	7)			wetland hydrology must be presen	11,	
	Gleyed Mat			Red	ox Depress	sions (F8)				unless disturbed or problematic.		
Restrictive	Layer (if p	resent):										
Type:	267.40									10 12 6 18 B 1 1 1 1		
Depth (in	nches):			_						Hydric Soil Present? Yes	No 🔽	
YDROLO	OGY											
Wetland Hy	drology In	dicators:		0.700		_				0.00.70.0.0.0.0		
Primary Ind	icators (min	imum of c	one require	ed; check a	all that appl	ly)				Secondary Indicators (2 or more re	equired)	
Surface	Water (A1))			Water-Sta	ined Leave	es (B9)	(exce	pt	Water-Stained Leaves (B9) (N	ILRA 1, 2,	
	ater Table ((A2)			MLRA	1, 2, 4A, a	nd 4B)	VI.		4A, and 4B)		
_	ion (A3)				Salt Crust					Drainage Patterns (B10)		
	Water Marks (B1)					vertebrates				Dry-Season Water Table (C2)		
	nt Deposits	0		_	Hydrogen					Saturation Visible on Aerial Im	agery (C9	
	posits (B3)			_	Oxidized F	and the state of t			ng Roo			
	lat or Crust				Presence					Shallow Aquitard (D3)		
	posits (B5)			_	Recent Iro							
	Soil Crack	and the second second	Sugara A S	-	Stunted or			(D1) (LRR A)		(A)	
	tion Visible			~	Other (Exp	plain in Re	marks)			Frost-Heave Hummocks (D7)		
	ly Vegetate	u Concav	e Suriace	(DO)								
Field Obse	A A W TO GO		/a.a.	No 🗸	Double fin	who and						
Surface Wa			es 🔽	1,00				_				
Water Table				No	Depth (in			\neg	10/-41-	and the standard Datasetta No.	No 🗸	
Saturation F (includes ca			es_V	No	Depth (in	cnes):		-	vvetia	and Hydrology Present? Yes	NO	
Describe Re	ecorded Dat	ta (stream	gauge, n	onitoring v	vell, aerial	photos, pre	evious i	nspec	tions), i	if available:		
Remarks:												
No evidend	e of wetla	nd hydro	logy obs	erved.								
		-										

Project/Site: Silicon Mountain Wetland		_ City/County: Silverbo	Sattipling Date	/13/2022
pplicant/Owner MDT and Butte-Silver	ow County		State: Montana Sampling Point: DP04	+-Wel
vestigator(s): R Jones, M Hickey		_ Section, Township, Ra		
andform (hillslope, terrace, etc.): Swale ubregion (LRR): LRR E	Lat:		convex, none): <u>undulating</u> Slope (% Sl	
oil Map Unit Name: Riverrun, occasiona	ally flooded-Mannixlee	e, frequently flooded co	mplex, 0 t NWI classification. Not Mapped	
re climatic / hydrologic conditions on the s re Vegetation, Soil, or Hyd re Vegetation, Soil, or Hyd SUMMARY OF FINDINGS - Atta	rology significan	tly disturbed? Are problematic? (If no	(If no, explain in Remarks.) Normal Circumstances" present? Yes eded, explain any answers in Remarks.) ocations, transects, important featu	No
Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampled within a Wetla		
Remarks: PEM, depressional sample point loca	ted on the south side	of cell 4.		
VEGETATION - Use scientific na	ames of plants			
Tree Stratum Plot size (30 Foot Rac	lius) Absolute Domi % Cover: Spec		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)
Sapling/Shrub Stratum Plot size (15	Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	% (A/B)
<u>supmigramus strutum</u>	r oot radias,		Prevalence Index worksheet	
			Total % Cover of: Multipl	
			OBL species 22 X 1 22 FACW species 30 X 2 60	
			FAC species 21 X3 63	
			FACU species 7 X 4 28	
Herbaceous Stratum Plot size (5	Foot Radius)		UPL species 0 X 5 0	
Alopecurus pratensis	3	FAC	Column Totals 80 (A) 173	3 (B)
Carex nebrascensis	2	OBL		
Carex pellita	5	OBL	Prevalence Index = B/A = 2.1625	
Deschampsia caespitosa	20 🗸	FACW	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Veg	etation
Hordeum jubatum	3	FAC		Clation
Juncus balticus	10 🗸	FACW		
Juncus tenuis	5	FAC	✓ 3 - Prevalence Index is <= 3.0	
Lactuca serriola	2	FACU	4 - Morphological Adaptations (Pro	
Poa compressa	5	FACU	supporting data in remarks or on se sheet.	eparate
Poa pratensis	10 🗸	FAC	5 - Wetland Non-Vascular Plants	
Potentilla anserina	15 🗸	OBL		/ F
			Problematic Hydrophytic Vegetatio	n (⊑xplain)
Woody Vine Stratum Plot size (3	0 Foot Radius)		Indicators of hydric sil and wetland hydrology present, unless disturbed or problematic for #	
Percent Bare Ground 20			Hydrophytic Vegetation Present? Ves ✓ NO	_
Remarks:			•	
Evidence of hydrophytic vegetation ir	icludes a positive don	ninance test and a prev	alence index below 3.0.	
US Army Corps of Engineers			Western Mountains, Valleys, and Coasts - V	

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	Sampling Point: DP04-wet
Color (moist)	e of indicators.)
Double D	
10 10 10 10 10 10 10 10	Remarks
M-18 10YR 4/4 40 Clay M-18 10YR 3/3 50 Clay	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: Concentration Type: Candidate Type:	Mixed due to construction.
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.	Mixed due to construction.
Indica Histosol (A1)	Mixed due to construction.
Indica Histosol (A1) Sandy Redox (S5) Q1 Histosol (A1) Sandy Redox (S5) Q2 Histosol (A2) Stripped Matrix (S6) Q2 Histosol (A2) Stripped Matrix (S6) Q2 Histosol (A2) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Ve Ot Depleted Below Dark Surface (A12) Redox Dark Surface (F6) Indica Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unle Indica Redox Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unle Indica Redox Deressions (F8) unle Indica Redox Deressions (F8) Indica Indica Redox Deressions (F8) Indica Indica Indica Redox Deressions (F8) Indica Indica Indi	-
Indica Histosol (A1) Sandy Redox (S5) Q1 Histosol (A1) Sandy Redox (S5) Q2 Histosol (A2) Stripped Matrix (S6) Q2 Histosol (A2) Stripped Matrix (S6) Q2 Histosol (A2) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Ve Ot Depleted Below Dark Surface (A12) Redox Dark Surface (F6) Indica Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unle Indica Redox Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unle Indica Redox Deressions (F8) unle Indica Redox Deressions (F8) Indica Indica Redox Deressions (F8) Indica Indica Indica Redox Deressions (F8) Indica Indica Indi	· -
Histosol (A1) Sandy Redox (S5) 2 the Histo Epipedon (A2) Stripped Matrix (S6) Redox Histic Epipedon (A2) Stripped Matrix (S6) Redox Histic Epipedon (A2) Loamy Mucky Mineral (F1) (except MLRA 1) Vexicology Vex	ocation: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Stripped Matrix (S6) Re Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Vo Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Indica Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unle estrictive Layer (if present): Type: Deplt (inches): Hydric So emarks: Hydr	ors for Problematic Hydric Soils ³ :
Histic Epipedon (A2) Stripped Matrix (S6) Re Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (except MLRA 1) Ve Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Ve Ot Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Indica Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) wet Sandy Gleyed Matrix (S4) Redox Depressions (F8) unlice estrictive Layer (if present): Type:	m Muck (A10)
Black Histic (A3)	d Parent Material (TF2)
Hydrogen Sulfide (A4)	ry Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11)	ner (Explain in Remarks)
Thick Dark Surface (A12)	A Terrett of the first
Sandy Mucky Mineral (S1)	tors of hydrophytic vegetation and
Sandy Gleyed Matrix (S4)	and hydrology must be present.
estrictive Layer (if present): Type:	ess disturbed or problematic.
Depth (inches):	33 distances of problematic.
Depth (inches):	
emarks: ne soil matrix is mixed, potentially from the construction of the wetlands. Hydric soil indicators ative soil, but the presence of wetland hydrology and hydrophytic vegetation qualifies the poin for the wetlands. Hydric soil indicators ative soil, but the presence of wetland hydrology and hydrophytic vegetation qualifies the poin for the wetlands. Hydric soil indicators ative soil, but the presence of wetland hydrology and hydrophytic vegetation qualifies the poin for the point in the p	20 D
he soil matrix is mixed, potentially from the construction of the wetlands. Hydric soil indicators ative soil, but the presence of wetland hydrology and hydrophytic vegetation qualifies the poin with the presence of wetland hydrology and hydrophytic vegetation qualifies the poin with the present? Vertland Hydrology Indicators: Indicators (minimum of one required; check all that apply)	il Present? Yes No
rimary Indicators (minimum of one required; check all that apply) SecSurface Water (A1) Water-Stained Leaves (B9) (except	
Surface Water (A1) Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) ield Observations: urface Water Present? Ves No Depth (inches): Vater Table Present? Yes No Depth (inches): Owelland Hydrolo in available: Water Ala, and 4B) MLRA 1, 2, 4A, and 4B) Murch States (B13) Murch States (B1) Mu	ondary Indicators (2 or more required)
MLRA 1, 2, 4A, and 4B) ✓ Saturation (A3)	Dog 18 Salar Street And Street Williams
✓ Saturation (A3) □ Salt Crust (B11) □ □ Water Marks (B1) □ Aquatic Invertebrates (B13) □ □ Sediment Deposits (B2) □ Hydrogen Sulfide Odor (C1) □ □ Drift Deposits (B3) □ Oxidized Rhizospheres along Living Roots (C3) ✓ □ Algal Mat or Crust (B4) □ Presence of Reduced Iron (C4) □ □ Iron Deposits (B5) □ Recent Iron Reduction in Tilled Soils (C6) ✓ □ Surface Soil Cracks (B6) □ Stunted or Stressed Plants (D1) (LRR A) □ □ Inundation Visible on Aerial Imagery (B7) □ Other (Explain in Remarks) □ □ Sparsely Vegetated Concave Surface (B8) □ Other (Explain in Remarks) □ □ Sparsely Vegetated Concave Surface (B8) □ □ Other (Explain in Remarks) □ □ Vater Table Present? Yes □ No □ Depth (inches): □ □ Other (Explain in Remarks) □ □ Vater Table Present? Yes □ No □ Depth (inches): □ □ Other (Explain in Remarks) □ □ Vater Table Present? Yes □ No □ Depth (inches): □ □ Other (Explain in Remarks) □ □ Vater Table Present? Yes □ No □ Depth (inches): □ □ Other (Explain in Remarks) □	Water-Stained Leaves (B9) (MLRA 1, 2
Water Marks (B1)	4A, and 4B)
Sediment Deposits (B2)	Drainage Patterns (B10)
Drift Deposits (B3)	Dry-Season Water Table (C2)
Algal Mat or Crust (B4)	Saturation Visible on Aerial Imagery (C
Iron Deposits (B5)	Geomorphic Position (D2)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Stundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) Stundard Con	Shallow Aquitard (D3)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Stundation Visible on Aerial Imagery (B7) Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) Stundard Con	FAC-Neutral Test (D5)
Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8) ield Observations: urface Water Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks) Vater Table Present? Yes ☐ No ☐ Depth (inches): ☐ Other (Explain in Remarks)	Raised Ant Mounds (D6) (LRR A)
Sparsely Vegetated Concave Surface (B8) ield Observations: urface Water Present? Yes No Depth (inches): //ater Table Present? Yes No Depth (inches): aturation Present? Yes No Depth (inches): oncludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	Frost-Heave Hummocks (D7)
ield Observations: urface Water Present? Yes No Depth (inches): //ater Table Present? Yes No Depth (inches): aturation Present? Yes No Depth (inches): oncludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	rosericave rialimiocks (EV)
urface Water Present? Yes No Depth (inches): 10 //ater Table Present? Yes No Depth (inches): 10 aturation Present? Yes No Depth (inches): 0 Wetland Hydrolo notudes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	
Atter Table Present? Yes No Depth (inches): 10 atturation Present? Yes No Depth (inches): 0 Wetland Hydrolo noludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	
aturation Present? Yes V No Depth (inches): 0 Wetland Hydrolo ncludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	
emarks:	
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: emarks:	gy Present? Yes V No
vidence of wetland hydrology included a high water table, saturated soils, geomorphic postion	
	and a positve FAC-neutral test.
	and a positve FAC-neutral test.

Project/Site: Silicon Mountain W		City/C	County: Silverbe	
Applicant/Owner: MDT and Butte	-Silver Bow County			State: Montana Sampling Point: DP05-up
nvestigator(s): R Jones, M Hicke	ey .	Secti	on, Township, R	lange: S 24 T 3N R 9W
andform (hillslope, terrace, etc.): Subregion (LRR): LRR E	Lat:		46.00266	e, convex, none): flat Slope (%): 96 Long: -112.661258 Datum: NAD 83
oil Map Unit Name: Varney-Ana	conda Loams, 0 to 4 percent	slopes	, moderately ir	mpacted NVII classification. Not mapped
ne Vegetation, Soil	, or Hydrology significant , or Hydrology naturally p	ly distu	rbed? Are	(If no, explain in Remarks.) e "Normal Circumstances" present? Yes No needed, explain any answers in Remarks.) locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No V		Is the Sample within a Wetl	
Remarks: Upland sample point located of	n a berm between cell 5 and	Sand (Creek.	
VEGETATION - Use scien	tific names of plants			
<u>Tree Stratum</u> Plot size (30 F	Foot Radius) Absolute Domia % Cover: Specie		ndicator Status	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)
Sapling/Shrub Stratum Plot	size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
	(, 0			Prevalence Index worksheet
				Total % Cover of: Multiply by: OBL species 0 X 1 0
				FACW species 15 X 2 30
				FAC species 50 X 3 150
				FACU species 13 X 4 52
	size (5 Foot Radius)			UPL species 7 X 5 35
Bromus inermis	5	UP		Column Totals 85 (A) 267 (B)
Elymus lanceolatus Elymus repens	10 <u> </u>	FA FA	CU	Prevalence Index = B/A = 3.14118
Juncus balticus	20 v		CW	Hydrophytic Vegetation Indicators
Leymus cinereus	30	FA		1 - Rapid Test for Hydrophytic Vegetation
Poa compressa	3		CU	✓ 2 - Dominance Test is >50%
Thlaspi arvense	2 🗌	UP		☐ 3 - Prevalence Index is <= 3.0
				 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants
				Problematic Hydrophytic Vegetation (Explain
				Indicators of hydric sil and wetland hydrology must be
Woody Vine Stratum Plot	size (30 Foot Radius)			present, unless disturbed or problematic for #3, 4, 5.
Dorsont Boro Cround	20			Hydrophytic Vegetation Yes ✓ NO Present?
Percent Bare Ground Remarks:	20			
	sent at this data point, and the	positi	ve dominance	test may be due to the high proportion of facultative
US Army Corps of Engineers				Western Mountains, Valleys, and Coasts - Version 2.0
, i po oi - i gillooio				

SOIL									Sampling Point: DP05	j-up
Profile Des	scription: (D	escribe	to the de	oth needed to docu	ment the indic	cator or cor	nfirm the ab	sence		
Depth	14	Matrix			ox Features					
(inches)	Color (r	moist)	%	Color (moist)	% Ty	ype Loc	² Tex	ture	Remarks	
0-08	10YR	3/2	100				Sandy Lo	oam		
08-18	10YR	3/2	100				Sandy Lo	oam	Soils moist	
									-	
				-					=	
-								_	-	
¹Type: C=0	Concentration	n D=Der	oletion RM	=Reduced Matrix, C	S=Covered or	Coated San	d Grains	21.00	cation: PL=Pore Lining, M=Matri	¥.
				LRRs, unless othe					rs for Problematic Hydric Soil	
Histoso				Sandy Redox	The second section is the second			And the second	n Muck (A10)	2.0
	Epipedon (A2)		Stripped Matrix					Parent Material (TF2)	
	Histic (A3)			Loamy Mucky		except MLR	A 1)	_	Shallow Dark Surface (TF12)	
	gen Sulfide (A	(4)		Loamy Gleyed				_	er (Explain in Remarks)	
	ed Below Da		e (A11)	Depleted Matri				-		
	Dark Surface		100.100	Redox Dark Su	urface (F6)		3	ndicato	ers of hydrophytic vegetation and	
Sandy	Mucky Miner	ral (S1)		Depleted Dark	Surface (F7)			wetla	nd hydrology must be present,	
Sandy	Gleyed Matri	ix (S4)		Redox Depres	sions (F8)			unles	s disturbed or problematic.	
Restrictive	Layer (if pr	esent):								
Type:	10000						1.0			
Depth (in	nches):						Hydr	ic Soil	Present? Yes No	V
IYDROLO	OGY									
Wetland Hy	ydrology Inc	licators:								
Primary Ind	licators (minir	mum of c	ne require	d; check all that app	ly)			Secon	ndary Indicators (2 or more requi	red)
Surface	e Water (A1)			Water-Sta	ined Leaves (E	B9) (except		W	later-Stained Leaves (B9) (MLR	A 1, 2,
High W	Vater Table (A	12)		MLRA	1, 2, 4A, and	4B)			4A, and 4B)	
	tion (A3)			Salt Crust	(B11)	227		D	rainage Patterns (B10)	
	Marks (B1)			and the second s	vertebrates (B	313)			ry-Season Water Table (C2)	
	ent Deposits	(B2)			Sulfide Odor (aturation Visible on Aerial Image	ry (C9
	eposits (B3)	12-0			Rhizospheres a	1	Roots (C3)		eomorphic Position (D2)	4 4 5
	lat or Crust (B4)			of Reduced Iro		0.000		hallow Aquitard (D3)	
	eposits (B5)			Recent Inc	on Reduction in	n Tilled Soils	(C6)		AC-Neutral Test (D5)	
	e Soil Cracks	(B6)			r Stressed Plan			□ R	aised Ant Mounds (D6) (LRR A)	
	tion Visible o		magery (E		plain in Remar				rost-Heave Hummocks (D7)	
	ly Vegetated		A							
Field Obse										
Surface Wa	ater Present?	Y	es 🗌	No Depth (in	iches):					
Water Table			es 🗌	No Depth (in						
Saturation I			es 🗌	No Depth (in		v	Netland Hy	trology	y Present? Yes No	V
(includes ca	apillary fringe)		onitoring well, aerial					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Describe IV	-Joi add Dale	- (oucan	gaoge, II	and Holl acrea	P.10100, P104101	inoposito		2,4.		
Remarks:										
No evidend	ce of wetlan	d hydro	logy obs	erved.						

Project/Site: Silicon Mountain Wetla		City/County: Silverbo	
pplicant/Owner MDT and Butte-Silv	VEI DOW COULTY	Anna America	State: Montana Sampling Point: DP05-wet
nvestigator(s): R Jones, M Hickey		Section, Township, R	
andform (hillslope, terrace, etc.): Swa	le	Local relief (concave	, convex, none): undulating Slope (%): 15
ubregion (LRR): LRR E	Lat:	46.00264	
oil Map Unit Name: Varney-Anacon	da Loams, 0 to 4 percen	t slopes, moderately in	npacted NWI classification Not mapped
re climatic / hydrologic conditions on the	he site typical for this time of	fyear? Yes 🔽 No	(If no, explain in Remarks.)
re Vegetation, Soil, or	Hydrology significa	ntly disturbed? Are	"Normal Circumstances" present? Yes 🔽 No 🗌
re Vegetation, Soil, or	Hydrology naturally	problematic? (If r	needed, explain any answers in Remarks.)
HMMARY OF FINDINGS - A	ttach site man show	ing sampling point	locations, transects, important features, etc.
Hydrophytic Vegetation Present?	Yes ✓ No □	ang campang point	iodationo, transcotto, importanti ioatarco, etc.
Hydric Soil Present?	Yes V No	Is the Sample	
Wetland Hydrology Present?	Yes V No	within a Wetla	and? Yes V No No
Remarks:			
PEM, depressional wetland locate	d on NW corner of cell 5		
VEGETATION - Use scientific	c names of plants		
Tree Stratum Plot size (30 Foot	Radius) Absolute Dom % Cover: Spe	iant Indicator cies? Status	Dominance Test worksheet
	7 70 Cover. Open	oles: Otalus	Number of Dominant Species that are OBL, FACW or FAC: 4 (A)
			Total Number of Dominant Species Across All Strata: 4 (B)
Sapling/Shrub Stratum Plot size	e (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
Salix exigua	30	FACW	Prevalence Index worksheet
Cally Crigat		171000	Total % Cover of: Multiply by:
			OBL species 17 X 1 17 FACW species 86 X 2 172
			FAC species 10 X3 30
			FACU species 0 X 4 0
<u>Herbaceous Stratum</u> Plot size	e (5 Foot Radius)		UPL species 0 X 5 0
Carex simulata	2	OBL	Column Totals 113 (A) 219 (B)
Cicuta douglasii	5	OBL	Prevalence Index = B/A = 1.93805
Elymus repens	5	FAC	Hydrophytic Vegetation Indicators
Juncus balticus	40		1 - Rapid Test for Hydrophytic Vegetation
Plantago eriopoda	1 [FACW	✓ 2 - Dominance Test is >50%
Poa pratensis Potentilla anserina	5	FAC ORL	✓ 3 - Prevalence Index is <= 3.0
Salix exigua	10 ~	OBL FACW	
Solidago gigantea	10		4 - Morphological Adaptations (Provide supporting data in remarks or on separate
condugo gigantod	10	17.000	sheet.
			5 - Wetland Non-Vascular Plants
			Problematic Hydrophytic Vegetation (Explain)
			Indicators of hydric sil and wetland hydrology must be
Woody Vine Stratum Plot size	e (30 Foot Radius)		present, unless disturbed or problematic for #3, 4, 5.
			Hydrophytic
Daniel (Daniel C	7		Vegetation Yes ✓ NO ☐ Present?
Percent Bare Ground 1 emarks:	1		r resent:
	orevalence index below t	hree indicate that a hyd	drophytic plant community is present.
·		•	
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Profile Descripti Depth						Sampling Point: DP05-
Denth	ion: (De	escribe t	o the de	oth needed to documen	t the indicator or co	onfirm the absence of indicators.)
		Matrix	0/	Redox Fe		The second
	Color (m		%	Color (moist)	% Type ¹ Lo	oc² Texture Remarks
0-05 10)YR	3/2	100			Sandy Clay Loam
05-16 10	YR	4/2	100			Sand
7 7						
¹Type: C=Conce	ntration	D=Deple	etion, RM	=Reduced Matrix, CS=C	overed or Coated Sa	and Grains. ² Location: PL=Pore Lining, M=Matrix.
				LRRs, unless otherwis		Indicators for Problematic Hydric Soils
Histosol (A1)				Sandy Redox (S5)		2 cm Muck (A10)
Histic Epipeo		7		Stripped Matrix (S6		Red Parent Material (TF2)
Black Histic (4				ral (F1) (except ML	
Hydrogen Su			A.A.	Loamy Gleyed Mat	The state of the s	Other (Explain in Remarks)
Depleted Bel			(A11)	Depleted Matrix (F3	The second secon	Sheaffeatous of bouleasts attended to an a
☐ Thick Dark S☐ Sandy Mucky				Redox Dark Surfac Depleted Dark Surf	ACCUPATION OF THE PROPERTY OF	³ Indicators of hydrophytic vegetation and wetland hydrology must be present,
Sandy Muck				Redox Depressions		unless disturbed or problematic.
Restrictive Laye					(1.0)	unioss distarses of presiding.
Type:						
Depth (inches	١٠					Hydric Soil Present? Yes ✓ No
IYDROLOGY	1.					
Wetland Hydrolo	ogy Indi					
	COLUMN TO SERVICE STATE OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE	icators:		a transaction of a		10.00.70.0 1
Primary Indicator	s (minin		ne require	d; check all that apply)		Secondary Indicators (2 or more require
Primary Indicator			ne require		Leaves (B9) (excep	
T 7 10 1 1 3 3	er (A1)	num of on	ne require	Water-Stained	Leaves (B9) (excep	
Surface Water	er (A1) able (A	num of on	ne require	Water-Stained	, 4A, and 4B)	pt Water-Stained Leaves (B9) (MLRA
U Surface Water T	er (A1) Table (A (3)	num of on	ne require	Water-Stained MLRA 1, 2	, 4A, and 4B) 1)	pt
Surface Water High Water T Saturation (A Water Marks Sediment De	er (A1) Table (A A3) (B1) eposits (num of on	ne require	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte	, 4A , and 4B) 1) ebrates (B13) fide Odor (C1)	pt
Surface Water High Water T Saturation (A Water Marks	er (A1) Table (A A3) (B1) eposits (num of on	ne require	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte	, 4A , and 4B) 1) ebrates (B13)	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Roots (C3) Geomorphic Position (D2)
Surface Water ✓ High Water T ✓ Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E	num of on 2) B2)	ne require	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize	, 4A, and 4B) 1) ebrates (B13) ide Odor (C1) ospheres along Livin educed Iron (C4)	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery and Roots (C3) Shallow Aquitard (D3)
Surface Water ✓ High Water T ✓ Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5)	num of on 2) B2) 34)	ne require	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Re	, 4A, and 4B) 1) ebrates (B13) ide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery and Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil	er (A1) Table (A 3) (B1) eposits (s (B3) Crust (E s (B5) Cracks	num of on 2) B2) 34) (B6)		Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverted Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Research or Strunted or Strunted	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RRA Raised Ant Mounds (D6) (LRR A)
Surface Water ✓ High Water T ✓ Saturation (A ☐ Water Marks ☐ Sediment De ☐ Drift Deposits ☐ Algal Mat or ☐ Iron Deposits ☐ Surface Soil ☐ Inundation V	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or	num of on 2) B2) 34) (B6) n Aerial In	nagery (E	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery and Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Surface Water ✓ High Water T ✓ Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg	er (A1) Table (A 3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated	num of on 2) B2) 34) (B6) n Aerial In	nagery (E	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RRA Raised Ant Mounds (D6) (LRR A)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observation	er (A1) Table (A A3) (B1) Eposits (S (B3) Crust (E S (B5) Cracks isible or getated ons:	B2) B4) (B6) Aerial In	nagery (B Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So essed Plants (D1) (L	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RRA Raised Ant Mounds (D6) (LRR A)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observation	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated ons:	num of on 2) B2) 34) (B6) n Aerial In Concave	nagery (B Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverted Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Stunted or Strong Other (Explain B8)	, 4A, and 4B) 1) abrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Sol essed Plants (D1) (L in Remarks)	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RRA Raised Ant Mounds (D6) (LRR A)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observation	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated ons:	B2) B4) (B6) n Aerial In Concave	nagery (B Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str	, 4A, and 4B) 1) abrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Sol essed Plants (D1) (L in Remarks) s): 9	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation Vi Sparsely Veg Field Observation Surface Water Pr Water Table Press Saturation Present	er (A1) Table (A 3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated ons: resent? sent?	B2) B4) (B6) Aerial In Concave Ye Ye Ye	nagery (B Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverted Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Stunted or Strong Other (Explain B8)	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So essed Plants (D1) (L i in Remarks)	water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) RRA Raised Ant Mounds (D6) (LRR A)
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observation Surface Water Pr Water Table Prese Saturation Preser (includes capillar)	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated ons: resent? sent? y fringe)	B2) B4) (B6) Aerial In Concave Ye Ye	nagery (E Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str Other (Explain B8) No Depth (inches	, 4A, and 4B) 1) abrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So essed Plants (D1) (L in Remarks) s): s): s): s):	water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery ong Roots (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) oils (C6) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No □
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observation Surface Water Pr Water Table Press Saturation Preser (includes capillar) Describe Records	er (A1) Table (A A3) (B1) eposits (s (B3) Crust (E s (B5) Cracks isible or getated ons: resent? sent? y fringe)	B2) B4) (B6) Aerial In Concave Ye Ye	nagery (E Surface (Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverted Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron Restriction of Stunted or Strong Other (Explain B8) No Depth (inches No Depth (inches	, 4A, and 4B) 1) abrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So essed Plants (D1) (L in Remarks) s): s): s): s):	water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery ong Roots (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) oils (C6) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No □
Surface Water ✓ High Water T ✓ Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observatio Surface Water Pr Water Table Press Saturation Presser (includes capillar) Describe Recorde	er (A1) Table (A A3) (B1) Eposits (S (B3) Crust (E S (B5) Cracks isible or getated ons: resent? sent? y fringe) ed Data	B2) B2) B4) (B6) Aerial In Concave Ye Ye Ye (stream)	nagery (E Surface (es	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str Other (Explain B8) No	, 4A, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled So essed Plants (D1) (L in Remarks) s): g) os, previous inspect	water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery and Roots (C3) □ Shallow Aquitard (D3) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No □ tions)₁ if available:
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observatio Surface Water Pr Water Table Pres Saturation Preser (includes capillar) Describe Recorde Remarks: Evidence for we	er (A1) Fable (A3) (B1) sposits (B3) Crust (B5) Cracks isible or getated ons: esent? esent? ent? ed Data	B2) B2) B4) (B6) Aerial In Concave Ye Ye (stream)	nagery (E Surface (es	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str Other (Explain B8) No Depth (inches No Depth (inches ponitoring well, aerial photon	AA, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L) in Remarks) s): 9 s): 9 sos, previous inspect	Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery ng Roots (C3) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No □ tions)₁ if available: nes, saturation to the soil surface, the point's
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observatio Surface Water Pr Water Table Pres Saturation Preser (includes capillar) Describe Recorde Remarks: Evidence for we	er (A1) Fable (A3) (B1) sposits (B3) Crust (B5) Cracks isible or getated ons: esent? esent? ent? ed Data	B2) B2) B4) (B6) Aerial In Concave Ye Ye (stream)	nagery (E Surface (es	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str Other (Explain B8) No Depth (inches No Depth (inches ponitoring well, aerial photon	AA, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L) in Remarks) s): 9 s): 9 sos, previous inspect	water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery and Roots (C3) □ Shallow Aquitard (D3) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No □ tions)₁ if available:
Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Soil Inundation V Sparsely Veg Field Observatio Surface Water Pr Water Table Pres Saturation Preser (includes capillar) Describe Recorde Remarks: Evidence for we	er (A1) Fable (A3) (B1) sposits (B3) Crust (B5) Cracks isible or getated ons: esent? esent? ent? ed Data	B2) B2) B4) (B6) Aerial In Concave Ye Ye (stream)	nagery (E Surface (es	Water-Stained MLRA 1, 2 Salt Crust (B1 Aquatic Inverte Hydrogen Sulf Oxidized Rhize Presence of R Recent Iron R Stunted or Str Other (Explain B8) No Depth (inches No Depth (inches ponitoring well, aerial photon	AA, and 4B) 1) ebrates (B13) fide Odor (C1) ospheres along Livin educed Iron (C4) eduction in Tilled Solessed Plants (D1) (L) in Remarks) s): 9 s): 9 sos, previous inspect	Water-Stained Leaves (B9) (MLR. 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Image ng Roots (C3) ☑ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7) Wetland Hydrology Present? Yes ☑ No tions), if available:

Project/Site: Silicon Mountain Wetland Mitigation Site	City/C	county: Silverbow	Sampling Date: 6/13/2022
Applicant/Owner MDT and Butte-Silver Bow County	- ' ' ' '		State: Montana Sampling Point: DP06a-up
nvestigator(s): S Weyant, W Fouts	Section	on, Township, Rang	C OA TON DOW
_andform (hillslope, terrace, etc.): Bench Subregion (LRR): LRR E	Loca	l relief (concave, co 45.99806	nvex, none): convex, flat Slope (%): 10 Long: -112.663678 Datum: NAD 83
Soil Map Unit Name: Riverrun, occasionally flooded-Mannix	dee, freque	ently flooded com	plex, 0 t
Are climatic / hydrologic conditions on the site typical for this time. Are Vegetation, Soil, or Hydrology significate Vegetation, Soil, or Hydrology natural SUMMARY OF FINDINGS — Attach site map sho	cantly distur	bed? Are "No atic? (If need	ormal Circumstances" present? Yes <u>V</u> No
1.3 - 1.5 - 1		Is the Sampled A within a Wetland	
Upland sample point located on berm in the north-centra	al part of ce	ell 6.	
VEGETATION - Use scientific names of plants Absolute D	omiant Ir	ndicator	Daminawa Tantuurila kast
Tues Chushama Districts (OO Foot Dadius)		Status	Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
			Total Number of Dominant Species Across All Strata:
Sapling/Shrub Stratum Plot size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
,			Prevalence Index worksheet
			Total % Cover of: Multiply by: OBL species 0 X 1 0
			FACW species 0 X2 0
			FAC species 73 X3 219
Herbaceous Stratum Plot size (5 Foot Radius)			FACU species 1 X 4 4 UPL species 0 X 5 0
Hordeum jubatum 10	□ FA	C	
Leymus cinereus 60	✓ FA		Column Totals 74 (A) 223 (B)
Sonchus arvensis 1	FA		Prevalence Index = B/A = 3.01351
Trifolium repens 3	FAC	С	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
			✓ 2 - Dominance Test is >50%
			3 - Prevalence Index is <= 3.0
			 4 - Morphological Adaptations (Provide supporting data in remarks or on separate
			sheet. 5 - Wetland Non-Vascular Plants
			Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
			Hydrophytic Vegetation Yes V NO
Percent Bare Ground 26 Remarks:			Present?
The dominance test is positive, potentially because of the	ne facultativ	ve status of the sp	pecies at this data point.
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					Sampling Point: DP06a-up
Donth	scription: (Des	scribe to the de	pth needed to document the i	ndicator or confirm	
Depth		atrix	Redox Feature		
(inches)	Color (mo	oist) %	Color (moist) %	Type Loc2	Texture Remarks
0-03	10YR 3	/1 100		С	lay Loam
03-16	10YR 4	/4 100		Sa	andy Loam
		,			
					-
	A.E.				<u> </u>
Type: C=0	Concentration, I	D=Depletion, RN	/=Reduced Matrix, CS=Covered	d or Coated Sand Gra	ains. ² Location: PL=Pore Lining, M=Matrix.
Hydric Soi	I Indicators: (/	Applicable to a	LRRs, unless otherwise not	ed.)	Indicators for Problematic Hydric Soils ³ :
Histoso			Sandy Redox (S5)		2 cm Muck (A10)
	Epipedon (A2)		Stripped Matrix (S6)	Water States of the San	Red Parent Material (TF2)
	Histic (A3)		Loamy Mucky Mineral (F		Very Shallow Dark Surface (TF12)
	gen Sulfide (A4)		Loamy Gleyed Matrix (F2).	Other (Explain in Remarks)
	ed Below Dark : Dark Surface (A		☐ Depleted Matrix (F3) ☐ Redox Dark Surface (F6)		3Indicators of hydrophytic vegetation and
	Mucky Mineral	, c. e.	Depleted Dark Surface (F6)		wetland hydrology must be present,
	Gleyed Matrix (Redox Depressions (F8)	11	unless disturbed or problematic.
	Layer (if pres			-	diffess distances of problematic.
Type:	1000				
1111	nches):				Hydric Soil Present? Yes No
IVDBOL /	ncv.				
Wotland H	JGT				
	vdrology Indic	ators:			
The State of the S	ydrology Indic		ed check all that anniv)		Secondary Indicators /2 or more required\
Primary Ind	licators (minimu		ed; check all that apply)	ac (RO) (aveant	Secondary Indicators (2 or more required)
Primary Ind	licators (minimu e Water (A1)	ım of one requin	Water-Stained Leave	CALL AND PRODUCE A MARKETINE	Water-Stained Leaves (B9) (MLRA 1, 2,
Primary Ind Surface High W	licators (minimu e Water (A1) Vater Table (A2)	ım of one requin	Water-Stained Leave	CALL AND PRODUCE A MARKETINE	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary Ind Surface High W	licators (minimu e Water (A1) Vater Table (A2) tion (A3)	ım of one requin	Water-Stained Leavi MLRA 1, 2, 4A, a Salt Crust (B11)	ind 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)□ Drainage Pattems (B10)
Primary Ind Surface High W Satural Water	licators (minimu e Water (A1) /ater Table (A2) tion (A3) Marks (B1)	im of one requin	Water-Stained Leavi MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate	and 4B) s (B13)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
Primary Ind Surface High W Satural Water Sedime	licators (minimu e Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Od	and 4B) s (B13) dor (C1)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9
Primary Ind Surface High W Satural Water Sedime	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe	s (B13) dor (C1) res along Living Root	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 (C3)) Geomorphic Position (D2)
Primary Ind Surface High W Satural Water Sedime Drift De	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce	s (B13) dor (C1) res along Living Root d Iron (C4)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9 Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3)
Primary Ind Surface High W Satural Water Sedime Drift De Algal N	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce	s (B13) dor (C1) res along Living Root	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (E	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reduction	s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary Ind Surface High W Saturar Water Sedime Drift De Algal M Iron De Surface Inunda	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (Etion Visible on A	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re	s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (E tion Visible on A	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re	s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (E tion Visible on A	im of one requin	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed 37) Other (Explain in Re	s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B4) ely Vegetated Colorvations: ater Present?	um of one requin 2)) 36) Aeríal Imagery (l oncave Surface	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed The Company of the Compa	s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A)
Primary Ind Surface High W Saturar Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B4) ely Vegetated Color Visible on A ely Vegetated Color Visible en Color Visi	im of one require 2) 36) Aerial Imagery (Ioncave Surface	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed (B8) No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9 Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Saturat Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Water Table Saturation I (includes ca	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B4) ely Vegetated Colorvations: eter Present? e Present? epillary fringe)	2) 36) Aeríal Imagery (loncave Surface Yes Yes	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re) (B8) No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Saturat Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Water Table Saturation I (includes ca	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B4) ely Vegetated Colorvations: eter Present? e Present? epillary fringe)	2) 36) Aeríal Imagery (loncave Surface Yes Yes	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed (B8) No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Wa Water Table Saturation I (includes ca Describe R	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B1) tion Visible on A1 ely Vegetated Contractions: ater Present? e Present? present? epillary fringe) ecorded Data (s	im of one require 2) 36) Aerial Imagery (Ioncave Surface Yes Yes Yes Stream gauge, n	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re) (B8) No Depth (inches): No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Wa Water Table Saturation I (includes ca Describe R	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B1) tion Visible on A1 ely Vegetated Contractions: ater Present? e Present? present? epillary fringe) ecorded Data (s	2) 36) Aeríal Imagery (loncave Surface Yes Yes	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re) (B8) No Depth (inches): No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Wa Water Table Saturation I (includes ca Describe R	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B1) tion Visible on A1 ely Vegetated Contractions: ater Present? e Present? present? epillary fringe) ecorded Data (s	im of one require 2) 36) Aerial Imagery (Ioncave Surface Yes Yes Yes Stream gauge, n	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re) (B8) No Depth (inches): No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)
Primary Ind Surface High W Satural Water Sedime Drift De Algal M Iron De Surface Inunda Sparse Field Obse Surface Wa Water Table Saturation I (includes ca Describe R	licators (minimule Water (A1) Vater Table (A2) tion (A3) Marks (B1) ent Deposits (B3) Mat or Crust (B4) eposits (B5) e Soil Cracks (B1) tion Visible on A1 ely Vegetated Contractions: ater Present? e Present? present? epillary fringe) ecorded Data (s	im of one require 2) 36) Aerial Imagery (Ioncave Surface Yes Yes Yes Stream gauge, n	Water-Stained Leave MLRA 1, 2, 4A, a Salt Crust (B11) Aquatic Invertebrate Hydrogen Sulfide Oc Oxidized Rhizosphe Presence of Reduce Recent Iron Reducti Stunted or Stressed Other (Explain in Re) (B8) No Depth (inches): No Depth (inches): No Depth (inches):	s (B13) s (B13) dor (C1) res along Living Root d Iron (C4) on in Tilled Soils (C6) Plants (D1) (LRR A) marks) Wetla	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imagery (C9) Is (C3) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain Wetland M		-	City/County: Silve	FIDOM	Sampling Date: 6/13/202
oplicant/Owner MDT and Butte-Silver Bo	ow County				State: Montana Sampling Point: DP06a-wet
vestigator(s): S Weyant, W Fouts		_	Section, Townshi	p, Range:	S 24 T 3N R 9W
andform (hillslope, terrace, etc.): Depression Subregion (LRR): LRR E					ex, none); concave Slope (%); g;112.663469 Datum; NAD 83
oil Map Unit Name: Riverrun, occasional					· ·
re climatic / hydrologic conditions on the site					
e Climatic / hydrologic conditions on the site					
		and the second			al Circumstances" present? Yes V No L
re Vegetation, Soil, or Hydro					[[대한 10 24] [[대한 10 22] [[대한 10 22] [[대한 10 22]
UMMARY OF FINDINGS - Attack	h site map she	owing	sampling po	int locat	ions, transects, important features, et
Hydric Soil Present? Ye Wetland Hydrology Present? Ye	es No		Is the San within a V	npled Area Vetland?	Yes No
Remarks: PEM, depressional wetland in cell 6. W from previous years. This sample point					us years, and the wetland size was reduced
VEGETATION - Use scientific nar					
	Δhsolute Γ	Domian	t Indicator	1.	ominones Took we dealers
<u>Tree Stratum</u> Plot size (30 Foot Radiu	\	Species			ominance Test worksheet umber of Dominant Species
					at are OBL, FACW or FAC: 2 (A)
					otal Number of Dominant pecies Across All Strata:
Sapling/Shrub Stratum Plot size (15	Foot Padius)				ercent of Dominant Species nat Are OBL, FACW, or FAC:
Salix exigua	1		FACW	Pı	revalence Index worksheet
Salix exigua	I	✓	PACVV		Total % Cover of: Multiply by:
					BL species 77 X 1 77 ACW species 2 X 2 4
					ACW species 2 X 2 4 AC species 17 X 3 51
					ACU species 2 X 4 8
Herbaceous Stratum Plot size (5	Foot Radius)			UI	PL species 0 X 5 0
Alopecurus pratensis	5		FAC	Co	olumn Totals 98 (A) 140 (E
Beckmannia syzigachne	15		OBL		Prevalence Index = B/A = 1.42857
Cirsium arvense	1		FAC	H,	ydrophytic Vegetation Indicators
Cyrtorhyncha cymbalaria	2		OBL		1 - Rapid Test for Hydrophytic Vegetation
Elymus trachycaulus	3		FAC		✓ 2 - Dominance Test is >50%
Hordeum jubatum	5		FAC		✓ 3 - Prevalence Index is <= 3.0
Melilotus officinalis Mentha arvensis	1 1		FACU FACW		_
Poa palustris	3		FAC		4 - Morphological Adaptations (Provide supporting data in remarks or on separate
Potentilla anserina	60	<u> </u>	OBL		sheet.
Taraxacum officinale	1		FACU		5 - Wetland Non-Vascular Plants
rarandom omondio	ı		. 7.00		Problematic Hydrophytic Vegetation (Explai
Woody Vine Stratum Plot size (30	Foot Radius)				licators of hydric sil and wetland hydrology must be esent, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 2				Ve	ydrophytic egetation Yes V NO
Percent Bare Ground 2 Remarks:				I	
A prevalence index below three indicat	es a hydrophytio	veget	ation communit	y at this d	ata point.
US Army Corps of Engineers				W	estern Mountains, Valleys, and Coasts - Version 2.

		Metric		piii iiccuc			14-1-2	. 01 0	Similar t	he absence o	
Depth (inches)	Color	Matrix (moist)	%	Color	(moist)	x Feature: %	Type	- 1	oc2	Texture	Remarks
0-04	10YR	3/2	97	N	2.5/0	3	С	М	Sandy	Clay Loam	Coarse sand
04-16	2.5Y	4/3	95	10YR	4/6	5	С	М	Sandy	Clay Loam	Coarse sand
								=			
			(effect Of	4 Dedicate						31	uses Of Para Lates Manager
Type: C=Cor lydric Soil In								ited S	and Grai		ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
Histosol (, Histic Epi) Black Hist Hydrogen Depleted Thick Dar Sandy Mu Sandy Gle	pedon (A: tic (A3) Sulfide (Below Da k Surface ucky Mine	A4) ark Surfac a (A12) aral (S1)	e (A11)	Strip Loai Loai Dep Red Dep	dy Redox (Soped Matrix my Mucky M my Gleyed I leted Matrix lox Dark Su	(S6) Mineral (F° Matrix (F2 : (F3) rface (F6) Surface (F)	pt MI	.RA 1)	Red I Very Other	Muck (A10) Parent Material (TF2) Shallow Dark Surface (TF12) r (Explain in Remarks) s of hydrophytic vegetation and d hydrology must be present.
Sandy Greater La				Red	ox Depress	ions (F8)	-		-	uniess	disturbed or problematic.
Туре:	Sector For										
o J P a	740									Hydric Soil F	Present? Yes V No
Depth (inch	nes):										
lo specific h ut does not	ydric so show re	doximor									depth requirements for depletion esence of hydrophytic vegetation
Remarks: lo specific h ut does not nd wetland	nydric so show re hydrolog	doximorı	ohic feat								
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr	nydric so show re hydrolog SY rology In	doximorp	ohic feat	ures. Hov	vever, soils	s can be				lue to the pre	
emarks: le specific h ut does not nd wetland /DROLOG Vetland Hydr rimary Indica	nydric so show re hydrolog SY rology In	doximorp gy. dicators: imum of o	ohic feat	ures. Hov	vever, soils	s can be	conside	ered	hydric d	lue to the pre	esence of hydrophytic vegetation
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr	aydric so show re hydrolog SY rology In ators (min	dicators:	ohic feat	ures. Hov	vever, soils all that apply Water-Stai	s can be	conside	ered	hydric d	Second	esence of hydrophytic vegetation
emarks: o specific h ut does not nd wetland /DROLOG /etland Hydr rimary Indica	show re show re hydrolog SY rology In ators (min Vater (A1)	dicators:	ohic feat	ures. Hov	vever, soils all that apply Water-Stai	ned Leave	conside	ered	hydric d	Second	dary Indicators (2 or more required)
Pemarks: lo specific h ut does not nd wetland PDROLOG Vetland Hydr Indica Surface W High Wate Saturation Water Ma	show re hydrolog SY rology In ators (min Vater (A1) er Table (n (A3) rks (B1)	dicators: imum of o	ohic feat	ures. Hov	vever, soils all that apply Water-Stai	ned Leave 1, 2, 4A, a	es (B9) (and 4B)	ered	hydric d	Second Wa	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2
rimary Indica Surface V High Wate	show re hydrolog SY rology In ators (min Vater (A1) er Table (n (A3) rks (B1)	dicators: imum of o	ohic feat	ures. Hov	all that apply Water-Stai	ned Leave 1, 2, 4A, a (B11) vertebrate	es (B9) (nnd 4B)	ered	hydric d	Second Water Draws Draws Draws Sar	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C
PROLOGIVETION OF THE PROLOGIVE	sydric so show re hydrolog SY rology In ators (min Vater (A1) er Table (h (A3) rrks (B1) Deposits osits (B3)	dicators: imum of o) A2)	ohic feat	ures. Hov	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc thizosphe	es (B9) (and 4B) s (B13) dor (C1) res along	ered (exce	hydric d	Second Was Dra Dra Sa (C3) Ge	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2)
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr Surface W High Wate Saturation Water Ma Sediment Drift Depo	sydric soi show re hydrolog SY rology In ators (min Vater (A1) er Table (n (A3) arks (B1) Deposits osits (B3) or Crust	dicators: imum of o) A2)	ohic feat	ures. Hov	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc thizospheiof Reduce	es (B9) (and 4B) s (B13) dor (C1) res alond diron (C	ered (exce	pt	Second Wa Dra Dra Dra Sa (C3) Ge	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3)
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo	show re hydrolog in the show re hydrolog in the show re hydrology in the show re show	dicators: imum of o (B2)	ohic feat	ures. Hov	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence of	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oct thizosphe of Reduce n Reduction	es (B9) (nd 4B) s (B13) dor (C1) res alon d Iron (C	g Livi	pt ng Roots	Second Wa Dra Dra Dry Sa (C3) Ge Sh	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr Primary Indica Surface W High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S	show re hydrolog in tors (min Vater (A1) er Table (A3) or Crust is its (B5) soil Cracks	dicators: imum of o (B2) (B4) s (B6)	ne require	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence of	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc thizosphe of Reduce in Reduction Stressed	es (B9) (and 4B) s (B13) dor (C1) res alond d Iron (Con in Till Plants (g Livi	pt ng Roots	Second Wa Dra Dry Sa (C3) Ge Sh Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
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Remarks: lo specific h ut does not nd wetland YDROLOG YDROLOG Vetland Hydr Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely W ield Observa	show re hydrolog show re hydrolog show re hydrolog show re rology In ators (min vater (A1) er Table (A3) er Table (B3) or Crust show the s	dicators: imum of o) A2) (B2) (B4) s (B6) on Aerial I	ne require	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Octhizosphei of Reduce n Reduction Stressed	es (B9) (and 4B) s (B13) dor (C1) res alond d Iron (Con in Till Plants (g Livi	pt ng Roots	Second Wa Dra Dry Sa (C3) Ge Sh Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Remarks: lo specific h ut does not nd wetland YDROLOG Vetland Hydr Primary Indica Surface W High Water Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Vield Observa	rydric soi show re hydrolog show re hydrolog rology In ators (min Vater (A1) er Table (n (A3) or Crust soits (B3) or Crust soits (B5) soil Cracken Visible of Vegetated	dicators: imum of o (B2) (B4) s (B6) on Aerial I d Concave	magery (I	ed; check a	wever, soils all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen S Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc chizosphei of Reduce n Reduction Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res alond d Iron (Con in Till Plants (g Livi	pt ng Roots	Second Wa Dra Dry Sa (C3) Ge Sh Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Remarks: Io specific h ut does not nd wetland YDROLOG Vetland Hydr Primary Indica Surface W High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely W Tield Observa Surface Water Water Table P Saturation Pre	rology Intervention (Manual Control of Manual Co	dicators: imum of o) A2) (B4) s (B6) on Aerial I d Concave	ne require	ed; check and a second and a se	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc chizosphe of Reduce n Reduction Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res alond d Iron (Con in Till Plants (g Livi	pt ng Roots bils (C6)	Second Wa Dra Dra Sa (C3) Ge Sh FA	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
Remarks: No specific hout does not and wetland YDROLOG Wetland Hydromary Indication Surface Water Mater Table Posaturation Preincludes capil	show re hydrolog show re hydrolog show re hydrolog show re rology In ators (min Vater (A1) er Table (A3) or Crust (B3) or Crust (B5) soil Crackin Visible of Vegetated ations: Present? Present? Plary fringe	dicators: imum of o) A2) (B4) s (B6) on Aerial I d Concave	magery (les	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc chizospher of Reduction Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res alon d Iron (C on in Till Plants (marks)	g Livi (exce	pt ng Roots bils (C6) LRR A) Wetlan	Second Water Second Water Second Water Second Second Water Second	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Remarks: No specific hout does not and wetland YDROLOG Wetland Hydre Primary Indica Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation	show re hydrolog show re hydrolog show re hydrolog show re rology In ators (min Vater (A1) er Table (A3) or Crust (B3) or Crust (B5) soil Crackin Visible of Vegetated ations: Present? Present? Plary fringe	dicators: imum of o) A2) (B4) s (B6) on Aerial I d Concave	magery (les	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc chizospher of Reduction Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res alon d Iron (C on in Till Plants (marks)	g Livi (exce	pt ng Roots bils (C6) LRR A) Wetlan	Second Water Second Water Second Water Second Second Water Second	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Remarks: Ito specific hout does not not wetland YDROLOG Vetland Hydromary Indica Surface Water Ma Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely Water Table Posturation Presidudes capill describe Reco	sydric sor show re hydrolog rology In- ators (min Vater (A1) er Table (in (A3) or Crust sosits (B3) or Crust sosits (B5) soil Cracks in Visible of Vegetated ations: r Present? Present? llary fringe orded Dat	dicators: imum of o) A2) (B2) (B4) s (B6) on Aerial I d Concave ? Y Y e) eta (stream	magery (I	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc thizospheio of Reduce n Reduction Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res alond from (Con in Till Plants (marks)	g Livi C4) led Sc D1) (pt ng Roots pils (C6) LRR A) Wetlant tions), if	Second Water Second Water Second Water Second Second Water Second	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) best-Heave Hummocks (D7)

Project/Site: Silicon Mountain Wetland Mitigation Site	City/County: Silverbox	W Sampling Date: 6/14/2022
Applicant/Owner: MDT and Butte-Silver Bow County		State: Montana Sampling Point: DP06-up
Investigator(s): S Weyant, W Fouts	Section, Township, Ra	C OA T ON D OW
Landform (hillslope, terrace, etc.): Bench Subregion (LRR): LRR E Lat:	45.997905	convex, none): convex Slope (%): 10 5 Long: -112.663603 Datum: NAD 83
Soil Map Unit Name: Riverrun, occasionally flooded-Mannixlee,	frequently flooded co	omplex, 0 t NWI classification Not mapped
Are climatic / hydrologic conditions on the site typical for this time of your Are Vegetation, Soil, or Hydrology significantly provided the site of the sit	y disturbed? Are oblematic? (If ne	"Normal Circumstances" present? Yes No eeded, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: Yes No Wetland Present? No Remarks:	Is the Sampled within a Wetlan	
Upland data point located on bench at the south side of exca	vated cell 6, approxin	mately 2-3 feet above DP06-wet.
VEGETATION - Use scientific names of plants Absolute Domian	nt Indicator	Dominous Tost workshoot
Tree Stratum Plot size (30 Foot Radius) % Cover: Species	s? Status	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)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
,		Prevalence Index worksheet
		Total % Cover of: Multiply by: OBL species 0 X 1 0
		FACW species 0 X 2 0
		FAC species 60 X 3 180 FACU species 0 X 4 0
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 0 X 4 0 UPL species 0 X 5 0
Elymus repens 10	FAC	Column Totals 60 (A) 180 (B)
Leymus cinereus 50 🗸	FAC	
		Prevalence Index = B/A = 3 Hydrophytic Vegetation Indicators
		1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Parasant Paras Const. 10		Hydrophytic Vegetation Present? NO □
Percent Bare Ground 40 Remarks:		rieseitt:
Vegetation at this point has facultative indicators, which lead	ls to a positive domina	ance test and a prevalence index equal to three.
US Army Corps of Engineers		Western Mountains, Valleys, and Coasts - Version 2.0
•		, , , , , , , , , , , , , , , , , , , ,

SOIL									Sampling Point: DP06-up
Profile Des	cription: (Descri	be to the de	pth need	ed to docu	ment the i	ndicator	or confi	rm the absence	
Depth	Matri				ox Feature:			4. 777	
(inches)	Color (moist)	%	Color	(moist)	%	Type ¹	Loc2	Texture	Remarks
0-16	10YR 4/4	60	10YR	3/2	40			Sandy Clay	Mixed matrix
									* *-
	-		-						- 1
									^
	-		-			-			<.
-						_			3.5
	Concentration, D=0						ed Sand (ocation: PL=Pore Lining, M=Matrix.
	Indicators: (App	olicable to al				ed.)			tors for Problematic Hydric Soils ³ :
Histoso				dy Redox					cm Muck (A10)
	pipedon (A2)			oped Matri		N Value and			ed Parent Material (TF2)
	listic (A3)				Mineral (F		t MLRA		ery Shallow Dark Surface (TF12)
	en Sulfide (A4) ed Below Dark Sur	food (Add)		my Gleyed leted Matr	Matrix (F2)		0	ther (Explain in Remarks)
	ark Surface (A12)				urface (F6)			3Indica	tors of hydrophytic vegetation and
_	Mucky Mineral (S1				Surface (F				land hydrology must be present.
	Gleyed Matrix (S4			lox Depres		. 1			ess disturbed or problematic.
	Layer (if present								
Туре:	1,1000								
Depth (in	nches):							Hydric Sc	oil Present? Yes No 🗸
IYDROLO	OGY								
Wetland Hy	drology Indicato	rs:							
Primary Indi	icators (minimum	of one require	ed; check	all that app	ly)			Sec	ondary Indicators (2 or more required)
Surface	Water (A1)			Water-Sta	ained Leave	es (B9) (e	xcept		Water-Stained Leaves (B9) (MLRA 1, 2,
High W	ater Table (A2)			MLRA	1, 2, 4A, a	nd 4B)			4A, and 4B)
	ion (A3)			Salt Crus	t (B11)				Drainage Patterns (B10)
☐ Water N	Marks (B1)			Aquatic Ir	vertebrate	s (B13)			Dry-Season Water Table (C2)
Sedime	nt Deposits (B2)			Hydroger	Sulfide Od	dor (C1)			Saturation Visible on Aerial Imagery (C9
Drift De	posits (B3)			Oxidized	Rhizosphe	res along	Living Ro	oots (C3)	Geomorphic Position (D2)
Algal M	at or Crust (B4)				of Reduce				Shallow Aquitard (D3)
Iron De	posits (B5)			Recent In	on Reduction	on in Tille	d Soils (C	26)	FAC-Neutral Test (D5)
	Soil Cracks (B6)			Stunted of	r Stressed	Plants (D	1) (LRR		Raised Ant Mounds (D6) (LRR A)
	ion Visible on Aer		~ .	Other (Ex	plain in Re	marks)			Frost-Heave Hummocks (D7)
Sparse	y Vegetated Conc	ave Surface	(B8)						
Field Obse	rvations:				W 1				
Surface Wa	ter Present?	Yes		Depth (in	nches):		-3		
Water Table	Present?	Yes	No 🗸	Depth (in	nches):				
Saturation F		Yes	No	Depth (in	nches):		_ We	tland Hydrolo	gy Present? Yes No
Describe Re	pillary fringe) ecorded Data (stre	am gauge, n	nonitoring	well, aerial	photos, pr	evious ins	spections), if available:	
Domedica									
Remarks: No evidence	e of wetland hyd	droloav obe	erved						
	or moderna riye	5.59, 555	J. 75G.						

pplicant/Owner. MDT and Butte-Silver E vestigator(s): S Weyant, W Fouts	JOHN GOULTLY			State: Montana Sampling Point: DP06-wet
vestigator(s): O vveyant, vv i outs	•		Bankana wa	C 24 T ON D OW
The state of the s			Section, Township,	Truitge:
andform (hillslope, terrace, etc.): Local de ubregion (LRR): LRR E		_at:		/e, convex, none); concave Slope (%); 2 039 Long: -112.663771 Datum; NAD 83
				complex, 0 t NWI classification. Not mapped
			_	
	rology sign	ificantly	y disturbed? A roblematic? (If	re "Normal Circumstances" present? Yes V No f needed, explain any answers in Remarks.) It locations, transects, important features, etc.
Hydric Soil Present?	/es		Is the Samp within a We	
Remarks:				
PEM, depressional wetland point locat	ted at the SE end	d of ce	ll 6.	
VEGETATION - Use scientific na		Domior	at Indicator	
<u>Tree Stratum</u> Plot size (30 Foot Radi		Domiar Specie:		Dominance Test worksheet
				Number of Dominant Species that are OBL, FACW or FAC: (A)
				Total Number of Dominant Species Across All Strata: 3 (B)
Sapling/Shrub Stratum Plot size (15	Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
<u>supmigromus strutum</u>	r oor radius,			Prevalence Index worksheet
				Total % Cover of: Multiply by:
				OBL species 24 X 1 24
				FACW species 3 X 2 6 FAC species 67 X 3 201
				FACU species 1 X4 4
Herbaceous Stratum Plot size (5	Foot Radius)			
Herbaceous Stratum Plot size (5 Alopecurus pratensis	Foot Radius)	V	FAC	FACU species 1 X 4 4 UPL species 0 X 5 0
		✓	FAC OBL	FACU species 1 X 4 4 4 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Alopecurus pratensis	30			FACU species 1 X 4 4 UPL species 0 X 5 0 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria	30 20		OBL	FACU species 1 X 4 4 UPL species 0 X 5 0 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris	30 20 2		OBL FAC	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum	30 20 2 1 1 1		OBL FAC OBL OBL FACW	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum	30 20 2 1 1 1 20		OBL FAC OBL OBL FACW FAC	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus	30 20 2 1 1 1 20 5		OBL FAC OBL FACW FAC FAC	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis	30 20 2 1 1 1 20 5		OBL FAC OBL FACW FAC FAC FAC	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis Mentha arvensis	30 20 2 1 1 1 20 5 1		OBL FAC OBL OBL FACW FAC FAC FACU FACU	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis Mentha arvensis Poa palustris	30 20 2 1 1 1 20 5 1 2		OBL FAC OBL OBL FACW FAC FAC FAC FACU FACW FACW	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis Mentha arvensis	30 20 2 1 1 1 20 5 1		OBL FAC OBL OBL FACW FAC FAC FACU FACU	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis Mentha arvensis Poa palustris Potentilla anserina	30 20 2 1 1 1 20 5 1 2		OBL FAC OBL OBL FACW FAC FAC FAC FACU FACW FACW	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants
Alopecurus pratensis Beckmannia syzigachne Cirsium arvense Cyrtorhyncha cymbalaria Eleocharis palustris Epilobium ciliatum Hordeum jubatum Leymus cinereus Melilotus officinalis Mentha arvensis Poa palustris Potentilla anserina	30 20 2 1 1 1 20 5 1 2 10 2		OBL FAC OBL OBL FACW FAC FAC FAC FACU FACW FACW	FACU species 1 X 4 UPL species 0 X 5 Column Totals 95 (A) 235 (B) Prevalence Index = B/A = 2.47368 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is <= 3.0 1 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Explain Indicators of hydric sil and wetland hydrology must be

(inches)		Matrix				x Feature					
	Color		%	Colo	r (moist)	%	Type		oc²	Texture	Remarks
-02	2.5Y	4/2	100						Cla	ay Loam	
2-16	10YR	5/2	88	10Y	3/1	2	С	M	Sandy	Clay Loam	
2-16				10YR	5/6	10	С	M	Sandy	Clay Loam	
ype: C=Co ydric Soil Ir	ndicators			II LRRs, u	nless other	wise not		ted S	and Grai	Indicators	tion: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
Black His Hydrogen	ipedon (A itic (A3) 1 Sulfide (Below Da rk Surface	A4) ark Surface (A12)	≆ (A11)	Stri	ndy Redox (S pped Matrix my Mucky M my Gleyed I pleted Matrix dox Dark Sui pleted Dark S	(S6) Mineral (F2 Matrix (F2 (F3) rface (F6))	pt ML	.RA 1)	Red P Very S Other	Muck (A10) Parent Material (TF2) Shallow Dark Surface (TF12) (Explain in Remarks) s of hydrophytic vegetation and bydrology must be present,
Sandy Gl					lox Depress		. 1				disturbed or problematic.
estrictive L											31 10 2 3 10 3 10 3 10 3 10 10 10 10 10 10 10 10 10 10 10 10 10
- No. of the last											
Type:										WALESCONE	
Depth (incl emarks:		phic conc	entratio	ns promir	nent in mot	tles with	in the d	eplet	ed matr		resent? Yes <u>V</u> No <u></u>
Depth (inclements: rominent re	ediximorp		entratio	ns promir	nent in mot	tles with	in the d	eplet	ed matr		resent? Yes V No V
Depth (inclements: rominent re	ediximorp SY rology In	dicators:		19.3900	T-47 /C.		in the d	eplet	red matr	ix.	ary Indicators (2 or more required)
Depth (inclemarks: rominent research) DROLOG Vetland Hydrimary Indicates	GY rology Inators (minators (A1)	dicators:	ne requir	ed; check	all that apply	y) ned Leav	es (B9) (ix. Second	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2
Depth (inclemants: TOROLOG Tetland Hydrimary Indicate Surface V High Wate	GY rology In ators (min Nater (A1) er Table (dicators:	ne requir	ed; check	all that apply Water-Stai	y) ned Leavi	es (B9) (Second	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
Depth (inclemarks: Ominent reserved OROLOG Vetland Hydrimary Indicate Surface V High Wate	GY rology Inators (min Nater (A1) er Table (dicators:	ne requir	ed; check	all that apply	y) ned Leavi 1, 2, 4A , a (B11)	es (B9) (and 4B)			Second	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1,
Depth (inclemarks: TOROLOG TO	GY rology In ators (min Nater (A1) er Table (n (A3) arks (B1)	dicators: imum of o	ne requir	ed; check	all that apply Water-Stai MLRA	y) ned Leav 1, 2, 4A, a (B11) vertebrate	es (B9) (and 4B) s (B13)			Second Wa Dra Dry	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 4A, and 4B) inage Pattems (B10) -Season Water Table (C2)
Depth (inclemarks: TOROLOG TO	ediximorp rology In ators (min Vater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3)	dicators: imum of o (A2) (B2)	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen	y) ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe	es (B9) (and 4B) s (B13) dor (C1) res along	(exce	pt	Second Wa Dra Dry Sat (C3)	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2)
Depth (inclemarks: rominent recomment recomment recomment recomment) // DROLOG // DROLOG // DROLOG // Etland Hydromary Indication // Surface V // Saturation // Water Ma // Sediment // Drift Depo	ediximorp rology In ators (min Nater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3) or Crust	dicators: imum of o (A2) (B2)	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R	y) 1, 2, 4A, a (B11) vertebrate Sulfide Ochizosphe of Reduce	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (C	(exce g Livin C4)	pt ng Roots	Second Wa Dra Dry Sat (C3) Sha	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 24A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2)
Depth (inclemants: rominent reference of the common of the	ediximorp rology In- ators (min Nater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3) or Crust osits (B5)	dicators: imum of o (A2) (B2) (B4)	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti	es (B9) (and 4B) s (B13) dor (C1) res alonged fron (Con in Till	g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Depth (inclemarks: rominent reference of the common of the	rology In ators (min Nater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3) for Crust osits (B5) Soil Cracks	dicators: imum of o (A2) (B2) (B4) (B4)	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till Plants (g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec Sha FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Depth (inclemarks: rominent reference of the common of the	ediximorphic actors (minuted to the control of the	dicators: imum of o (A2) (B2) (B4) s (B6) on Aerial I	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till Plants (g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec Sha FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
Depth (inclemarks: rominent recomment recommen	ediximorp rology In- ators (min Nater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3) or Crust osits (B5) Soil Cracks n Visible o	dicators: imum of o (A2) (B2) (B4) (B4)	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till Plants (g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec Sha FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Depth (inclemarks: TOMINENT TO	ediximorp Tology In ators (min Nater (A1) er Table (n (A3) arks (B1) t Deposits osits (B3) or Crust osits (B5) Soil Cracke n Visible of Vegetated ations:	dicators: imum of o (A2) (B2) (B4) s (B6) on Aerial II	ne requir	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc khizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till Plants (g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec Sha FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Depth (inclemarks: rominent reserved by the common of the	ediximorphedixim	dicators: imum of o (A2) (B2) (B4) s (B6) on Aerial II d Concave	ne requir magery (Surface	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iro Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till Plants (g Livii g Livii c4)	pt ng Roots bils (C6)	Second Wa Dra Dry Sat (C3) Gec Sha FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Depth (inclements: rominent reserved. /DROLOG /etland Hydromary Indication Surface Valuration Water Mater Table Faturation Presidudes capi	ediximorphedixim	dicators: imum of o (A2) (B2) (B4) s (B6) on Aerial II d Concave	magery (Surface es es v	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed plain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (C on in Till Plants (marks)	g Livin (exce g Livin (C4) ed Sc D1) (I	pt ng Roots bils (C6) LRR A) Wetlan	Second Wa Dra Dry Sat (C3) Gee FAC FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) -Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A)
Depth (incle lemarks: rominent reserved to the lemarks and lemarks are lemarks and lemarks are lemarks. In lemarks are lemarks are lemarks are lemarks are lemarks are lemarks are lemarks. In lemarks are lemarks. In lemarks are l	ediximorphedixim	dicators: imum of o (A2) (B2) (B4) s (B6) on Aerial II d Concave	magery (Surface es es v	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed plain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (C on in Till Plants (marks)	g Livin (exce g Livin (C4) ed Sc D1) (I	pt ng Roots bils (C6) LRR A) Wetlan	Second Wa Dra Dry Sat (C3) Gee FAC FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) r-Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)
Depth (incl lemarks: rominent re /DROLOG /DROLOG /Etland Hydrimary Indica Surface V High Water Male Sediment Drift Depo Algal Mat Iron Depo Surface S Inundation Sparsely ield Observator Table F aturation Pre includes capillescribe Record	rology Invalors (min Nater (A1) er Table (min Nater (A3) er Ks (B1) t Deposits osits (B3) t or Crust osits (B5) Soil Cracks in Visible of Vegetated ations: r Present? essent? ellary fringer	dicators: imum of o (B2) (B2) (B4) s (B6) on Aerial II d Concave y y y a (stream	magery (surface es gauge, n	ed; check	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized R Presence of Recent Iron Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Ochizosphe of Reduce in Reduction Stressed blain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d fron (C on in Till Plants (marks)	g Livin C4) ed Sc D1) (I	pt ing Roots bits (C6) LRR A) Wetlantions), if	Second Wa Dra Dry Sat (C3) Gec Rai FAC	ary Indicators (2 or more required) ter-Stained Leaves (B9) (MLRA 1, 2) 4A, and 4B) inage Pattems (B10) r-Season Water Table (C2) uration Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) sed Ant Mounds (D6) (LRR A) st-Heave Hummocks (D7)

Project/Site: Silicon Moun	tain Wetland Mitigation Site		City/Co	ounty: Silverbou	N Sampling Date: 6/13/2022
Applicant/Owner: MDT and	Butte-Silver Bow County		2	127	State: Montana Sampling Point: DP07-up
nvestigator(s): S Weyant,	W Fouts		Section	n, Township, Ra	nge: S 24 T 3N R 9W
andform (hillslope, terrace, Subregion (LRR): LRR E		Lat:	Local		convex, none); flat Slope (%); 2 Long: -112.662277 Datum; NAD 83
Soil Map Unit Name: Rive	rrun, occasionally flooded-Man	nixlee,	freque	ntly flooded co	omplex, 0 NWI classification. Not mapped
re Vegetation, Soil	, or Hydrology sign	ificantly urally pro	disturb oblemat	ed? Are tic? (If ne	(If no, explain in Remarks.) Normal Circumstances" present? Yes No edded, explain any answers in Remarks.) ocations, transects, important features, etc.
Hydrophytic Vegetation Pr Hydric Soil Present? Wetland Hydrology Preser	esent? Yes No No No No			Is the Sampled within a Wetlar	Area
	cated adjacent to DP07-wet.			1	
VEGETATION - Use	scientific names of plants Absolute	Domiant	t ln.	dicator	
<u>Tree Stratum</u> Plot size	(00 Foot Doding)	Species		atus	Dominance Test worksheet
					Number of Dominant Species that are OBL, FACW or FAC: (A)
					Total Number of Dominant Species Across All Strata: 1 (B)
Sapling/Shrub Stratum	Plot size (15 Foot Radius)				Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)
<u></u>					Prevalence Index worksheet
					Total % Cover of: Multiply by:
					OBL species 0 X 1 0 FACW species 10 X 2 20
					FAC species 20 X3 60
					FACU species 0 X 4 0
Herbaceous Stratum	Plot size (5 Foot Radius)				UPL species 50 X 5 250
Bromus inermis	50	✓	UPL		Column Totals 80 (A) 330 (B)
Elymus repens	15		FAC		Prevalence Index = B/A = 4.125
Hordeum jubatum Juncus balticus	5 10		FAC FAC		Hydrophytic Vegetation Indicators
various paitious	10		170	· v · v	1 - Rapid Test for Hydrophytic Vegetation
					☐ 2 - Dominance Test is >50%
					☐ 3 - Prevalence Index is <= 3.0
					4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
					5 - Wetland Non-Vascular Plants
					Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum	Plot size (30 Foot Radius)				Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare G	round 20				Hydrophytic Vegetation Present? NO ✓
Remarks:					
An upland vegetation o	ommunity is present at this dat	a point.			
US Army Corps of Engine	ers				Western Mountains, Valleys, and Coasts - Version 2.0
, , , , , , , , , , , ,					, , ,

OIL										Sampling Point: DP07-up
Profile Desc	cription: (I	Describe	to the de	oth neede	d to docu	ment the i	ndicator	or confirm	the absence	of indicators.)
Depth	0.0	Matrix				ox Feature		1 2	+101	- Advantage
(inches)	Color (•	%	Color	(moist)	%	Type ¹	Loc²	Texture	Remarks
0-02	10YR	2/2	100					Silty	Clay Loam	
02-16	10YR	3/2	80	10YR	4/4	20	_	Silty	Clay Loam	Mixed matrix.
				_				_		
				_				_		
			e de la San		rational de			1000	- 0	
	oncentratio Indicators							ed Sand Gr		ration: PL=Pore Lining, M=Matrix.
F-100		· [whhit	able to at				eu.,		the state of the state of	
Histosol		0.			dy Redox					Muck (A10)
	pipedon (A2	2)			oped Matri		N Vendera			Parent Material (TF2)
	istic (A3)	* 40						t MLRA 1)		Shallow Dark Surface (TF12)
	en Sulfide (and the same			Matrix (F2)		Othe	er (Explain in Remarks)
	d Below Da		ce (A11)		leted Matri				3, 3	
	ark Surface					urface (F6)				rs of hydrophytic vegetation and
	lucky Mine					Surface (F	7)			nd hydrology must be present,
	Sleyed Matr			Red	lox Depres	sions (F8)			unles	s disturbed or problematic.
	Layer (if pr	resent):								
Type:	SEZ-A-O								10.43.630	
Depth (in	ches):		-	_					Hydric Soil	Present? Yes No V
YDROLO	70									
Wetland Hy	munication.			2000	0.00				20.00	40.45 To 20.45 To 20.
rimary India			one require	d; check				17771-75		dary Indicators (2 or more required)
	Water (A1)			-		ained Leav		xcept	W	ater-Stained Leaves (B9) (MLRA 1, 2
	ater Table (A2)				1, 2, 4A, a	nd 4B)			4A, and 4B)
Saturation				_	Salt Crus					rainage Pattems (B10)
	larks (B1)			_		vertebrate				ry-Season Water Table (C2)
	nt Deposits	(B2)		_	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Sulfide Od				aturation Visible on Aerial Imagery (C
Drift De	posits (B3)				Oxidized	Rhizosphe	res along	Living Root	Is (C3) G	eomorphic Position (D2)
Algal Ma	at or Crust ((B4)			Presence	of Reduce	d Iron (C	4)	SI	hallow Aquitard (D3)
Iron Dep	osits (B5)				Recent In	on Reducti	on in Tille	d Soils (C6)	FA	AC-Neutral Test (D5)
Surface	Soil Cracks	s (B6)			Stunted o	r Stressed	Plants (D	1) (LRR A)	R	aised Ant Mounds (D6) (LRR A)
Inundati	on Visible o	on Aerial	imagery (E	37)	Other (Ex	plain in Re	marks)		Fr	rost-Heave Hummocks (D7)
	y Vegetated				, , , , , ,					
ield Obser				1-3-7-				_		
Surface Wat	er Present?	? 1	es 🗆	No 🗸	Depth (in	ches):				
Vater Table			/es 🗌		Depth (in			= -		
Saturation P	resent?	1	es		Depth (in			Wetla	ind Hydrology	Present? Yes No V
Describe Re	corded Dat	a (stream	n gauge, m	onitoring	well, aerial	photos, pr	evious ins	spections), i	f available:	
Remarks:										
lo evidence	e of wetlar	nd hydro	ology obse	erved.						
		-								

Project/Site: Silicon Mountain Wetland Mitigation Site	City/County: Silverbow	Sampling Date: 6/13/2022
Applicant/Owner: MDT and Butte-Silver Bow County	50 m/s 17 m 2010 10 5	State: Montana Sampling Point: DP07-wet
Investigator(s): R Jones, M Hickey	Section, Township, Range	C OA T ON D OW
Landform (hillslope, terrace, etc.): Valley bottom		vex, none); hummocky Slope (%); 2
Subregion (LRR): LRR E Lat:		ong:112.662201 Datum; NAD 83
Soil Map Unit Name: Riverrun, occasionally flooded-Mannixlee,		
Are climatic / hydrologic conditions on the site typical for this time of y		
Are Vegetation, Soil, or Hydrology significant		rmal Circumstances" present? Yes V No
Are Vegetation, Soil, or Hydrology naturally p		ed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin		
	g sampling point loc	ations, transects, important reatures, etc.
Hydrophytic Vegetation Present? Yes ✓ No Hydric Soil Present? Yes ✓ No ✓	Is the Sampled Ar	ea
Wetland Hydrology Present? Yes ✓ No □	within a Wetland?	Yes No
Remarks:	1	
PEM, depressional wetland located near north boundary of the	he wetland that surround	s cell 1.
VECTATION Has accomplish names of plants		
VEGETATION - Use scientific names of plants Absolute Domia	nt Indicator	
Tree Stratum Plot size (30 Foot Radius) % Cover: Specie	s? Status	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)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
- Introduction of the contraction		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 20 X 1 20 FACW species 20 X 2 40
		FAC species 10 X 3 30
		FACU species 0 X 4 0
Herbaceous Stratum Plot size (5 Foot Radius)		UPL species 0 X 5 0
Elymus repens 5	FAC	Column Totals 50 (A) 90 (B)
Hordeum jubatum 5 ☐ Juncus balticus 20 ✓	FAC FACW	Prevalence Index = B/A = 1.8
Juncus balticus 20 Typha latifolia 20		Hydrophytic Vegetation Indicators
Typha lationa 20	<u> </u>	1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		ndicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Powert Powe Cround 50		Hydrophytic Vegetation Yes ✓ NO □ Present?
Percent Bare Ground 50 Remarks:		
A positive dominance test and a low prevalence index indica	ate the presence of a hyd	lrophytic plant community.
US Army Corps of Engineers	,	Western Mountains Valleys and Coasts Version 2.0
US Army Corps of Engineers		Western Mountains, Valleys, and Coasts - Version 2.0

SOIL											Sampling Point: DP07-wet
Profile Des	cription: (Describe	to the de	pth neede	d to docu	ment the i	ndicato	rorc	onfirm	the absence	ce of indicators.)
Depth	1000	Matrix	-	-		x Feature			3	27.	2
(inches)		(moist)	%	Color	(moist)	%	Type		oc²	Texture	Remarks
0-02	10YR	2/2	100							Muck	
02-06	10YR	3/2	100						Sa	ndy Loam	Too wet to texture accurately.
06-12	2.5YR	4/2	80	10YR	4/6	20	С	M	Silty	Clay Loan	n
12-17	2.5Y	3/1	97	7.5YR	5/8	3	С	M,	Silty	Clay Loan	Mg centers within concentrati
								-	_		- 8
-	-		-	-					_		3.5
¹Type: C=C	Concentration	on, D=Dep	pletion, RN	/I=Reduced	d Matrix, C	S=Covered	d or Coa	ted S	and Gra	ins. ² L	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil		: (Applic	cable to a	II LRRs, u	nless othe	rwise not	ed.)				tors for Problematic Hydric Soils ³ :
Histoso					dy Redox (cm Muck (A10)
	pipedon (A	2)			ped Matrix						ed Parent Material (TF2)
	listic (A3)				ny Mucky I			pt ML	RA 1)		ery Shallow Dark Surface (TF12)
	en Sulfide (Loan	ny Gleyed	Matrix (F2	2)			01	ther (Explain in Remarks)
Deplete	ed Below Da	ark Surfac	ce (A11)	Dep	leted Matri	x (F3)					
Thick D	ark Surface	e (A12)		Red	ox Dark Su	rface (F6)				3Indica	ators of hydrophytic vegetation and
Sandy	Mucky Mine	eral (S1)		Dep	leted Dark	Surface (F	7)			wet	lland hydrology must be present,
Sandy	Gleyed Mat	rix (S4)		Red	ox Depress	sions (F8)				unle	ess disturbed or problematic.
Restrictive	Layer (if p	resent):									
Type:	7. 10-25-7										
Depth (in	achael:								- 1	Hudrin Co	oil Present? Yes 🔽 No 🗆
YDROLO	2.77.0	diantaer									
Primary Ind	The state of the s			ad: aback s	all that anni	he)				Soc	ondary Indicators (2 or more required)
7.00			one requir	ed, check a					3		the second of the second secon
	Water (A1)			-	Water-Sta			exce	pt		Water-Stained Leaves (B9) (MLRA 1, 2,
	ater Table ((A2)				1, 2, 4A, a	ind 4B)				4A, and 4B)
✓ Saturat	ion (A3)				Salt Crust	(B11)					Drainage Patterns (B10)
Water I	Marks (B1)				Aquatic In	vertebrate	s (B13)				Dry-Season Water Table (C2)
Sedime	nt Deposits	(B2)		✓	Hydrogen	Sulfide Od	dor (C1)				Saturation Visible on Aerial Imagery (C9
Drift De	posits (B3)			✓	Oxidized F	Rhizosphe	res alon	g Livir	g Root	s (C3)	Geomorphic Position (D2)
	at or Crust				Presence	and the Control			7, 07,		Shallow Aquitard (D3)
	posits (B5)				Recent Iro				ils (C6)		FAC-Neutral Test (D5)
	Soil Crack				Stunted or				1		Raised Ant Mounds (D6) (LRR A)
	ion Visible	and the same of the same of	lmanan (D7\	Other (Ex			D 1) (L	-KK-A)		Frost-Heave Hummocks (D7)
	ly Vegetate			~ -	Office (EX	piaiti iii Ke	marks)				Prost-fleave fluffillocks (D7)
		d Concav	е бипасе	(B0)				-			
Field Obse	rvations:			486							
Surface Wa	ter Present	5 1	es	No	Depth (in	ches):		-3			
Water Table	Present?	Y	es 🗸	No	Depth (in	ches):		10			
Saturation F	4, 4, 14, 15, 14, 17, 18		es_V	No	Depth (in	ches):		0	Wetla	nd Hydrolo	gy Present? Yes V No
(includes ca Describe Re	ecorded Dat	ta (stream	n gauge, n	nonitoring v	vell, aerial	photos, pr	evious ir	spec	tions), if	available:	
			- 4. " 1								
Remarks:	fwotland	budral	W DEC	tin a ···-t	ortoble et	ا م طمحاد	of 40 :	obss	from 4	ho coil	face acturation at the sail surface -
											face, saturation at the soil surface, a
positive FA	.∪-neutral	iest, and	ı geomor	pnic posit	ion. A pei	rcned wat	er table	e may	pe pr	esent.	

Project/Site: Silicon Mountain Wetland		City/C	County: Silverbow		Sampling Da	ate: 6/13/2022
Applicant/Owner: MDT and Butte-Silver	Bow County			State: Montan	a Sampling Po	oint: DP08-up
nvestigator(s): R Jones, M Hickey		Secti	on, Township, Range	S 24	T 3N R	9W
Landform (hillslope, terrace, etc.): <u>Undula</u> Subregion (LRR): <u>LRR</u> E	Lat			ong:	-112.656288	5 54554.10
Soil Map Unit Name: Mannixlee-Boneba	sin complex, 0 to 4 p	percent sl	lopes, frequently flo	oded NWI class	ification Not ma	pped
Are climatic / hydrologic conditions on the start Vegetation, Soil, or Hydre Vegetation, Soil, or Hydrologic Common Action Summary OF FINDINGS - Atta	drology signific drology natural ch site map shov	antly distur ly problem ving san	rbed? Are "Nor atic? (If needs	mal Circumstance ed, explain any ans	s" present? Yes wers in Remarks	s.)
Hydric Soil Present? Wetland Hydrology Present?	Yes □ No ✓ Yes □ No ✓ Yes □ No ✓		Is the Sampled Are within a Wetland?		□ No <u>▼</u>]
Remarks: Upland sample point located near of VEGETATION - Use scientific n			2			
	Absolute Do	miant I	ndicator	Dominance Test v	workshoot	
<u>Tree Stratum</u> Plot size (30 Foot Rad	dius) % Cover: Spo	ecies? S	Status	Number of Dominathat are OBL, FAC	nt Species	0 (A)
				Total Number of D Species Across Al	Strata:	3 (B)
Sapling/Shrub Stratum Plot size (15	5 Foot Radius)			Percent of Domina That Are OBL, FA		0 % (A/B)
<u>-apmig.om ab otratam</u>	, root radiae,			Prevalence Index		
				Total % Cove OBL species	erof: 0 X1	Multiply by:
				FACW species	0 X 1	0
				FAC species	0 X3	0
Harbanana Christian Diet eize / /	- Fact Dadius)			FACU species	30 X4	120
	5 Foot Radius)	_ IID	NI.	UPL species	17 X 5	85
Descurainia sophia Ericameria nauseosa	2 [15 [UP ✓ UP		Column Totals	47 (A)	205 (B)
Pascopyrum smithii	<u></u>		CU	Prevalence In	dex = B/A = 4	.36170
Poa secunda				Hydrophytic Vege		
					Test for Hydropl nance Test is >50	, ,
					lence Index is <=	
					iological Adaptat g data in remark	s or on separate
				5 - Wetla	nd Non-Vascular	Plants
				Problema	tic Hydrophytic \	/egetation (Explain)
Woody Vine Stratum Plot size (3	30 Foot Radius)			ndicators of hydric resent, unless dist		
Percent Bare Ground 53			,	Hydrophytic Vegetation Present?	Yes NO	V
Remarks:						
This data point is dominated by uplan	nd vegetation.					
US Army Corps of Engineers			\	Vestern Mountains	s, Valleys, and C	oasts - Version 2.0

SOIL									Sampling Point: DP08-up
Profile Desi	cription: (Describe	to the de	oth needed to docu	ment the in	ndicator	or confirm	the absence	
Depth		Matrix	2, 1, 1, 1,	Redo	ox Features				
(inches)	Color	(moist)	%	Color (moist)	%	Type ¹	Loc2	Texture	Remarks
0-03	10YR	2/2	100				Sa	ndy Loam	Charcoal present
03-12	2.5YR	3/4	100				Sa	indy Clay	Charcoal present
12-16	5YR	4/6	100				Sand	y Clay Loam	
===	=		-	>=====					£
-	-			-		_			-
				=Reduced Matrix, C			d Sand Gra		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators	: (Applie	cable to al	LRRs, unless other	rwise note	(d.)		the state of the state of	rs for Problematic Hydric Soils ³ :
Histosol				Sandy Redox (Muck (A10)
	pipedon (A	2)		Stripped Matrix			ec sin and		Parent Material (TF2)
	istic (A3)			Loamy Mucky			MLRA 1)		Shallow Dark Surface (TF12)
	en Sulfide (2.4.40	Loamy Gleyed).		Othe	er (Explain in Remarks)
	d Below Da		ce (A11)	Depleted Matri				3,	
	ark Surface			Redox Dark Su					rs of hydrophytic vegetation and
	Mucky Mine			Depleted Dark		7)			nd hydrology must be present,
	Gleyed Mat			Redox Depres	sions (F8)			unles	s disturbed or problematic.
Restrictive	Layer (if p	resent):							
Туре:				_					
Depth (in	ches):			_				Hydric Soil	Present? Yes No
IYDROLO	GY								
Wetland Hy	The state of the s							200	To de Todo La como de Car
			one require	d; check all that app			9013		idary Indicators (2 or more required)
	Water (A1)				ined Leave	A 2 4 7 8 2	xcept	W	/ater-Stained Leaves (B9) (MLRA 1, 2,
	ater Table ((A2)			1, 2, 4A, a	nd 4B)			4A, and 4B)
Saturati				Salt Crust					rainage Pattems (B10)
	Marks (B1)				vertebrates				ry-Season Water Table (C2)
	nt Deposits				Sulfide Od				aturation Visible on Aerial Imagery (C9
	posits (B3)				Rhizospher			s (C3) G	eomorphic Position (D2)
	at or Crust				of Reduced		,		hallow Aquitard (D3)
	posits (B5)				on Reduction				AC-Neutral Test (D5)
Surface	Soil Crack	s (B6)		Stunted o	r Stressed I	Plants (D	1) (LRR A)	R	aised Ant Mounds (D6) (LRR A)
	ion Visible				plain in Rer	marks)		Fr	rost-Heave Hummocks (D7)
Sparsel	y Vegetate	d Concav	e Surface	(B8)					
Field Obser	vations:								
Surface Wat	er Present	3 1	es	No Depth (in	ches):				
Water Table	Present?	3	es 🗌	No Depth (in	ches):		31.		
Saturation P			es _	No Depth (in			Wetla	nd Hydrology	y Present? Yes No 🗸
Describe Re	corded Dat	ta (strean	n gauge, m	onitoring well, aerial	photos, pre	evious ins	pections), if	available:	
Remarks:									
No evidence	e of wetla	nd hvdro	ology obse	erved.					
	- 0. Would	yuic							

	d Mitigation Site	City/County: Silverb	
pplicant/Owner MDT and Butte-Silve	i Dow County	An artistance	State: Montana Sampling Point: DP08-wet
vestigator(s): S Weyant, W Fouts		Section, Township, I	
andform (hillslope, terrace, etc.): <u>Hillsid</u> ubregion (LRR): <u>LRR</u> E	Lat:	46.0026	/e, convex, none): <u>convex</u> Slope (%):
oil Map Unit Name: Mannixlee-Boneb	asin complex, 0 to 4 p	ercent slopes, frequer	ntly flooded NVVI classification PEM
re climatic / hydrologic conditions on the re Vegetation, Soil, or H re Vegetation, Soil, or H	ydrology significa ydrology naturally	ntly disturbed? Ar problematic? (If	o (If no, explain in Remarks.) re "Normal Circumstances" present? Yes No f needed, explain any answers in Remarks.) t locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes	Is the Sampl within a Wet	
Remarks: PEM depressional wetland sample	point located on floodp	lain bench next to a s	pring-fed channel.
VEGETATION - Use scientific	names of plants		
Tree Stratum Plot size (30 Foot R	adius)	niant Indicator cies? Status	Dominance Test worksheet
	70 Cover. Spe	oles: Olalus	Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
			Total Number of Dominant Species Across All Strata: 1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
			Prevalence Index worksheet
			Total % Cover of: Multiply by:
			OBL species 11 X1 11 FACW species 1 X2 2
			FAC species 73 X3 219
			FACU species 2 X 4 8
<u>Herbaceous Stratum</u> Plot size (5 Foot Radius)		UPL species 1 X 5 5
Agrostis stolonifera	5] FAC	Column Totals 88 (A) 245 (B
Alopecurus pratensis	60	FAC	Prevalence Index = B/A = 2.78409
Carex nebrascensis	10] OBL	
Cirsium arvense	1] FAC	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Equisetum hyemale	1 _	FACW	✓ 2 - Dominance Test is >50%
Lepidium perfoliatum	1 [] FACU	✓ 3 - Prevalence Index is <= 3.0
Linaria vulgaris	1 [] UPL	
Poa palustris	2] FAC	4 - Morphological Adaptations (Provide supporting data in remarks or on separate
Poa pratensis	5] FAC	sheet.
Taraxacum officinale Veronica americana	1 [] FACU] OBL	5 - Wetland Non-Vascular Plants
veronica anteneana	ı	JOBL	Problematic Hydrophytic Vegetation (Explai
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 12			Hydrophytic Vegetation Present? Ves ✓ NO
Remarks: A positive dominance test and a pro	evalence index below t	hree indicate hydroph	nytic vegetation.

		Matrix		Contraction of	Redo	x Feature			276	the absence o	
Depth (inches)	Color (%	Color	(moist)	%	Type	Loc2		Texture	Remarks
0-02	10YR	3/2	100						Saı	ndy Loam	Fine roots.
)2-10	10YR	4/2	90	5YR	4/6	5		S	and	/ Clay Loam	
0-18	2.5YR	4/6	90	10YR	2/1	5	С	M,	Sa	ndy Clay	
10-18				2.5YR	4/8	5	С	M,	Sa	ndy Clay	
								-	_		
Type: C=Con								ted Sand	l Gra		ation: PL=Pore Lining, M=Matrix. s for Problematic Hydric Soils ³ :
Histosol (A Histic Epip Black Histi Hydrogen Depleted E Thick Dark Sandy Mu	edon (A2 ic (A3) Sulfide (/ Below Da c Surface cky Mine	A4) rk Surface (A12) ral (S1)	e (A11)	Strip Loai Loai V Dep Red Dep	dy Redox (Soped Matrix my Mucky M my Gleyed leted Matrix ox Dark Su leted Dark S	(S6) Mineral (F° Matrix (F2 (F3) rface (F6) Surface (F)	ot MLRA	1)	Red F Very Other	Muck (A10) Parent Material (TF2) Shallow Dark Surface (TF12) r (Explain in Remarks) s of hydrophytic vegetation and d hydrology must be present.
Sandy Gle				L Red	ox Depress	ions (F8)	-			unless	disturbed or problematic.
Туре:	, (F.										
31.5										Hydric Soil F	Present? Yes V No
	2000	phic feat	ures cor	mmon witl	nin the dep	oleted ma	atrix.				
emarks: rominent rec	doximor	phic feat	ures cor	mmon with	nin the dep	oleted ma	atrix.				
emarks: rominent rec	doximor		ures cor	mmon with	nin the dep	oleted ma	atrix.				
rominent rec	doximor Y ology Inc	dicators:		0.000	T-47- FC		atrix.				dary Indicators (2 or more required)
emarks: rominent rec 'DROLOG' /etland Hydro	Y ology Industria	dicators: mum of o	ne requir	ed; check a	T-47- FC	y)		except		Second	
PROLOG Vetland Hydrorimary Indicat Surface W. High Wate	Y ology Industry alors (minimal rable (A1))	dicators:	ne requir	ed; check a	all that apple Water-Stai MLRA	y) ned Leavi	es (B9) (except		Second	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B)
PROLOG Petland Hydrorimary Indicat Surface W High Wate Saturation	Y ology Incore (Minimum (A1) r Table (, (A3)	dicators:	ne requir	ed; check a	all that apply Water-Stai MLRA Salt Crust	y) ned Leavi 1, 2, 4A , a (B11)	es (B9) (and 4B)	except		Second Wa	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10)
PROLOGIVETIAND HIGH Water Manual Mater Manual Manua	Y ology Incors (mini later (A1) r Table (, (A3) ks (B1)	dicators: mum of o	ne requir	ed; check a	all that apple Water-Stai MLRA Salt Crust Aquatic Inv	y) ned Leav 1, 2, 4A, a (B11) vertebrate	es (B9) (and 4B) s (B13)	except		Second Wa	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2)
PROLOG Vetland Hydro rimary Indicat Surface W High Wate Saturation Water Mar Sediment I	Y ology Indices (Minimum (A3) r Table (A3) rks (B1) Deposits	dicators: mum of o	ne requir	ed; check a	all that appl Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen	y) ned Leavi 1, 2, 4A , a (B11) vertebrate Sulfide Od	es (B9) (and 4B) s (B13) dor (C1)			Second Wa Dra Dry Sa'	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (C
POROLOGIA Vetland Hydro Vetland Hydro Vetland Hydro Vetland Hydro Vetland Hydro Surface W High Wate Saturation Water Man Sediment I Drift Depos	Y ology Indiors (mini later (A1) or Table (, (A3) ks (B1) Deposits sits (B3)	dicators: mum of o A2) (B2)	ne requir	ed; check a	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F	y) ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe	es (B9) (and 4B) s (B13) dor (C1) res along	g Living f	Roots	Second Wa Dra Dry Sai (C3)	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2)
YDROLOG YDROLOG Yetland Hydro Trimary Indicat Surface W High Wate Saturation Water Man Drift Depos Algal Mat o	Y ology Indicater (A1) r Table ((A3) ks (B1) Deposits sits (B3) or Crust (dicators: mum of o A2) (B2)	ne requir	ed; check a	Water-Stai MLRA Salt Crust Aquatic In Hydrogen Oxidized F Presence	y) 1, 2, 4A, a (B11) vertebrate Sulfide Ochizosphe of Reduce	es (B9) (and 4B) s (B13) dor (C1) res along d fron (C	g Living F		Second Wa Dra Dra Dry Sa' G(C3) Sh	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3)
YDROLOG YDROLOG Yetland Hydro Yimary Indicat High Wate Saturation Water Man Sediment I Drift Depos Algal Mat o	Y ology Incore (Minimum r Table (, (A3) rks (B1) Deposits (B3) or Crust (dicators: mum of o (A2) (B2)	ne requir	ed; check a	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti	es (B9) (and 4B) s (B13) dor (C1) res along d fron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dra Sai (C3) FA	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
POROLOG Vetland Hydromany Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Iron Depos Surface So	Y ology Industry (A3) ks (B1) Deposits sits (B3) or Crust (sits (B5) oil Cracks	dicators: mum of o A2) (B2) (B4)	ne requir	ed; check s	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dry Sai S(C3) FA Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
PROLOGIVETION OF THE PROPERTY	Y ology Indices (Minimum later (A1) or Table (A3) r Table (B1) Deposits (B3) or Crust (B5) oil Cracks Visible of	dicators: mum of o A2) (B2) (B4) s (B6) on Aerial I	ne requir	ed; check a	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dry Sai S(C3) FA Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Patterns (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5)
PROLOG Petland Hydro Indicate Water Man Sediment I Drift Depose Algal Mat of Iron Depose Inundation Sparsely V	Y ology Indicate (A1) r Table ((A3) r Table (B1) Deposits (B3) or Crust (B3)	dicators: mum of o A2) (B2) (B4) s (B6) on Aerial I	ne requir	ed; check a	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dry Sai S(C3) FA Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
POROLOG Vetland Hydro Indicate Surface W High Wate Saturation Water Man Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V ield Observa	Y ology Incore (minimal of the core (minimal of th	dicators: mum of o (B2) (B2) (B4) s (B6) on Aerial II	ne requir	ed; check a	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc khizosphe of Reduce n Reducti Stressed	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dry Sai S(C3) FA Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
YDROLOG YDROLOG Yetland Hydro Ymary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V ield Observa	Y ology Intersections: Present?	dicators: mum of o A2) (B2) (B4) s (B6) on Aerial II d Concave	ne requir magery (ed, check a	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reduce n Reducti Stressed plain in Re	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils	(C6)	Second Wa Dra Dry Sai S(C3) FA Ra	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
POROLOG Vetland Hydro Vetland Hydr	Y ology Indices (Minimum (Mater (A1)) or Table (Mater (A3)) or Crust (Minimum (Mater (A3)) or Crust (Minimum (Mater (A3)) or Crust (Minimum (Minimu	dicators: mum of o A2) (B2) (B4) (B6) on Aerial II (Concave	magery (ed; check :	Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oo Rhizosphe of Reduce n Reducti Stressed olain in Re	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (Con in Till	g Living F 24) ed Soils D1) (LRF	(C6) RA)	Second Wa Dra Dry Sa(C3) Ge Sh. Ra Fro	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A)
YDROLOG YDROLOG Vetland Hydro Primary Indicat Surface W High Wate Saturation Water Mar Sediment I Drift Depos Algal Mat o Iron Depos Surface So Inundation Sparsely V Tield Observa Surface Water Vater Table Prosence Control of Presence Control of Pre	Y ology Indices (Minimum (Mas) r Table (Mas) r Table (Mas) r Table (Mas) r Crust (Mas) r Crust (Minimum (Mas) r Crust (Minimum (Mas) r Crust (Minimum (Mas) r Crust (Minimum (dicators: mum of o A2) (B2) (B4) (B6) on Aerial II d Concave	magery (Surface es es	ed; check a	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed plain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (C on in Tilli Plants (I	g Living F C4) ed Soils D1) (LRF	(C6) RA)	Second Wa Dra Dry Sa' S(C3) FA Ra Fro	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
Prominent recomment recomment recomment recomment recomment I was a surface Water Mare Sediment I prift Deposer Algal Mat comment I ron Deposer Surface Score Inundation	Y ology Indices (Minimum (Mas) r Table (Mas) r Table (Mas) r Table (Mas) r Crust (Mas) r Crust (Minimum (Mas) r Crust (Minimum (Mas) r Crust (Minimum (Mas) r Crust (Minimum (dicators: mum of o A2) (B2) (B4) (B6) on Aerial II d Concave	magery (Surface es es	ed; check a	water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence Recent Iro Stunted or Other (Exp	ned Leave 1, 2, 4A, a (B11) vertebrate Sulfide Oc Rhizosphe of Reducti Stressed plain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d Iron (C on in Tilli Plants (I	g Living F C4) ed Soils D1) (LRF	(C6) RA)	Second Wa Dra Dry Sa' S(C3) FA Ra Fro	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)
POROLOG Vetland Hydro Vetland Hydr	Y ology Indicate (A1) r Table (, (A3) r Table	dicators: mum of o A2) (B2) (B4) s (B6) on Aerial II d Concave y (Y) y (Y) a (stream	magery (Surface es gauge, n	B7) (B8) No No No No No No No No No No	all that apply Water-Stai MLRA Salt Crust Aquatic Inv Hydrogen Oxidized F Presence of Recent Iro Stunted or Other (Exp	y) ined Leave 1, 2, 4A, a (B11) vertebrate Sulfide Ochizosphe of Reduce in Reduction Stressed blain in Re ches): ches): ches):	es (B9) (and 4B) s (B13) dor (C1) res along d fron (C on in Till Plants (I marks)	g Living F (4) ed Soils D1) (LRF	(C6) RA)	Second Wa Dra Dry Sai (C3) Ra Fro Hod Hydrology available:	dary Indicators (2 or more required) ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) ainage Pattems (B10) y-Season Water Table (C2) turation Visible on Aerial Imagery (Comorphic Position (D2) allow Aquitard (D3) C-Neutral Test (D5) ised Ant Mounds (D6) (LRR A) ost-Heave Hummocks (D7)

Project/Site: Silicon Mountain Wetlar	nd Mitigation Site	City/	County: Silverboy	V Sampling Date: 6/14/2022
Applicant/Owner: MDT and Butte-Silve				State: Montana Sampling Point: DP09-up
nvestigator(s): S Weyant, W Fouts		Sect	ion, Township, Rai	
andform (hillslope, terrace, etc.); <u>Undu</u> Subregion (LRR); <u>LRR</u> E	Lat	Loca	al relief (concave, o 45.999122	convex, none): convex Slope (%): 50 Long: -112.660968 Datum; NAD 83
				mplex, 0 NWI classification, Not mapped
	lydrology signific	antly distu ly problem	rbed? Are " natic? (If ne	☐ (If no, explain in Remarks.) Normal Circumstances" present? Yes ☑ No ☐ eded, explain any answers in Remarks.) ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes No Yes No Yes No Yes		Is the Sampled within a Wetlar	
Upland sample point located north		cell 1 on	a low terrace.	
VEGETATION - Use scientific Tree Stratum Plot size (30 Foot F	Absolute Do		Indicator Status	Dominance Test worksheet Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
				Total Number of Dominant Species Across All Strata: Percent of Dominant Species 33 3 0 (ACD)
Sapling/Shrub Stratum Plot size	15 Foot Radius)			That Are OBL, FACW, or FAC:
Artemisia cana	1	/ F	ACU	Prevalence Index worksheet Total % Cover of: Multiply by:
Ericameria nauseosa Herbaceous Stratum Plot size	1 [s	<u>/</u> U	PL	OBL species 0 X 1 0 FACW species 2 X 2 4 FAC species 40 X 3 120 FACU species 11 X 4 44 UPL species 6 X 5 30
		☐ UF	DI	
Descurainia sophia Elymus canadensis	30	FA		Column Totals 59 (A) 198 (B)
Juncus balticus	2		CW	Prevalence Index = B/A = 3.35593
Lepidium perfoliatum	10	FA	CU	Hydrophytic Vegetation Indicators
Leymus cinereus	10] FA	ı.C	1 - Rapid Test for Hydrophytic Vegetation
Thlaspi arvense	3	UF	PL	2 - Dominance Test is >50%
				 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet. 5 - Wetland Non-Vascular Plants
Woody Vine Stratum Plot size	(30 Foot Radius)			Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 44				Hydrophytic Vegetation Present? Yes □ NO ✓
Remarks: Sample point was dominated by up	oland vegetation.			
US Army Corps of Engineers				Western Mountains, Valleys, and Coasts - Version 2.0
Co. ming Corpo of Engineers				Stori Woulden, Valleyo, and Oddio - Voidioi 2.0

SOIL								Sampling Point: DP09-up
Profile Des	cription: (Describe	to the de	oth needed to docu	ment the indicator	or confirm	the absence of ir	
Depth		Matrix	2,000	Redo	x Features			
(inches)	Color	(moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-01	10YR	2/2	100			CI	lay Loam	
01-08	10YR	2/2	100			Sand	y Clay Loam	
08-16	10YR	4/3	100			Sand	y Clay Loam	
				-				
-	_			×				
15	60 000,476			- North Control of				MORALIST MALLIN
				=Reduced Matrix, C: LRRs, unless othe		ed Sand Gra		n: PL=Pore Lining, M=Matrix. or Problematic Hydric Soils ³ :
Histoso		. Inhbit	able to at	Sandy Redox (The state of the s		2 cm Mu	
	pipedon (A	2)		Stripped Matrix				ent Material (TF2)
	istic (A3)	2)			Mineral (F1) (excep	MI PA 1		allow Dark Surface (TF12)
	en Sulfide ((44)		Loamy Gleyed		CINICINA I)		xplain in Remarks)
	d Below Da		e (A11)	Depleted Matri			out to	Apidin in Nemarksy
	ark Surface		20 (1111)	Redox Dark Su			3Indicators of	hydrophytic vegetation and
	Mucky Mine			Depleted Dark				ydrology must be present.
	Gleyed Mat			Redox Depress				turbed or problematic.
Restrictive					none (i o)		dilidaa did	idibod of problematic.
Type:	and and							
Depth (in	ahaal:						Undria Cail Drag	sent? Yes No _
Remarks:	ciies).						riyunc son Fres	seitti les No
IYDROLO	GY							
Wetland Hy	The state of the s			0.700 Curt. /*			-0.00	28.34 F. 34 F. 34
Primary Indi	cators (min	imum of	one require	d; check all that app	y)		Secondary	Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leaves (B9) (e	except	Water	-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ater Table ((A2)		MLRA	1, 2, 4A, and 4B)			, and 4B)
Saturati	on (A3)			Salt Crust	(B11)		Draina	ige Patterns (B10)
Water N	Marks (B1)			Aquatic In	vertebrates (B13)		Dry-Se	eason Water Table (C2)
Sedime	nt Deposits	(B2)		Hydrogen	Sulfide Odor (C1)		Satura	tion Visible on Aerial Imagery (C9
	posits (B3)			Oxidized I	Rhizospheres along	Living Root		orphic Position (D2)
	at or Crust				of Reduced Iron (C		The second secon	w Aquitard (D3)
	posits (B5)				n Reduction in Tille	,		leutral Test (D5)
	Soil Crack				Stressed Plants (D			d Ant Mounds (D6) (LRR A)
	ion Visible		Imagery (F		plain in Remarks)	, K)=		Heave Hummocks (D7)
	y Vegetate				Sidili III (Cilia/Ko)			ricave rialimiosus (E1)
Field Obser		u concav	o ounded	(60)		-1		
	V V V V V V V V V V V V V V V V V V V		/	No. I Death to	4.44			
Surface Wa			es	No Depth (in		=		
Water Table			es	No Depth (in		7	073-117 3 3 4	
Saturation P (includes ca	pillary fring	e)	es	No Depth (in		-	nd Hydrology Pre	esent? Yes No V
Describe Re	corded Da	ta (strean	n gauge, m	onitoring well, aerial	photos, previous ins	spections), if	available:	
Remarks:								
No evidenc	e of wetla	nd hydro	ology obs	erved.				
		,	0,					

roject/Site: Silicon Mountain Wetland Mitigation Site pplicant/Owner MDT and Butte-Silver Bow County		City/County: Silverbo	State: Montana Sampling Point: DP09-wet
vestigator(s): S Weyant, W Fouts		Andrew Annaber An	C OA TON DOW
		Section, Township, Ra	ange
andform (hillslope, terrace, etc.): Terrace	-0-	Local relief (concave,	convex, none): Flat Slope (%):
	Lat:		9 Long:
oil Map Unit Name: Riverrun, occasionally flooded-Man	nixiee,	requently flooded co	omplex, U NWI classification PEIVI
re climatic / hydrologic conditions on the site typical for this tire Vegetation, Soil, or Hydrology sign re Vegetation, Soil, or Hydrology nati	ificantly urally pr	disturbed? Are oblematic? (If ne	"Normal Circumstances" present? Yes No eeded, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes No		Is the Sampled within a Wetla	
Remarks:			
PEM depressional wetland point located north of exca		vetland cell 1 on a lov	w terrace, approximately 150' from the open water.
VEGETATION - Use scientific names of plants Absolute	Domiar	nt Indicator	Dominance Test worksheet
Tree Stratum Plot size (30 Foot Radius) % Cover:	Specie		Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
			Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)
- I lot 5/25 (10			Prevalence Index worksheet
			Total % Cover of: Multiply by:
			OBL species 12 X 1 12
			FACW species 45 X 2 90 FAC species 37 X 3 111
			FACU species 0 X4 0
Herbaceous Stratum Plot size (5 Foot Radius)			UPL species 0 X 5 0
Carex nebrascensis 1		OBL	Column Totals 94 (A) 213 (E
Carex pellita 10		OBL	
Cirsium arvense 1		FAC	Prevalence Index = B/A = 2.26596
Juncus balticus 45	✓	FACW	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Poa pratensis 35	✓	FAC	✓ 2 - Dominance Test is >50%
Potentilla anserina 1		OBL	✓ 3 - Prevalence Index is <= 3.0
Trifolium repens 1		FAC	4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
			5 - Wetland Non-Vascular Plants Problematic Hydrophytic Vegetation (Expla
Woody Vine Stratum Plot size (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 6			Hydrophytic Vegetation Present? Ves ✓ NO
temarks: Evidence of hydrophytic vegetation included a positive equal to 3.0.	rapid	test, a positive domir	nance test, and a prevalence index less than or

									Sampling Point: DP09
Profile Des	cription: (De	scribe to th	e depth	needed	to docum	ent the indi	cator or co	onfirm the a	bsence of indicators.)
Depth		Matrix				Features		3	
(inches)	Color (m		6	Color (moist)	% T	ype¹ Lo		xture Remarks
0-04			00					Silty Clay	
04-14	10YR 4	4/3	95 7.	5YR	4/6	5		Silty C	Clay
14-18	10YR 2	2/1 1	00					Silty Clay	/ Loam
-									
	oncentration,								² Location: PL=Pore Lining, M=Matrix
	Indicators:	(Applicable	to all Li			Section services.			Indicators for Problematic Hydric Soils
Histoso			-		y Redox (S				2 cm Muck (A10)
	pipedon (A2)		8		ed Matrix (The second secon		2050	Red Parent Material (TF2)
	listic (A3)		-			ineral (F1) (e	except MLF	RA 1)	Very Shallow Dark Surface (TF12)
	en Sulfide (A4		70 F		y Gleyed M			5	✓ Other (Explain in Remarks)
	d Below Dark		"		eted Matrix				31-0-1
	ark Surface (A			_	x Dark Surf	The second second			Indicators of hydrophytic vegetation and
	Mucky Minera				eted Dark S				wetland hydrology must be present.
	Gleyed Matrix Layer (if pres	0	- 5	Redo	x Depression	ons (F8)		-	unless disturbed or problematic.
	Layer (II pres	senty.							
Type:	347.40			_				140	
Depth (in Remarks:	icnes):			_				нус	dric Soil Present? Yes 🔽 No_
YDROLO									
Votland Liv	1.75 %	onto-sa/							
	drology India		quired:	check al	I that anniv				Secondary Indicators /2 or more requir
rimary Indi	drology Indicators (minim		quired;		Contract of the Contract of th	or property and	PO) /oveon		Secondary Indicators (2 or more requir
rimary Indi	drology Indicators (minimators) Water (A1)	um of one re	quired;		Water-Stain	ed Leaves (A 7 A 70 - A A 400	ıt.	Water-Stained Leaves (B9) (MLRA
rimary Indi	drology Indicators (minimal Water (A1) ater Table (A2	um of one re	quired;		Water-Stain	ed Leaves (, 2, 4A, and	A 7 A 70 - A A 400	ıt.	Water-Stained Leaves (B9) (MLRA 4A, and 4B)
rimary Indi Surface High Wa Saturati	rdrology Indic cators (minim Water (A1) ater Table (A2 ion (A3)	um of one re	quired;		Water-Stain MLRA 1 Salt Crust (I	ed Leaves (, 2, 4A, and B11)	4B))t.	. Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10)
rimary Indi Surface High Wa Saturati Water M	rdrology Indic cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1)	um of one re	quired;		Water-Stain MLRA 1 Salt Crust (I Aquatic Inve	ed Leaves (, 2, 4A, and B11) ertebrates (B	4B) 313)	ot .	 Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2)
rimary Indi Surface High Wa Saturati Water M Sedime	rdrology Indic cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1) nt Deposits (B	um of one re	quired;		Water-Stain MLRA 1 Salt Crust (I Aquatic Inve	ed Leaves (, 2, 4A, and B11) ertebrates (B sulfide Odor	4B) 313) (C1)		Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imager
rimary Indi Surface High Wa Saturati Water M Sedime Drift De	rdrology India cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1) nt Deposits (B posits (B3)	um of one re	quired;		Water-Stain MLRA 1 Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh	ed Leaves (, 2, 4A, and B11) ertebrates (B sulfide Odor (nizospheres	4B) 313) (C1) along Living		Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Pattems (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imager) Geomorphic Position (D2)
rimary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	rdrology India cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B-	um of one re	quired;		Water-Stain MLRA 1 Salt Crust (I Aquatic Inve Hydrogen S Oxidized Rh Presence of	ed Leaves (, 2, 4A, and B11) ertebrates (B ulfide Odor (nizospheres f Reduced In	4B) 313) (C1) along Living on (C4)	g Roots (C3	Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imager) □ Geomorphic Position (D2) □ Shallow Aquitard (D3)
rimary Indi Surface High Wa Saturati Water M Sedime Drift De Algal Ma	rdrology Indic cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B4)	um of one re 2) 32)	quired;		Water-Stain MLRA 1. Salt Crust (I Aquatic Inve Hydrogen S Oxidized Ri Presence of Recent Iron	ed Leaves (, 2, 4A, and B11) ertebrates (B sulfide Odor o nizospheres f Reduced In Reduction in	4B) 313) (C1) along Livingon (C4) n Tilled Soil	g Roots (C3	Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Patterns (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imager) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5)
Primary Indi Surface High Wa Saturati Water Mater	rdrology Indic cators (minim Water (A1) ater Table (A2 ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B- posits (B5) Soil Cracks (um of one re 2) 32) 4) B6)			Water-Stain MLRA 1. Salt Crust (I Aquatic Inve Hydrogen S Dxidized Ri Presence of Recent Iron Stunted or S	ed Leaves (, 2, 4A, and B11) ertebrates (B sulfide Odor o nizospheres f Reduced In Reduction in Stressed Pla	4B) 313) (C1) along Living on (C4) n Tilled Soil nts (D1) (LI	g Roots (C3	Water-Stained Leaves (B9) (MLRA 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imager) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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Primary Indi Surface High Wa Saturati Sedime Drift De Algal Ma Iron De Surface Inundati Sparsel Field Obser Surface Wal Water Table Saturation Princludes ca Describe Re	rdrology Indicators (minimal Water (A1) ater Table (A2) on (A3) Marks (B1) on Deposits (B3) at or Crust (B4) at or Crust (B4) as Soil Cracks (ion Visible on y Vegetated Crations: ter Present? Present? pillary fringe) products of Cracks (ion C	um of one re 2) 32) 4) B6) Aerial Image Concave Surf Yes _ Yes _ Yes _ (stream gaug	ery (B7) face (B8	toring w	Water-Stain MLRA 1. Salt Crust (I Aquatic Inve Hydrogen S Oxidized Ri Presence of Recent Iron Stunted or S Other (Explain Depth (inch Depth (inch ell, aerial ph	ed Leaves (, 2, 4A, and B11) ertebrates (B sulfide Odor o nizospheres f Reduced In Reduction in Stressed Pla ain in Reman	4B) 313) (C1) along Living on (C4) n Tilled Soil (C1) rks) 6 5 ous inspection	g Roots (C3 ls (C6) RR A) Wetland Hy	Water-Stained Leaves (B9) (MLRA 4A, and 4B) □ Drainage Pattems (B10) □ Dry-Season Water Table (C2) □ Saturation Visible on Aerial Imager) □ Geomorphic Position (D2) □ Shallow Aquitard (D3) □ FAC-Neutral Test (D5) □ Raised Ant Mounds (D6) (LRR A) □ Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain Wetland Mitigation Site	City/C	county: Silverbow	Sampling Date: 6/14/2022
Applicant/Owner MDT and Butte-Silver Bow County	- 7		State: Montana Sampling Point: DP10-up
nvestigator(s): S Weyant, W Fouts	Section	on, Township, Range	C OA T ON D OW
_andform (hillslope, terrace, etc.): Terrace Subregion (LRR): LRR E La	Loca	relief (concave, cor 45.995542	nvex, none): flat Slope (%): 3 .ong: -112.661154 Datum: NAD 83
Soil Map Unit Name: Riverrun, occasionally flooded-Mannix	lee, freque	ently flooded comp	olex, 0 t NWI classification, PEM
Are climatic / hydrologic conditions on the site typical for this time Are Vegetation, Soil, or Hydrology signific Are Vegetation, Soil, or Hydrology natura SUMMARY OF FINDINGS - Attach site map show	cantly distur	bed? Are "No atic? (If need	ormal Circumstances" present? Yes No led, explain any answers in Remarks.)
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: No Section Present? Yes No Section Present? Yes No Section Present?		Is the Sampled Awithin a Wetland?	
Upland data point located 5 feet in elevation above the a	active San	d Creek channel.	
VEGETATION - Use scientific names of plants Absolute Do	omiant Ir	ndicator	
Tues Chushama Districts (OO Foot Doding)		status	Dominance Test worksheet Number of Dominant Species
			that are OBL, FACW or FAC:
			Total Number of Dominant Species Across All Strata: 1 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)
<u>Outpining/Online Stratem</u> 1 lot 9/20 (15 1 Oot Nadids)			Prevalence Index worksheet
			Total % Cover of: Multiply by:
			OBL species 0 X 1 0 FACW species 0 X 2 0
			FAC species 15 X3 45
			FACU species 0 X 4 0
Herbaceous Stratum Plot size (5 Foot Radius)			UPL species 63 X 5 315
	✓ UPI		Column Totals 78 (A) 360 (B)
Descurainia sophia 12	UPI		Prevalence Index = B/A = 4.61538
Euphorbia esula 1 Leymus cinereus 15	UPI		Hydrophytic Vegetation Indicators
Thlaspi arvense 10	UPI		1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
			3 - Prevalence Index is <= 3.0
			 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
			5 - Wetland Non-Vascular Plants
			Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Perc Crawnd 22			Hydrophytic Vegetation Present? Ves □ NO ✓
Percent Bare Ground 22 Remarks:			- room:
Sample point was dominated by upland vegetation.			
US Army Corps of Engineers			Western Mountains, Valleys, and Coasts - Version 2.0
- ,			, , , , , ,

OIL											Samp	ing Point: DP10-u
Profile Des	cription: (Describe	to the de	pth neede	d to docu	ment the i	ndicato	r or conf	irm the abse	nce of inc		
Depth		Matrix	~.			x Feature:		1 3	- 20.			
(inches)		(moist)	%	Color	(moist)	%	Type	Loc ²			- 1/E	Remarks
0-14	10YR	4/3	100						Sandy Loa	m		
14-16+	10YR	5/3	90	10YR	2/1	3	D	М	Silt Loam			
14-16+				10YR	4/6	7	С	М	Silt Loam			
				-								
	-			-			-					
-	-		-	-			_					
Type: C=C	oncentratio	n D=Der	oletion RA	/=Reduce	d Matrix C	S=Covered	d or Coa	ted Sand	Grains	2) ocation	PI =Pore	Lining, M=Matrix.
Hydric Soil								ito band				atic Hydric Soils ³ :
Histosol					dy Redox (2 cm Muc		ada sada albad
	pipedon (A	2)			ped Matrix					Red Pare		(TF2)
	istic (A3)	- 1			my Mucky) (exce	pt MLRA				Surface (TF12)
	en Sulfide (Loa	my Gleyed	Matrix (F2				Other (Ex	plain in Re	marks)
	d Below Da		e (A11)		leted Matri							
	ark Surface				ox Dark Su							c vegetation and
	Aucky Mine				leted Dark		7)				-	ust be present,
	Sleyed Mat			Red	ox Depress	sions (F8)			, L	ınless dist	urbed or p	roblematic.
Restrictive	Layer (if p	resent):										
Type:	SEZ-Ao								140,400	S. a Book	in it.	S
Depth (in	cnes):								Hydric	Soil Pres	ent? Ye	s No
YDROLO	77.0											
Wetland Hy	The state of the s			a Chian	.000					occorran	(all and a factor	A 60 1500
Primary Indi			ne require	ed, check a			- (00)				Tall of Profit	(2 or more required
	Water (A1)			_		ined Leave			-			aves (B9) (MLRA 1
	ater Table (A2)				1, 2, 4A, a	na 4B)				and 4B)	(040)
Saturati					Salt Crust		(D40)				ge Pattems	
	larks (B1)	(DO)		_		vertebrate						r Table (C2)
	nt Deposits posits (B3)	(B2)		-		Sulfide Od Rhizosphe			Poots (C2)			on Aerial Imagery
	at or Crust	(DA)				of Reduce			(60) 81001	and the second	rphic Posi Aquitard	
	osits (B5)					n Reducti			(CE)		eutral Test	
	Soil Crack			_		r Stressed						ds (D6) (LRR A)
	on Visible	and the second second	lmagani (F	37)		plain in Re		D I) ILINI	(A)	- Table 1970		mocks (D7)
	y Vegetate		A	4.0.	Oniei (EX	piani in Ne	iliai ks)		_	Tioseri	cave mun	IIIIOCKS (D7)
ield Obser		a conoav	Cumaco	(50)								
Surface Wat	V V V 100-4	2 V	es 🗌	No 🗸	Depth (in	chael:						
Vater Table			es 🗌		Depth (in			-				
Saturation P			es 🗌		Depth (in			- W	etland Hydro	ology Pres	ent? Ve	s No
includes ca	pillary fringe	e)					evious ir	3	s), if available		ciii.	
- 4-51100 110		- (Susua	9-090,11	.s.morning 1	. on world	F.1.0.00, PI			-/ 4 - 4 6 6			
Remarks:	_											
kemarks: No evidence	e of wetla	nd hvdro	logy obs	erved								
		_ /.y ui o	- 5, 550									

Project/Site: Silicon Mountain Wetlar		Chy/County: _	ilverbow Sampling Date: 6/14/2022
Applicant/Owner MDT and Butte-Silve	er Bow County		State: Montana Sampling Point: DP10-wet
vestigator(s): S Weyant, W Fouts		Section, Town	ship, Range: S 24 T 3N R 9W
andform (hillslope, terrace, etc.): <u>Undu</u> ubregion (LRR): <u>LRR</u> E	Lat:	45.	995555 Long: -112.661055 Datum: NAD 83
oil Map Unit Name: Riverrun, ocassion	onally flooded-Mannixle	ee, frequently floo	ded complex, 0 t NWI classification PSS
re Vegetation, Soil, or h	Hydrology significative significative significative significations and significative significations are significative significations.	antly disturbed? y problematic?	No ☐ (If no, explain in Remarks.) Are "Normal Circumstances" present? Yes ☑ No ☐ (If needed, explain any answers in Remarks.) Doint locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes V No Yes No No		ampled Area a Wetland? Yes <u>✓</u> No
Remarks: PSS riverine wetland data point loc	ated approximately on	e foot from the ac	tive channel of Sand Creek.
VEGETATION - Use scientific	Absolute Do	miant Indicator	Daminana Tast wallahast
<u>Tree Stratum</u> Plot size (30 Foot F		ecies? Status	Dominance Test worksheet
			Number of Dominant Species that are OBL, FACW or FAC: 5 (A)
			Total Number of Dominant Species Across All Strata: 7 (B)
Sapling/Shrub Stratum Plot size	15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4 % (A/B)
Salix lutea	35	⊘ OBL	Prevalence Index worksheet
Cally lutea	33	OBL	Total % Cover of: Multiply by:
			OBL species 62 X1 62
			FACW species 12 X 2 24 54 54 55 55 55 55 55 55 55 55 55 55 55
			FACU species 10 X4 40
Herbaceous Stratum Plot size	(5 Foot Radius)		UPL species 25 X 5 125
Alopecurus pratensis	1	FAC	Column Totals 120 (A) 284 (B
Bromus inermis	20	Z UPL	
Carex pellita	15	OBL	Prevalence Index = B/A = 2.36667
Carex utriculata	10	OBL	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Centaurea stoebe	5	UPL	
Juncus balticus		FACW	✓ 2 - Dominance Test is >50%
Lepidium densiflorum		FACU	✓ 3 - Prevalence Index is <= 3.0
Mentha arvensis	2	FACW	4 - Morphological Adaptations (Provide
Poa pratensis		FAC	supporting data in remarks or on separate sheet.
Scirpus microcarpus	1 [OBL	5 - Wetland Non-Vascular Plants
Veronica americana	1	OBL	Problematic Hydrophytic Vegetation (Explai
Woody Vine Stratum Plot size	(30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 27			Hydrophytic Vegetation Present? Ves ✓ NO
Remarks:			*** *
	included a positive do	ominance test and	a prevalence index less than or equal to 3.0.
US Army Corps of Engineers			Wastern Marrietine Welling 10 1 1 1 2
US ATTIV COIDS OF ETIGITIEETS			Western Mountains, Valleys, and Coasts - Version 2.

Depth	4	Matrix	2000	oth needed to do	edox Featur				
inches)	Color (moist)	%	Color (moist)	%	Type	Loc2	Texture	Remarks
-01	10YR	3/3	100				L	oamy Sand	Roots present
1-16	10YR	4/2	100				C	oarse sand	Fine gravel throughout
				=Reduced Matrix			ed Sand G		cation: PL=Pore Lining, M=Matrix.
Histosol Histic Ep Black His Hydrogei Depleted Thick Da	(A1) pipedon (A2 stic (A3) n Sulfide (A I Below Da trk Surface	2) A4) irk Surfac (A12)		Loamy Gle	ox (S5) atrix (S6) ky Mineral (F yed Matrix (F	-1) (excep 2)	MLRA 1)	☐ 2 cm ☐ Red ☐ Veny ☑ Othe	ors for Problematic Hydric Soils ³ : In Muck (A10) I Parent Material (TF2) Iy Shallow Dark Surface (TF12) Ier (Explain in Remarks) In Sof hydrophytic vegetation and
	lucky Mine leyed Mati				ark Surface (ressions (F8				nd hydrology must be present, is disturbed or problematic.
estrictive L								1	
Туре:	10000								
12.4	174.							Hydric Soil	Present? Yes V No
oil in the lo	wer horiz							that appears	to be developing hydric soil lere can be considered hydric.
emarks: bil in the lo dicators. V	ower horiz egetation	n at this	point is h					that appears	
emarks: oil in the lo idicators. V	ower horiz /egetation GY	n at this	point is h		wetland hyd			that appears so the soils h	
Cemarks: oil in the lo idicators. V COROLOG Cetland Hyd Commany Indicators Surface N Saturation Water Ma Sedimen Drift Dep Algal Ma V Iron Dep Surface S Inundation Sparsely	GY Irology Industry (A1) ter Table (A1) ter Table (A1) the Table (A2) to (A3) arks (B1) the Deposits to Crust osits (B3) the Crust osits (B5) Soil Cracks on Visible of	dicators: imum of c (B2) (B2) (B4) s (B6) on Aerial	ne require	d; check all that: Water ML Salt C Aquati Hydro Oxidiz Presei Recen Stunte	wetland hyd	ves (B9) (e and 4B) es (B13) odor (C1) eres along ed Iron (C4 tion in Tille d Plants (D	xcept Living Root t) d Soils (Ce	that appears so the soils h	ere can be considered hydric.
emarks: oil in the lo dicators. V **DROLOG** **PROLOG** **PROLO	GY Irology Invators (minimum of the Table (m	dicators: imum of c (B2) (B4) (B4) (B6) (Concave Y Y Y Y (B2)	magery (Ee Surface	d; check all that a Water ML Salt C Aquati Hydroid Presei Recen Stunte (17) Other (188)	apply) Stained Lear RA 1, 2, 4A, rust (B11) c Invertebrat gen Sulfide C ed Rhizosphi nce of Reduct t Iron Reduct d or Stressed (Explain in R	ves (B9) (e and 4B) es (B13) odor (C1) eres along red Iron (C4 tion in Tille d Plants (D emarks)	xcept Living Roo 4) d Soils (Co	that appears so the soils h	ndary Indicators (2 or more required) /ater-Stained Leaves (B9) (MLRA 1, 2 4A, and 4B) rainage Pattems (B10) ry-Season Water Table (C2) aturation Visible on Aerial Imagery (Caleomorphic Position (D2) hallow Aquitard (D3) AC-Neutral Test (D5) aised Ant Mounds (D6) (LRR A)

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Silico	on Mountain	Assessment Date/Time	6/13/2022
Person(s) conduct	ing the assessment: <u>F</u>	R Jones, S Weyant, W Fouts, M Hickey	
Weather: 50 degre	ees, breezy, overcast	Location: 5 miles west of Butte	
MDT District: Butte	е	Milepost: MP 119 on I-15	
Legal Description:	T 3N R 9E Secti	on(s) 24	
Initial Evaluation D	ate <u>: 6/23/2015</u> \	Monitoring Year: <u>8</u> #Visits in Year: <u>1</u>	
Size of Evaluation	Area: 50.1 (acres)	
Land use surround		al, and parkland (bikeway)	
IVIIX OI COITIITIEI CIA	ii (raiiioau), resideriii	ai, and parkiand (bikeway)	
		HYDROLOGY	
Surface Water Source:	Sand Creek and a	well defined spring.	
		: <u>1 (ft)</u> Range of Depths: <u>0.1-4</u> (ft)	
Percent of assessment			
		undary: 0.5 (ft)	
	•	the soils saturated within 12 inches of surface:	es es
			
<u>-</u>	,	 drift lines, erosion, stained vegetation, etc: on site includes high water table, saturation to the s 	oil
		soil cracks, a positive FAC-Neutral test, and geom	
Groundwater Moni	itoring Wells		
Record depth of wa	ter surface below gro	ound surface, in feet.	
Well ID	Water Surface Depth	(ft)	
45595911239420	2.87		
45595911239420	3.22		
45595911239420			
Additional Activities Checklist		a said abata wasab	
_	ion-open water boundary on ace water during each site v	i aerial photograph. isit and look for evidence of past surface water	
elevations (drift lines, erosion	_	ion and foor for evidence of past sufface water	
•	oundwater monitoring well lo	cations, if present.	
Hydrology Notes:	-		

Two groundwater monitoring wells remained on site after construction and are now monitored by USGS. Open water was present >90% of wetland Cells 1 and 5. Shallow ponded water was present across ~30% of Cell 4, ~15% of wetland 13, and lower areas of cells 2 and 3 were inundated with 3-4" of water. Flowing water was present in the entire length of the Sand Creek channel.

Cell 6 lost wetland area, presumably from a lack of hydrology. It appears the water source for cell 6 is a spring-fed wetland upgradient and directly north of cell 6 (outside project area) and little of that water was ending up in cell 6 in 2022, leaving the cell's hydrology dependent on overland flow.

VEGETATION COMMUNITIES

Site _Silicon Mountain

(Cover Class Codes 0 = < 1%, 1 = 1.5%, 2 = 6.10%, 3 = 11.20%, 4 = 21.50%, 5 = >50%)

Community # 2 Community Type: Descurainia sophia / Thlaspi arvense Acres: 0.45

Species	Cover class	Species	Cover class
Agropyron cristatum	1	Artemisia tridentata	1
Bassia scoparia	2	Bromus tectorum	2
Camelina microcarpa	2	Descurainia sophia	2
Elymus trachycaulus	1	Lepidium perfoliatum	2
Leymus cinereus	1	Pascopyrum smithii	1
Thlaspi arvense	3		

Comments:

Upland community composed of mostly early successional, non-native species commonly found on disturbed landscapes. In 2021 this community type was mapped along the Butte/Anaconda bike path. Minimal change in species richness and cover were observed here between 2020 and 2021 and 2022. Thlaspi arvense remains the dominant species in this community.

Community # 3 Community Type: Bromus inermis / Poa pratensis Acres: 4.93

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agrostis stolonifera	1
Alopecurus arundinaceus	0	Artemisia tridentata	1
Astragalus cicer	1	Bare Ground	1
Bromus inermis	4	Centaurea stoebe	0
Cirsium arvense	0	Deschampsia caespitosa	0
Elymus repens	3	Elymus trachycaulus	2
Juncus balticus	0	Koeleria macrantha	1
Leymus cinereus	2	Melilotus officinalis	1
Phalaris arundinacea	0	Poa palustris	1
Poa pratensis	3	Poa secunda	1
Potentilla anserina	0	Schedonorus pratensis	1
Solidago gigantea	0	Sonchus arvensis	1
Thlaspi arvense	1	Trifolium hybridum	1

Comments:

Upland community. In 2021, acreage decreased by almost 1 acre and in 2022, this community decreased by just over 2.5 acres. Two large areas adjacent to cell 1 had transitioned from upland type (UT) 3 to wetland type (WT) 9 between 2021 and 2022. This transiton was a result of decreased coverage from Bromus inermis and Poa pratensis and increased coverage of Juncus balticus, Elymus repens, and Salix spp.

Community # 4 Community Type: Carex spp. / Juncus balticus Acres: 11.66

Species	Cover class	Species	Cover class
Calamagrostis canadensis	1	Carex aquatilis	2
Carex nebrascensis	3	Carex praticola	1
Carex utriculata	2	Cirsium arvense	0
Deschampsia caespitosa	2	Juncus balticus	4
Mentha arvensis	1	Poa palustris	1
Poa pratensis	2	Potentilla anserina	2
Typha latifolia	1		

Comments:

PEM wetland community. In 2021, WT4 and corresponding wetland boundary expanded by 0.4 acres, primarily along the northwestern project boundary, west and adjacent to Sand Creek. This expansion continued in 2022 when the wetland boundary and WT 4 expanded by 0.3 acres.

Community # 5 Community Type: Elymus repens / Bromus inermis Acres: 1.29

Species	Cover class	Species	Cover class
Astragalus cicer	1	Bromus inermis	3
Bromus tectorum	1	Cirsium arvense	0
Descurainia sophia	1	Elymus repens	4
Elymus trachycaulus	1	Juncus balticus	3
Leymus cinereus	1	Pascopyrum smithii	2
Poa pratensis	1	Potentilla anserina	1
Salix exigua	1		

Comments:

Upland community south of the road alignment and overpass. This community decreased by 0.35 acres in 2021 due to shift in species dominance from Bromus inermis to Juncus balticus and Salix spp. No additional changes were observed in this UT in 2022.

Community # 7 Community Type: Open Water / Aquatic macrophytes Acres: 5.41

Species	Cover class	Species	Cover class
Algae, green	3	Beckmannia syzigachne	1
Eleocharis palustris	1	Juncus balticus	1
Lemna minor	1	Mudflat	1
Open Water	5	Typha latifolia	2

Comments:

Open water areas within created wetland cells 1, 4, 5, preserved wetland cell 13, and the stream channel. In 2022, this area expanded by approxiamtely 0.2 acres. Open water expansion was observed in Cells 1 and 5 and open water decreased in cells 4 and exisiting wetland 13. Inundation was still present in cell 4 and wetland 13, but emergent vegetation had incresed beyond 5% in some areas and these areas were switched to PEM wetlands.

Community # 8 Community Type: Salix exigua / Juncus balticus Acres: 1.17

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Calamagrostis canadensis	1	Carex nebrascensis	2
Carex pellita	2	Carex utriculata	2
Cicuta douglasii	1	Eleocharis palustris	2
llyceria striata	1	Hordeum jubatum	1
ncus balticus	3	Mentha arvensis	1
alix exigua	4	Salix geyeriana	1
alix lasiandra	1	Salix lutea	1
cirpus microcarpus	1		

Comments:

Existing wetland east and west of wetland cell 2, along the restored Sand Creek stream channel, and surrounding cell 5. In 2022, WT8 expanded in a few different areas, resulting in an overall increase of 0.24 acres.

Community # 9 Community Type: Juncus balticus / Elymus repens Acres: 3.02

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Bromus inermis	2
Cirsium arvense	0	Elymus repens	3
Elymus trachycaulus	1	Epilobium ciliatum	0
Geum macrophyllum	0	Hordeum jubatum	1
Juncus balticus	3	Leymus cinereus	1
Poa palustris	1	Poa pratensis	3
Potentilla anserina	1	Rumex crispus	0
Salix exigua	1	Solidago gigantea	1
Symphyotrichum lanceolatum	1	Thlaspi arvense	1

Comments:

This wetland community has been expanding over the last few years. Between 2020 and 2021, it expanded by nearly 1 acre, and between 2021 and 2022 it expanded by almost 2 acres. In 2021 and 2022, this WT replaced upland UT 3 in several different areas.

Community # 10 Community Type: Artemisia tridentata / Poa spp. Acres: 11.62

Species	Cover class	Species	Cover class
Artemisia tridentata	3	Astragalus agrestis	1
Bromus inermis	1	Centaurea stoebe	1
Ericameria nauseosa	1	Hesperostipa comata	1
Juniperus scopulorum	2	Koeleria macrantha	1
Leymus cinereus	1	Pascopyrum smithii	3
Poa pratensis	2	Poa secunda	3
Pseudoroegneria spicata	0	Symphyotrichum falcatum	2

Comments:

Upland shrubland. In 2022, Centaurea stoebe was added to the community due to new infestations in the western portion of the project area that contains cell 6.

Community # 11 Community Type: Typha latifolia / Acres: 1.32

Species	Cover class	Species	Cover class
Alisma plantago-aquatica	0	Alopecurus aequalis	0
Beckmannia syzigachne	1	Calamagrostis canadensis	1
Carex nebrascensis	1	Cyrtorhyncha cymbalaria	1
Deschampsia caespitosa	1	Eleocharis palustris	2
Glyceria grandis	1	Juncus balticus	1
Juncus bufonius	1	Juncus effusus	1
Mentha arvensis	1	Mud Flats	1
Open Water	3	Poa palustris	0
Potentilla anserina	1	Ranunculus sceleratus	0
Salix lasiandra	0	Salix lutea	1
Schoenoplectus tabernaemon	t 2	Scirpus microcarpus	1
Typha latifolia	5		

Comments:

Typha latifolia expanded in several ares of the site from 2018-2020. In 2021, CT 11 decreased by 0.12-acre in wetland cell 4, and was replaced by wetland CT 14. The acrage of this CT remained consistent from 2021 in 2022.

Community #	13	Community Type:	Leymus cinereus / Elymus trachycaulus	Acres:	6.12

Species	Cover class	Species	Cover class
Astragalus cicer	1	Bare Ground	1
Bromus inermis	1	Camelina microcarpa	0
Cirsium arvense	1	Elymus repens	1
Elymus trachycaulus	3	Epilobium ciliatum	0
Euphorbia esula	0	Festuca ovina	1
lordeum jubatum	1	Juncus balticus	1
epidium draba	0	Leymus cinereus	4
elilotus officinalis	1	Poa palustris	1
oa pratensis	2	Poa secunda	1
otentilla anserina	0	Silene latifolia	0
onchus arvensis	0	Thlaspi arvense	1
rifolium longipes	1		

Comments:

Community dominated by FAC graminoids, located in upland areas around wetland cells 4 and 5. Also located in area delineated as wetland in and around cell 6. Appears to be moving into cell 6 as that cell seems to be lacking or have decreased wetland hydrology which is required to support hydrophytic vegetation.

Community # 14 Community Type: Eleocharis palustris / Deschampsia caespitosa Acres: 0.61

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus aequalis	1
Beckmannia syzigachne	1	Deschampsia caespitosa	3
Eleocharis palustris	3	Epilobium ciliatum	1
Hordeum jubatum	1	Juncus balticus	2
Mentha arvensis	1	Open Water	1
Persicaria amphibia	1	Poa palustris	1
Potentilla anserina	1	Sonchus arvensis	0
Typha latifolia	1		

Comments:

Located along the eastern, southern, and western edges of wetland cell 4.

Community # 15 Community Type: Poa pratensis / Elymus repens	Acres:	0.28
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Astragalus cicer	1
Bare Ground	2	Bromus inermis	2
Elymus repens	3	Elymus trachycaulus	2
Epilobium ciliatum	0	Festuca ovina	1
Hordeum jubatum	0	Leymus cinereus	2
Linum lewisii	1	Poa palustris	1
Poa pratensis	4	Puccinellia nuttalliana	1
Thlaspi arvense	1	Trifolium hybridum	1
Comments:			

Located east of wetland cell 4, on the upland slope above the cell.

Community # 16 Community Type: Juncus balticus / Eleocharis palustris Acres: 1.86

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus aequalis	1
Alopecurus arundinaceus	1	Alopecurus pratensis	1
Bare Ground	1	Beckmannia syzigachne	2
Carex aquatilis	1	Carex nebrascensis	1
Carex pellita	0	Cicuta douglasii	1
Cyrtorhyncha cymbalaria	1	Deschampsia caespitosa	2
Eleocharis palustris	3	Elymus repens	0
Epilobium ciliatum	1	Glyceria grandis	1
Glyceria striata	1	Hordeum jubatum	1
Juncus balticus	4	Juncus balticus	0
Juncus bufonius	1	Juncus effusus	1
Mentha arvensis	1	Open Water	2
Phalaris arundinacea	1	Plantago major	0
Poa palustris	1	Poa pratensis	0
Potentilla anserina	1	Salix bebbiana	0
Salix exigua	0	Salix lasiandra	1
Sonchus arvensis	0	Symphyotrichum ciliatum	1
Trifolium longipes	1	Typha latifolia	1

Comments:

Located in wetland cells 2 and 3.

Community # 17 Community Type:	Salix spp. /	Acres:	<u>0.45</u>
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Species	Cover class	Species	Cover class
Alnus incana	1	Carex pellita	1
Carex utriculata	1	Juncus balticus	1
Salix bebbiana	2	Salix boothii	2
Salix exigua	4	Salix geyeriana	2
Salix lutea	2	Veronica americana	1
Comments:			

New plant community added in 2019. From 2020-2022, development of planted/volunteer willows and alder on the edges of wetland cells 1 and 3 has continued.

Total Vegetation Community Acreage

50.19

VEGETATION TRANSECTS

Silicon Mountain		Da	te:	6/13/2022	
Transect Number: 1		Compas	s Direction from Sta	rt: <u>322</u>	
Interval Data: Ending Station	15	Community Type:	Leymus cinereus / Elymus tr	rachycaulus	
Species		Cover class	Species	Cover class	
Astragalus cicer		1	Bare Ground	2	
Cirsium arvense		1	Elymus repens	1	
Elymus trachycaulus		3	Epilobium ciliatum	0	
Festuca ovina		3	Juncus balticus	1	
Leymus cinereus		4	Poa pratensis	2	
Poa secunda		2	Silene latifolia	0	
Sonchus arvensis		1	Thlaspi arvense	0	
Ending Station	31	Community Type:	Juncus balticus / Eleocharis	palustris	
Species		Cover class	Species	Cover class	
Alopecurus arundinaceus		1	Bare Ground	1	
Cyrtorhyncha cymbalaria		1	Deschampsia caespitosa	2	
Eleocharis palustris		3	Juncus balticus	4	
Juncus bufonius		0	Juncus effusus	1	
Mentha arvensis		1	Poa palustris	1	
Potentilla anserina		1	Sonchus arvensis	1	
Typha latifolia		1			
Ending Station	64	Community Type:	Typha latifolia /		
Species		Cover class	Species	Cover class	
Beckmannia syzigachne		0	Cyrtorhyncha cymbalaria	0	
Deschampsia caespitosa		1	Eleocharis palustris	3	
Glyceria grandis		0	Juncus balticus	2	
Juncus bufonius		1	Juncus effusus	2	
Open Water		1	Poa palustris	1	
Salix lasiandra		0	Scirpus microcarpus	1	
Typha latifolia		4	•		

Ending Station	264	Community Type:	: Juncus balticus / Eleocharis palustris	
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		1	Alopecurus pratensis	1
Bare Ground		2	Beckmannia syzigachne	0
Carex nebrascensis		1	Carex pellita	1
Deschampsia caespitosa		1	Eleocharis palustris	3
Elymus repens		2	Glyceria grandis	1
Hordeum jubatum		1	Juncus balticus	4
Juncus effusus		2	Phalaris arundinacea	1
Plantago major		0	Poa palustris	1
Potentilla anserina		2	Salix bebbiana	0
Salix lasiandra		0	Typha latifolia	1
Ending Station	300	Community Type:	Leymus cinereus / Elymus tra	achycaulus
Species		Cover class	Species	Cover class
			Astragalus cicer	1
Bare Ground		2	Bromus inermis	3
Camelina microcarpa		1	Elymus repens	2
Elymus trachycaulus		2	Euphorbia esula	1
Juncus balticus		1	Lepidium draba	0
Leymus cinereus		4	Poa pratensis	2
Potentilla anserina		0	Thlaspi arvense	1
Trifolium longipes		1		
Ending Station	535	Community Type:	Juncus balticus / Eleocharis p	palustris
Species		Cover class	Species	Cover class
Agrostis stolonifera		1	Alopecurus arundinaceus	2
Bare Ground		2	Carex aquatilis	2
Carex nebrascensis		2	Cicuta douglasii	1
Cyrtorhyncha cymbalaria		1	Deschampsia caespitosa	2
Eleocharis palustris		2	Epilobium ciliatum	0
Glyceria striata		0	Hordeum jubatum	1
Juncus balticus		4	Mentha arvensis	1
Phalaris arundinacea		1	Poa palustris	1
Poa pratensis		1	Potentilla anserina	1
Salix exigua		0	Symphyotrichum ciliatum	1
Typha latifolia		0		

Ending Station 564 Community Type: Bromus inermis / Poa pratensis

Species	Cover class	Species	Cover class
Agrostis stolonifera	2	Alopecurus arundinaceus	1
Bare Ground	1	Bromus inermis	4
Elymus repens	1	Elymus trachycaulus	1
Phalaris arundinacea	0	Poa palustris	1
Poa pratensis	3	Potentilla anserina	1
Sonchus arvensis	1	Trifolium hybridum	2

Transect Notes:

Large increase in surface water from 2021. Inundation depth averaged 2" and ranged 0-12". No change in transect intervals, minimal change in species presence and cover since 2021. Increase in Alopecurus arundinaceus observed across wetland CTs along transect.

Transect Number: 2 Compass Direction from Start: 288						
Interval Data:						
Ending Station	0 Community Type:	Poa pratensis / Elymus repen	S			
Species	Cover class	Species	Cover class			
Agrostis stolonifera	0	Astragalus cicer	2			
Bare Ground	3	Bromus inermis	2			
Elymus repens	2	Elymus trachycaulus	1			
Festuca ovina	1	Hordeum jubatum	1			
Leymus cinereus	1	Linum lewisii	0			
Poa palustris	1	Poa pratensis	3			
Puccinellia nuttalliana	0	Trifolium hybridum	1			
Ending Station 4	² Community Type:	Eleocharis palustris / Deschar	mpsia caespitosa			
Species	Cover class	Species	Cover class			
Agrostis stolonifera	1	Alopecurus aequalis	0			
Beckmannia syzigachne	0	Deschampsia caespitosa	2			
Eleocharis palustris	3	Epilobium ciliatum	0			
Hordeum jubatum	1	Juncus balticus	4			
Mentha arvensis	1	Open Water	0			
Persicaria amphibia	0	Poa palustris	2			
Potentilla anserina	2	Sonchus arvensis	1			
Typha latifolia	0					
Ending Station 20	6 Community Type:	Typha latifolia /				
Species	Cover class	Species	Cover class			
Alopecurus aequalis	1	Beckmannia syzigachne	0			
Calamagrostis canadensis	2	Carex nebrascensis	1			
Deschampsia caespitosa	1	Eleocharis palustris	4			
Juncus balticus	2	Mentha arvensis	1			
Mud Flats	1	Open Water	0			
Potentilla anserina	2	Ranunculus sceleratus	1			
Salix lutea	1	Schoenoplectus tabernaem	1			
Typha latifolia	3					
Ending Station 2°	9 Community Type:	Bromus inermis / Poa pratens	sis			
Species	Cover class	Species	Cover class			
Agrostis stolonifera	2	Bare Ground	2			
Bromus inermis	3	Centaurea stoebe	1			
Cirsium arvense	0	Deschampsia caespitosa	1			
Elymus repens	1	Juncus balticus	1			
Leymus cinereus	1	Poa pratensis	2			
Poa secunda	1	Potentilla anserina	0			
Sonchus arvensis	1	Thlaspi arvense	1			

Transect Notes:

Even less open water than in 2021, as more emergent vegetation has moved into the cell. Minimal changes in species presence and cover since 2021. Lower plant cover than would be expected later in the year due to the late growing season start.

PLANTED WOODY VEGETATION SURVIVAL

Silicon Mountain

Planting Type	#Planted #Alive N	Notes
Alnus incana	5	
Salix eriocephala	14	
Salix exigua	16	
Salix geyeriana	13	
Sheperdia argentea	10	

Comments

An estimated 350 containerized trees and shrubs were part of the original planting. During the 2015 monitoring a total of 47 live shrubs were noted; in 2016, 2017 and 2018 a total of 44 live shrubs were identified. During the July 2019 through June 2022 monitoring events an additional 14 trees and shrubs were counted, increasing the total to 58 live containerized plants. Volunteer willows and alders were observed in and around excavated wetland cells across the site.

Silicon Mountain

WILDLIFE

Were man-made nesting structures installed? _	<u>No</u>
If yes, type of structure:	
How many?	
Are the nesting structures being used?	No
Do the nesting structures need repairs?	No
Nesting Structure Comments:	

Two abandoned duck nests observed on installed platforms.

American coots observed with chicks observed.

Species	#Observed	Behavior	Habitat	
American Coot	4			
American Crow	1			
Black-billed Magpie	1			
Brown-headed Cowbird	2			
Cinnamon Teal	4			
Common Raven	10			
Eurasian Collared-Dove	1			
Great Blue Heron	1			
Killdeer	2			
Northern Flicker	1			
Northern Harrier	1			
Red-winged Blackbird	17			
Ruddy Duck	6			
Sandhill Crane	4			
Swallow sp.	2			
Yellow-headed Blackbird	d 12			
Bird Comments				

B-60

BEHAVIOR CODES

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

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

Cottontail Rabbit 1 No No No White-tailed Deer 1 Yes No No

Wildlife Comments:

Site is used by a diversity of bird and wildlife species.

Silicon Mountain

Photograph Checklist:

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.

	· ·	
	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 on	e upland
exists	s then take additional photographs.	

At least one photograph showing the buffer surrounding the wetland.

☑ One β	ohotograph fror	m each end of the	vegetation tra	ansect, showing the transect.
Photo #	Latitude	Longitude	Bearing	Description
DP01u				
DP01w				
DP02u				
DP02w				
DP03u				
DP03w				
DP04u				
DP04w				
DP05u				
DP05w				
DP06u				
DP06w				
DP07u				
DP07w				
PP01				West side of wetland cell 1
PP02				Outside wetland cell 1
PP03				West side of wetland cell 4
PP04				East side of constructed wetland cell 5
PP05				North end of T-1, constructed wetland cell 3
PP06				South end of T-1, constructed wetland cell 3
PP07				Cell 6, west side of tracks, south of overpass
PP08				Southern edge of cell 6 - upstream end
PP09				Northern edge of cell 6 - downstream end
PP10				West side of wetland cell 3
PP11				Sand Creek
PP11 PP12				Sand Creek Sand Creek

PP13 Sand Creek PP14 Headcut PP15 Headcut PP16 Headcut PP17 Northern end of Sand Creek T-1-E West side of cell 2 T-1-S South end of wetland cell 2 T-2-E West side of cell 4 T-2-S East side of wetland cell 4

Comments:

contribute to AA acreage.

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	
The total wetland acreage delineated in 2022, including pre-existing wetland areas, was 17.75 acres, which is a decrease of 0.35 acres since 2021.	
Functional Assessments	
✓ Complete and attach full MDT Montana Wetland Assessment Method field forms.	
Functional Assessment Comments:	
Created Wetland Cells 1 and 5; Cells 2, 3, and 4; and Preservation Wetlands were classified as Functional assessment completed on created cells and preservation wetlands. Open water areas	

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?

If yes, describe the problems below.

No obvious issues with water control structures or impoundments were observed, including in cell 6 where wetlany hydrology was diminished for unknown reasons.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name	Silicon Mour Mitigation Si	ntain Wetland ite		2. MDT _l	project#	ST	PX 47(024)56	3	Conti	r ol# 50	034000		
3. Evaluation Date	10/1/2021	4. Evaluators		es, S Wey M Hickey		Wetl	land/Site# (s)	AA1 - Cr	eated Cells	s 2, 3, 4			
6. Wetland Location(s): T		W	Sec1		Т	R		Sec2				
Approx Stationing or	Mileposts	N/A											
Watershed 2 - U	pper Clark Fo	ork Wa	atersh	ed/Count	y Silver	Bow							
7. Evaluating Agency	CCI 1	for MDT					8. Wetland	size acres			3.7		
Purpose of Evaluati	on						How assess	sed:	Measure	d e.g. by	GPS		
☐ Wetlands potent	ially affected	l by MDT project					9. Assesss	ment area			3.7		
☐ Mitigation Wetla	nds: pre-con	struction					(AA) size (a	•			000		
✓ Mitigation Wetla	nds: post co	nstruction					How assess	sea:	Measured	e.g. by	GPS		
Other	<u> </u>												
40. Olasaisiaatiaa at													
10. Classification of		•	s in AA		10				,				
HGM Class (Brinsor		ass (Cowardin)		Excavat	r (Coward	lin)	Water R		· ·	% of AA	92		
Depressional		ergent Wetland											
Depressional		atic Bed		Excavat	ed		Permanent		5				
Depressional	Scru	b-Shrub Wetland		Excavat	ed		Seasonal/Ir	ntermittent		3			
aquatic nuisance ve	on of AA e matrix below t	to determine [circle] a	Mana natura hayed	ate respon ged in predo al state; is no l, logged, or or	Pred minantly t grazed, otherwise	Land mod sele	ns for Montana- conditions adjace d not cultivated, bu erately grazed or I ctively logged; or I ect to minor cleari	nt to (within 500 It may be nayed or nas been	Land cultion or logged;	vated or hea subject to s t, grading, c	substantial fill learing, or		
			roads	or buildings;	and noxious ver is <=15%.	few	roads or buildings; d or ANVS cover is	noxious	hydrological alteration; high road or building density; or noxious weed or ANVS cover is >=30%.				
AA occurs and is managed in grazed, hayed, logged, or ott roads or occupied buildings; <=15%.	herwise converted	; does not contain	lo	w disturl	oance		low disturb	ance	mode	rate dist	urbance		
AA not cultivated, but may be selectively logged; or has be placement, or hydrological a noxious weed or ANVS cove	en subject to relat Iteration; contains	tively minor clearing, fill		modera disturba		m	oderate dist	urbance	hig	h disturt	oance		
AA cultivated or heavily graz substantial fill placement, grahigh road or building density >=30%.	ading, clearing, or	hydrological alteration;	hiç	gh distur	bance	_	high disturb	ance	hig	h disturt	oance		
Comments: (types of There was a high level wetlands are well deve to cells 2 and 3. Cell 4 ii. Prominent noxiou	of disturbanc loped and cor is adjacent to	e in this AA due to ntinue to expeand. the bike path, a h	site co The ar ome, a	ea surrou nd a park	nding the								

Euphorbia esula, Centaurea stoebe, and Cirsium arvense

iii. Provide brief descriptive summary of AA and surrounding land use/habitat

The AA consists of wetland cells constructed to intercept groundwater. It's composed of the wetland cells 2, 3,and 4 that have a more seasonal/intermittent water regime, with the exception of some perennial open water present within cell 4. Sand Creek is not included in this AA because the berms surrounding the cells do not allow the creek to access these areas. The surrounding area comprises low rolling hills dominated by sagebrush and graminoids.

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Is current management preventing (passive) Modified Existing # of "Cowardin" Vegetated Classes in AA Ratino existence of additional vegetated classes? Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М <NO YES> L 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA Comments: Palustrine Emergent, Palustrine Scrub-Shrub, Palustrine Aquatic Bed (less than 5% vegetation cover) 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \bigcirc D \bigcirc S Secondary habitat (list Species) Incidental habitat (list species) D S **√** S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M 31 .1L 0L Rating **USFWS IPaC** Sources for documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S Hoary bat (S3), Preble's shrew (S3) Secondary habitat (list Species) ○ D • S Incidental habitat (list species) □ D □ S S No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] 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 .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .9H .7M .6M .5M .2L .1L 0L Rating

MTNHP

Sources for documented use

observations of se	abundant v sign such emely limit	wildlife #s	ng [che	ck1).														Mode	ciale		
abundant wildlife presence of extre interviews with load pderate (based on a observations of so	sign such emely limit ocal biolog			JKJ).						Minin	1 al (b	ased on	ı any of	the follo	wing [[check])):	_			
presence of extre interviews with loc pderate (based on a observations of so	emely limit	ı as scat,		•		• •	•	•	1)	=				rvations	during	peak u	ıse peri	ods			
interviews with loop oderate (based on a observations of se	ocal biologi									=		no wildlif	•								
oderate (based on a		ing habita	at featu	ures not	availab	le in the	e surro														
observations of se	ny of the	ists with k	knowle	dge of th	he AA					int	erviev	vs with I	ocal bio	ologists	with kr	nowledg	ge of the	e AA			
_	ite (based on any of the following [check]): eservations of scattered wildlife groups or individuals or relatively emmon occurrence of wildlife sign such as scat, tracks, nest struc							:													
common occurred		•	•				•	•	•		riods										
_		_		s scat, t	racks, i	nest suc	ucture	s, game	trails, e	tc.											
adequate adjacer				£ 1																	
interviews with lo	cal biolog	ists with r	(nowle	dge ot u	ne AA																
i. Wildlife habitat from #13. For class other in terms of the permanent/perenn erms])	ss cover heir perc	to be co	onside positi	ered ev ion of th	enly di	distribut (see #	ted, th #10)	ne most Abbrev	t and le /iations	east pr s for su	evale ırface	ent veg water	getated duration	d classe ons are	es mu e as fo	ust be vollows:	within: : P/P =	20% o	f each	e	
Structural liversity (see			Hig	gh							Mode	erate					Lo)W			
Class cover distribution (all vegetated classes)	E	Even			Unev	ven			Eve	n		_	Unev	ven			Eve	en			
Ouration of surface water in ≥ P.	P/P S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	А		
Low disturbance at AA (see #12i)	E E	Е	н	Е	Е	Н	Н	Е	Н	Н	м	Е	Н	М	М	Е	Н	М	М		
Moderate disturbance at AA (see #12i)	н н	н	Н	Н	н	Н	М	Н	Н	М	м	Н	М	М	L	Н	М	L	L		
High disturbance	м м	М		М	М			М	М	L		М									
at AA (see #12i)				ت			سا						ت		الله			_			
iii. Rating (use			ns fro	om ia	nd ii a	above	and 1	the ma								ional	points	s and r	rating)		
Evidence of wild	llite use	(1)	F	Except	ional				<u>и</u> High		hauı	tat 16	atures	rating Mod	<i>g (ii)</i> derate	۵				Low	
Substantial				<u>лоері</u> 1Е			一		.9F						8H			+		.7M	
Moderate		\dashv					\vdash		.7N						5M				_	.7 IVI	-
Minimal		+	_	.9F			₽	—		-	—			_				+	_		-
				.6M			4		.4N	1	_				.2L					.1L	

i. Habitat Quality and	Known	Suspec	tearisii	Specie	SINA	4 (use ii	Iallix lo	arrive a	LICHECK	the luffct	ioriai po	misand	d rating)							
Duration of surface water in AA			Seasonal / Intermittent							Temporary / Ephemeral										
Aquatic hiding / resting / escape cover	Opt	timal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Ade	quate	Po	oor		
Thermal cover optimal/ suboptimal	0	S	0	S	0	S	0	S	0	s	0	S	0	S	0	S	0	S		
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L		
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	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L		

Sources used for identifying fish sp. potentially for	ound in AA	4:												
ii. Modified Rating (NOTE: Modified score ca a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuis yes, reduce score in i above by 0.1: Modified	a culvert, d f TMDL de sance plan	dike, or other n evelopment wit	nan-made s h listed "Pro	obable Impa	aired Ú	ses" includii	ng cold or w	arm water	e If					
b) Does the AA contain a documented spawning comments) for native fish or introduced game fis	_	ther critical had			ne adju	sted score ii	ng area, etc. n i or iia abc							
iii. Final Score and Rating: .5 M	Comme	ents: No fish	habitat w	vithin AA.	. Cell	4 has ope	en water b	out no inle	et or outle	et.				
14E. Flood Attenuation: (Applies only to weth channel or overbank flow, click NA her		ect to flooding ceed to 14F.)	via in-chanr	nel or overb	ank flo	w. If wetlan	ds in AA are	e not flooded	d from in-					
 i. Rating (working from top to bottom, use the Estimated or Calculated Entrenchment (Rosgel 1994, 1996) 		ow to arrive at tly entrenched stream type	- C, D, E	Moderate		enched – B	Entrench	ed-A, F, G s types	stream					
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-7	5% <25%	75%	25-75%	<25%					
AA contains no outlet or restricted outlet	_1H	.9H	.6M	.8H	.71	.5M	.4M	.3L	.2L					
AA contains unrestricted outlet	.91	.8H	.5M	.7M	.61	л .4M	.3L	.2L	.1L					
Olimbah, Suturnah ad														
Slightly Entrenched ER = >2.2 C stream type D stream type D stream type D stream type E stream type B stream type B stream type A stream type F stream type G stream type														
C stream type D stream type E stream	· • ·	D Siles			stream t	yje	F stream type		stream type					
Floodprone width ii. Are ≥10 acres of wetland in the AA subject to within 0.5 mile downstream of the AA (check)? Comments: AA is less than 10 acres and the AA (check)?	/ Bar wid of flooding A	Bankfull D	Depth made featur	res which m	nay be	Bankfull Wides	nchment damaged b	,	ated					
 14F. Short and Long Term Surface Wa upland surface flow, or groundwater flow. 14G.) i. Rating (Working from top to bottom, u water durations are as follows: P/P = perm further definitions of these termsl.) 	If nowe	tlands in the atrix below to	AA are sul parrive at [bject to flo [check] the	oding e func	or ponding tional point	g, dick [s and ratin	NA here	and proce	eed to surface				
Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic		>5 acre feet			1.1	to 5 acre feet			≤1 acre foot					
flooding or ponding 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	.9Н	.8Н	.8H	1	.6M	.5M	.4M	.3L	.2L				

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	.8Н	.8Н	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7М	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Wetland cells intercept groundwater seasonally and are less than 5 acres.

14G. Sec																		
to 14H.) i. Rating						·					-		•					
= low]) Sediment, i levels withi		d toxican	tinput	com not	to delive pounds substar	r levels at levels ntially im of nutrier	of sedim such th paired. I	ents, nu at other Minor se xicants,	with poter trients, or functions dimentations or signs of	are n,	nutrient with po compour	lopmen s, or tox tential to nds such	t for "pro icants or o deliver o that oth ation, sou	bable can AA rechigh lever high lever funct arces of	auses" rel eives or s els of sec ions are s	lated to s surround diments, substant or toxica	d of TMDI sediment, ling land ι nutrients, ially impai ants, or si	use or ired.
% cover of					≥ 70%	Cuttopi	lication		0%			≥ 70		ортност	lon piese	< 70)%	〓
Evidence o	f flooding /	ponding i	in AA	Yes		No	Υe	s	No		Yes		N	5	Ye	s	No	
AA contain:	s no or res	stricted o	utlet	11	1	8H	.71	и I I	.5M		.5N	1	.4	мΊ	.3L		.2L	
AA contains	s unrestri o	ted outle	et	.9ŀ	-	7M	.61	-	.4M		.41		.3	_	.21		.1L	1
Commer									groundw									
14H Sedim drainage, o proceed to i. Rating	or on the sh 14I.) (working fr	om top to	f a stand	ling wate	er body	which is	subject	to wave	e action. I	f 14H d tional p	oes not a	apply, cl d rating)	ick _		man-ma ere and	de		
% Cover of <u>v</u> shoreline by	species with			Dorn	manant /	Doronniol			ce water ad			<u>-</u>		/ Enham	oral	\blacksquare		
of ≥6 (see Ap ≥ 65%	ppendix F).			Perr		Perennial		5	easonal / In	1	nt	10	emporary	1	erai ———			
					1H	_								7M		-		
35-64% < 35%					.7N				.61	И П				5M		-		
Oomments 14I. Pro	s: latifo					Salix s _l	op. with	ı rating:	s of 6 or	greate	r.							
	of Biolog			thesis of						_								
	ig (14D.iii.		E/H	eneral	Wilding	М	Rating	(140.11	L									
	E/H		Н	1		н			м									
	M		Н			М			М									
	L		М			М			L									
	N/A		Н			М			L									
ii. Rating wetland consubsurface [see instruction]	mponent ir outlet; the ctions for fu	n the AA; final thre urther def getated com	Factor B ee rows p initions on ponent >5 a	= level pertain to of these acres	of biologo duration terms].)	gical act on of sur	ivity rati face wa	ng from ter in the	above (14 e AA, whe	4I.i.); Fa ere P/P, acres	actor C = S/I, and	whethe	r or not t as previ	he AA of ously d	contains a efined, a mponent <1	a surfacend A = "	e or absent"	
B Ye	High es No	Mod Yes	lerate No	Yes	ow No	Yes	ligh No	Yes	oderate No	Yes	.ow No	Yes	igh No	Mo Yes	derate No	Yes	ow No	
P/P 1E	E .7H	.8Н	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L	
S/I .9I	н .6М	.7H	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L	
T/E/A .8I	H .5M	.6M	.3L	.4M	.2L	.7H	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L	
ii. Modified plant cover, sontrol). a) Is there are to the score	≤ 15% nox	ious wee	d or ANV	S cover	, and th	at is not	subject	ed to pe	eriodic me	chanica	ıl mowing			ess for).1		
Comments	s: Cells	contain	a subst	urface o	outlet; l	nave ve	getate	d buffer	rs.									

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during domant season/drought Stream is a known 'losing' stream; discharge volume decreases Wetland occurs at the toe of a natural slope Other Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information NA **Comments:** Mitigation cells designed to intercept shallow groundwater aquifer. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously Replacement potential or mature (>80 yr-old) forested diversity (#13) is high or contains cited rare types or associations wetland or plant association listed plant association listed as "S2" by and structural diversity (#13) is as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo rare rare common rare common abundance (#11) Low disturbance at AA 1H .9H .8H .8H .6M .5M .5M .4M .3L (#12i) Moderate disturbance at .9H H8. .7M .7M .5M .4M .4M .3L .2L AA (#12i) High disturbance at AA .8H .3L .2L .7H .6M .6M .4M .3L .1L (#12i) Comments: AA doesn't contain rare types and structural diversity is high. 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: (check) Y $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA here and proceed to the overall summary and rating page) Check categories that apply to the AA: 🗸 Educational/scientific study; 🗌 Consumptive rec.; 🗸 Non-consumptive rec.; ___Other iii. Rating (use the matrix below to arrive at [check] the functional points and 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 051 Comments: Site is a mitigation area that could be used for education purposes, has general public access and public ownership. Used for educational studies by students at MSU and Montana Tech. **General Site Notes** Wetland acreage decreased in 2022 by 0.3-acres.

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.5	1	1.85	
C. General Wildlife Habitat	Н	.9	1	3.33	✓
D. General Fish Habitat	М	.5	0	1.85	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	М	.6	1	2.22	
G. Sediment/Nutrient/Toxicant Removal	Н	1	1	3.70	~
H. Sediment/Shoreline Stabilization	М	.6	1	2.22	
Production Export/Food Chain Support	Н	.9	1	3.33	✓
J. Groundwater Discharge/Recharge	М	.7	1	2.59	✓
K. Uniqueness	М	.5	1	1.85	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	0.74	
Totals:		6.4	9	23.68	
Percent of Possible Score	•		71.11 %		

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 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 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: (check appropriate category based on the criteria outlined above)

ı	II	III	IV

MDT Montana Wetland Assessment Form (revised March 2008)

Purpose of Evaluation Wetlands potentially affect Mitigation Wetlands: pre-co	4. Evaluators	R Jones, S Weyar Fouts, M Hickey N Sec1 2 tershed/County		Wetla T	and/Site# (s) AA2- C	reated Cel	ls 1 and 5	
Approx Stationing or Mileposts Vatershed 2 - Upper Clark I Evaluating Agency CC Purpose of Evaluation Wetlands potentially affect Mitigation Wetlands: pre-co	3N R 91 5 N/A Fork Wa	N Sec1 2		T	R	Sec2		
eatershed 2 - Upper Clark I Evaluating Agency CC Purpose of Evaluation Wetlands potentially affect Mitigation Wetlands: pre-co	Fork Wa	tershed/County	Silver B	L				
Evaluating Agency CO Purpose of Evaluation Wetlands potentially affect Mitigation Wetlands: pre-co		tershed/County	Silver B					
Purpose of Evaluation Wetlands potentially affect Mitigation Wetlands: pre-co	CI for MDT		Olivei D	ow				
Wetlands potentially affect					8. Wetland size acre	s		6.08
Mitigation Wetlands: pre-c					How assessed:	Measure	ed e.g. by G	PS
_	ed by MDT project				9. Assessment are	a		6.08
4	onstruction				(AA) size (acres)	Magaura	daa by Cl	200
Mitigation Wetlands: post of the post o	construction				How assessed:	ivieasure	ed e.g. by Gl	-3
☐ Other								
0. Classification of Wetland a	and Aquatia Habitata	in AA						
	Class (Cowardin)	Modifier (Cowardin	٠,	Water Regime		% of AA	
	quatic Bed	Excavated		''	Permanent/Perennia		/0 UI AA	43
•	nergent Wetland	Excavated			Seasonal/Intermitten			52
					·			
epressional	crub-Shrub Wetland	Excavated			Seasonal/Intermitten			5
General Condition of AA i. Disturbance: (use matrix below aquatic nuisance vegetation special)		opropriate response			s for Montana-listed noxion			
Conditions within A	IA	Managed in predomin natural state; is not gr hayed, logged, or othe converted; does not c roads or buildings; an weed or ANVS cover in	razed, erwise ontain d noxious	moder select subject few ro	not cultivated, but may be rately grazed or hayed or tively logged; or has been ct to minor clearing; contains bads or buildings; noxious or ANVS cover is <=30%.	or logge placeme hydrolog building	tivated or heavild; subject to subject to subject to subject, grading, cleatical alteration; heavild; or noxidation is >=30%	stantial fill ring, or igh road or ous weed
A occurs and is managed in predominantly razed, hayed, logged, or otherwise conver pads or occupied buildings; and noxious w =15%.	ted; does not contain	low disturba	nce		low disturbance	moderate disturbance		
A not cultivated, but may be moderately grelectively logged; or has been subject to relacement, or hydrological alteration; contaioxious weed or ANVS cover is <=30%.	elatively minor clearing, fill	moderate <u>disturbanc</u>		mo	derate disturbance			
A cultivated or heavily grazed or logged; s ubstantial fill placement, grading, clearing, igh road or building density; or noxious we =30%.	or hydrological alteration;	high disturba	ince	ŀ	high disturbance	hiọ	gh disturba	nce
omments: (types of disturband is is year 8 following construction d perennial weeds present. The	on; wetland cells 1 and	d 5 have establish						
. Prominent noxious, aquatic Linaria vulgaris and Euphorbia e		ic species:						

have no surface connection to one another. Cell 1 drains into Sand Creek, but is upslope/outside of Sand Creek's active floodplain area. Neither cell is subject to overbank flooding. The AA also includes the emergent and scrub-shrub wetland that has developed surrounding constructed cells 1 and 5.

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Is current management preventing (passive) Modified existence of additional vegetated classes? Existing # of "Cowardin" Vegetated Classes in AA Ratino Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М <NO YES> L 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA Comments: Palustrine Aquatic Bed (w/ less than 5% emergent vegetation), Palustrine emergent, Palustrine 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \bigcirc D \bigcirc S Secondary habitat (list Species) Incidental habitat (list species) D S **√** S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M 31 .1L 0L Rating **USFWS IPaC** Sources for documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) ○ **D** ● **S** Westslope cutthroat trout (S2) O D • S Preble's shrew (S3), Secondary habitat (list Species) ○ **D** ● **S** Hoary bat (S3), Large flowered beardtongue (S1) Incidental habitat (list species) No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] the functional points and rating) sus/primary Highest Habitat Level doc/primary doc/secondary sus/secondary doc/incidental sus/incidental None S1 Species: Functional Points and .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .9H .7M .6M .5M .2L .1L 0L Rating

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MTNHP

Sources for documented use

withstantial (based on any of the following (check)): Minimal (based on any of the following (check)): observations of abundant wildlife sto n high species diversity (during any period)	observations of abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. Itilite to no wildlife observations during peak use periods		nce of c														•		•		Mod	erate		
abundant wildlife sign such as scat, tracks, nest structures, game trails, etc.	abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. spresence of extremely limiting habitat features not available in the surrounding area sparse adjacent upland food sources interviews with local biologists with knowledge of the AA derate (based on any of the following [check]): observations of scattered wildlife groups or individuals or relatively few species during peak periods common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc. adequate adjacent upland food sources interviews with local biologists with knowledge of the AA Wildliff abilitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structural diversity is omn #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be within 20% of each their in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: P/P = memanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further definitions of these trans) Noderate Low Low	1	-													-			-					
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Duration of our acceptance of uniform and in above and the matrix below to arrive at [check] the functional points and rating) Evidence of wildlife use (i) Exceptional P/P S/I T/E A P/P S/I T/E	Interest	listribution (all regetated		Eve	n			Une	ven			Eve	n			Une	/en			Ev	en			
t AA (see #12i) E E E H E E H H H H	AA (see #12i) E E E H E H H E E H H M M E H M M E H M M E H M M L L E E E E E E H H H H M M M H M M L L L E E E E E E E E H H H H H M M M H M M L L L L L L L L L	Ouration of urface water in ≥	P/P	S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	А		
iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) Evidence of wildlife use (i) Exceptional High Moderate Low Substantial 1E .9H .8H .7M	i. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) ii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating)		Е	E	Е	н	E	E	Н	н	Е	Н	Н	м	Е	Н	М	м	E	н	М	м		
iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) Evidence of wildlife use (i) Exceptional High Moderate Substantial 1E 9H .8H .7M	i. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) ii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) ii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) ii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating)		н	н	н	П	Н	Н	Н	М	Н	Н	М	м	Н	М	М		Н	М	L			
iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) Evidence of wildlife use (i) Exceptional High Moderate Low Substantial 1E .9H .8H .7M	i. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional points and rating) Wildlife habitat features rating (ii)					H													_	_	1			
Evidence of wildlife use (i) Wildlife habitat features rating (ii) Exceptional High Moderate Low Substantial 1E .9H .8H .7M Moderate .8H .7M .7M	Wildlife habitat features rating (ii) Exceptional High Moderate Low	at AA (see #12i)	М	M	M		М	M		L	M	М	L	L	М	L	L	L	L	_L	L	L		
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Exceptional High Moderate Low Substantial 1E .9H .8H .7M Moderate	Exceptional High Moderate Low Substantial 1E .9H .8H .7M Moderate .9H .7M .5M .3L Minimal .6M .4M .2L .1L	iii. Rating (use the	conc	lusio	ns fro	om i a	nd ii a	above a	and t	the ma	atrix be	elow to	o arri	ve at	checl	() the	funct	ional p	points	s and i	rating))	
Substantial 1E .9H .8H .7M	Substantial 1E .9H .8H .7M Moderate .9H .7M .5M .3L Minimal .6M .4M .2L .1L	Evidence of v	vil dlife	use (i)			·:1						habi	tat fea	atures			_				1	
Moderate	Moderate .9H .7M .5M .3L //inimal .6M .4M .2L .1L	Substantial		—	+					┢									e T		+			1
.9H .7M .5M .3L	.9H				+														-					-
Misimal	.0IVI .4IVI .2L .1L				_		.9⊦	٠,_				./۱	/					5M	-				.3L	_
.6M .4M .2L .1L	mments Moderate wildlife use but exceptional and diverse wildlife habitat features.						.6N	1				.41	1					2L					.1L	
			Mode	rate \	wiidlife	e ust		P																
			Mode	rate v	wiidlife	e ust																		
	D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "correctable" such that the AA	omments D. General I	Fish Ha	abitat	t Rati	ng: (Asses	ss this	s funct															e AA
uld 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	uld 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	D. General I	Fish Ha	abitat	t Rati i	ng: ((Asses	ss this	s funct by per	chec	l culve	ert or o	ther b	arrie	r, etc.]. If th	ne AA	is no	t used	d by f	ish, fis	sh use	is not	
ould 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check	D. General I	Fish Haby fish	abitat [i.e., i	t Rati i fish ua	ng: (ise is ints,	(Asses	ss this	s funct by per	chec	l culve	ert or o	ther b	arrie	r, etc.]. If th	ne AA	is no	t used	d by f	ish, fis	sh use	is not	
uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check	D. General I	Fish Haby fish	abitat [i.e., i	t Rati i fish ua	ng: (ise is ints,	(Asses	ss this	s funct by per	chec	l culve	ert or o	ther b	arrie	r, etc.]. If th	ne AA	is no	t used	d by f	ish, fis	sh use	is not	
auld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.)	D. General I uld be used lastorable due	Fish Haby fish to habi	abitat [i.e., i tat co oceed	t Ration fish used on strain 14	ng: (se is ints, 4E.)	Asses preclu or is r	ss this uded I	s funct by per esired t	rched	l culve a mar	ert or o nagem	ther b	arrie erspe	r, etc. ective]. If th [such	ne AA as fis	is no h ent	t used rappe	d by f d in a	ish, fis	sh use	is not	
build 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating)	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating)	D. General I build be used is storable due NA here: Habitat Qu	Fish Ha by fish to habi and pro	abitat [i.e., i tat co oceed	t Ration fish used on strain 14	ng: (ise is ints, 4E.)	Asses	ss this uded I not de	s funct by per esired t	rched	l culve a mar	ert or o nagem	ther b	erspe	r, etc. ective heckth]. If the [such	ne AA as fis	is no h ent	t used rappe	d by f d in a	ish, fis a cana	sh use I], the	is not n check	
build 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating) Duration of surface water n.AA Permanent / Perennial Seasonal / Intermittent Temporary / Ephemeral Aquatic hiding / resting / Optimal Adequate Poor Optimal Poor O	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating) Water and Permanent / Perennial Seasonal / Intermittent Temporary / Ephemeral qualic hiding / resting / Online Adequate Poor Online Poor Online Adequate Poor Online Adequate Poor Online Poor	Duration of surface	Fish Haby fish to habi and pro	abitat [i.e., i tat co oceed	t Ration fish use onstraid to 14 own / S	ing: (lase is nints, 4E.)	Asses	ss this uded I not de	s funct by per esired to becies	rched from in AA	a mar	ert or o	ther beent pe	erspe	er, etc. ective heckth]. If the [such	ne AA as fis	is no h ent	t used rappe	d by fed in a	ish, fis a cana Tem	sh use	is not n check	ral
build 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating) Duration of surface water NA Permanent / Perennial Seasonal / Intermittent Temporary / Ephemeral	uld 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 storable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped in a canal], then check NA here and proceed to 14E.) Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rating) Female over without of surface water AA Perennial Seasonal / Intermittent Temporary / Ephemeral quatic hiding / resting / Optimal Adequate Poor O	Duld be used storable due NA here a Habitat Qu	Fish Haby fish to habi and pro	abitat [i.e., tat co	t Ratii fish us onstra I to 14	ing: (ise is iints, 4E.) Suspe	Assessing precluor is rected F	ss this uded I not de	s funct by per esired to pecies	in AA	a mar	ert or on agem	ther been to perfect the trimal	erspe	r, etc. ective heckth]. If the [such	ne AA as fis	is no h ent	and ra	d by fed in a	ish, fis a cana Tem	sh use	e is not n check	ral P

in AA		Pei	manent / I	Perennial				Se	easonal /	ntermitten	t			Tem	porary/	Epheme	eral	
Aquatic hiding / resting / escape cover	Opt	timal	Adeq	uate	Po	or	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	quate	Po	or
Thermal cover optimal/ suboptimal	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
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	.6М	.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	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

	1 i A A -									
sources used for identifying fish sp. potentially four ii. Modified Rating (NOTE: Modified score canna) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of T fishery or aquatic life support, or do aquatic nuisanyes, reduce score in i above by 0.1: Modified R	not exceed culvert, dike MDL devel ace plant of	e, or other m lopment with	an-made ['] s i listed "Pro	obable Imp	aired Úses"	including	cold or w		ne If	
b) Does the AA contain a documented spawning a comments) for native fish or introduced game fish?		_		•	ne adjusted					
iii. Final Score and Rating: 0 NA	Comment				creek, but ave been					k's active I in AA.
14E. Flood Attenuation: (Applies only to wetlan channel or overbank flow, click ■ NA here a	and procee	d to 14F.)					s in AA ar	e not floode	ed from in-	
i. Rating (working from top to bottom, use the m. Estimated or Calculated Entrenchment (Rosgen	Slightly	entrenched -	C, D, E	Moderate	ely entrench		Entrencl	ned-A, F, G	stream	
1994, 1996) % of flooded wetland classified as forested	75%	stream types 25-75%	<25%	s 75%	tream type 25-75%	<25%	75%	types 25-75%	<25%	
and/or scrub/shrub AA contains no outlet or restricted outlet	1H	.9H	.6М	.8H	.7M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L	
Slightly Entrenched		Moderately	Entrenched				trenched			
ER = >2.2 C stream type	/pe	ER = 1.4 B strea		As	stream type		= 1.0 - 1.4 stream typ		stream type	
						Ę				
2 x Bankfull Dep		Bankfull Do	epth X	340	Fl W Bankf	∞d-pron full Widt Entrenc ratio	h			
ii. Are ≥10 acres of wetland in the AA subject to fluithin 0.5 mile downstream of the AA (check)? Comments: Wetland cells impound water	ooding AN	N ● ng return	to Sand	Creek. C		ficantly d				Creek's
active floodplain area, and n	ot subjec	t to overt	Jank 1100							

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].)

iditate delinitatio di tricce terrioj.)									
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	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	.7М	.7M	.5M	.4M	.3L	.2L	.1L

Comments: (2.67 created acres of perennial depressional aquatic bed) x (average 1 ft. ponding/flow at high water) = 2.67 acre feet

14G. Sediment/Nutrient/Toxica through influx of surface or ground to 14H.)	nt Retention d water or din	and Ren ect input.	n oval: (If no w	Applies etlands	to wetl in the A	ands w AA are	rith pote subject	ntial to to such	receive input,	sedim click	nents, nu	utrients, A he re a	ortoxicants and proceed
i. Rating (working from top to be	ottom, use the	matrix b	elow to	arrive a	t [checl	k] the fo	unctiona	l points	and ra	ting [Ի	l = high,	M = m	oderate, or l
= low]) Sediment, nutrient, and toxicant input levels within AA	not subsi	ver le vels of ls at levels antially imples of nutrier eutroph	of sedime such tha paired. M	ents, nutri at other fu linor sedi icants, or resent.	ients, or unctions mentation signs of	are n,	deve nutrient with pot compour	lopment s, or toxi tential to ds such edimenta	for "prob cants or deliver h that othe tion, sou of eutn	oable ca AA rec nighlev erfunct rcesof	auses" rel eives or s els of sec ions are s	ated to s surround liments, substanti or toxica nt.	d of TMDL ediment, ing land us e nutrients, or ally impaired. ints, or signs
% cover of wetland vegetation in AA Evidence of flooding / ponding in AA	≥ 70	%		< 70'	%			≥ 70	%			< 70	%
AA contains no or restricted outlet	Yes 1H	.8H	Yes	_	.5M	1	Yes .5N		.4ľ		Yes		.2L
AA contains unrestricted outlet	.9H	.7M	.6N	1	.4M		.4N		.3		.2L	-	.1L
Comments: Does not achive 70)% threshold	due to be	ing 43%	6 open v	water								
14H Sediment/Shoreline Stabilization drainage, or on the shoreline of a star proceed to 14I.) i. Rating (working from top to bottom % Cover of wetland streambank or	iding water bod	y which is	subject t	to wave a	action. I	f 14H do	oes not a	pply, cli l rating)			man-mae	de	
shoreline by species with stability ratings of ≥6 (see Appendix F).	Permanent	/ Perennial		Sea	sonal / In	termitten	t	Te	emporary /	Ephem	eral		
≥ 65%		1H			.9⊦	1			.7	М			
35-64%		7M			.6N	1			. !	5М			
< 35%		3L			.2L					1L		1	
Vegetation with a r									naris pa	lustris	, Carex	nebraso	censis,
and Salix spp., whi 14I. Production Export/Food Cha i. Level of Biological Activity (sy General Fish Habitat	ch surrounds ain Support: athesis of wildli	aquatic before and fish	peds as	emerge	ent/scru				naris pa	lustris	, Carex	nebraso	pensis,
14I. Production Export/Food Chai. Level of Biological Activity (sy. General Fish Habitat Rating (14D.iii.)	ch surrounds ain Support: athesis of wildli	aquatic b	peds as	ratings [c	check])				naris pa	lustris	, Carex	nebraso	censis,
and Salix spp., which specifies are specified as a specified and Salix specifies are specified as a specified are specified as a specified and Salix specified are specified as a spe	ch surrounds ain Support: athesis of wildli	fe and fish M H	peds as	ratings [c	check])				naris pa	lustris	, Carex	nebrase	censis,
and Salix spp., which specifies are specified and Salix spp., which specifies are specifies and Salix spp., which specifies are specifies and Salix spp., which specifies are specified and Salix spp., which specifies are specified and Salix spp., which specifies are specified as a specified and Salix spp., which specifies are specified as a specified and Salix spp., which specifies are specified as a specified and Salix specifies are specified as a specified and Salix specifies are specified as a specified are specified as a specified and Salix spp., which specifies are specified as a specified ar	ch surrounds ain Support: athesis of wildli	fe and fish fe Habitat M H M	peds as	ratings [c (14C.iii.)	check])				naris pa	lustris	, Carex	nebraso	censis,
and Salix spp., which specifies are specified and Salix specifies are specified and Sali	ch surrounds ain Support: athesis of wildli	fe and fish M H	peds as	ratings [c(14C.iii.)]	check])				naris pa	lustris	, Carex	nebraso	censis,
and Salix spp., white special special spp., white special special spp., white special special spp., white special spp., white special spp., white spp.	m, use the mal B = level of bios pertain to dura of these terms	fe and fish fe Habitat M H M M rix below t logical act tion of sur	n habitat i Rating i Rating i a construction arrive ar	ratings [c(14C.iii.)] [A	check])	b-shrul	points ar	d rating	. Factor or not th as previo	A = ac ne AA c ously d	creage of contains a cefined, ai	vegetate a surface nd A = "a	ed e or
and Salix spp., white special spp., white spp.	m, use the mate B = level of these terms of acres	fe and fish fe Habitat M H M orix below to logical act to gion of sur	habitat i Rating i ra	ratings [c (14C.iii.) L I I I I I I I I I I I I	check]) M I I I I I I I I I I I I	b-shrul	points ar	d rating whether T/E are	. Factor or not th as previo	A = ac ne AA c ously d	creage of	vegetate a surface nd A = "a acre L	ed e or
and Salix spp., white special special spp., white special special spp., white special special spp., white special spp., white	m, use the mate B = level of these terms of acres	fe and fish fe Habitat M H M M rix below t logical act toion of sur].)	n habitat i Rating i Rating i co arrive a ivity ratin face wate	ratings [c(14C.iii.)] [A	check])	octional	points ar ictor C = S/I, and	d rating whether T/E are	. Factor or not th as previous Veg	A = ac ne AA c busly d etated coi Mo	reage of contains a efined, ai mponent <1 derate	vegetate a surface nd A = "a acre	ed e or absent"
A Vegetated component × See instructions for further definitions A High Moderate C Yes No Yes No	m, use the main B = level of bio pertain to dura of these terms 5 acres	fe and fish fe Habitat M H M M rix below t logical act toion of sur].)	nabitat i Rating i Rating i Rating i ivity ratin face water Vege	ratings [c (14C.iii.) A at [checkage from a ager in the estated comp Model Yes	check]) M W Ithe furnithment of the furnithment	b-shrul	points ar ctor C = S/I, and	d rating whether T/E are	. Factor or not th as previo	A = ac ne AA c busly d etated coi Mo Yes	ereage of contains a efined, an mponent <1 derate	vegetate a surface nd A = "a acre	ed e or absent"
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14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during domant season/drought Stream is a known 'losing' stream; discharge volume decreases Wetland occurs at the toe of a natural slope Other Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information NA Comments: Wetland mitigation cells with perennial water that intercept groundwater. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously Replacement potential or mature (>80 yr-old) forested diversity (#13) is high or contains cited rare types or associations wetland or plant association listed and structural diversity (#13) is plant association listed as "S2" by as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo common rare rare common rare abundance (#11) Low disturbance at AA 1H .9H H8. .8H .5M .5M .4M .3L .6M (#12i) Moderate disturbance at .9H H8. .7M .7M .5M .4M .4M .3L .2L AA (#12i) High disturbance at AA .8H .7H .6M .6M .4M .3L .3L .2L .1L (#12i) Comments: AA does not contain rare types and structural diversity is considered high following 2022 site visit. 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: (check) Y $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA here and proceed to the overall summary and rating page) Check categories that apply to the AA: 🗸 Educational/scientific study; 🗌 Consumptive rec.; 🗸 Non-consumptive rec.; Other iii. Rating (use the matrix below to arrive at [check] the functional points and 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 051 Comments: Mitigation site with public ownership, public access, and potential for educational use. Site is being used for educational studies by students at MSU and Montana Tech. **General Site Notes** The open water attracts a variety of waterfowl and other bird species, and adds habitat complexity promoting an increase in plant and animal diversity. This increased diversity represents a valuable educational resource for scientists, teachers, students, and conservation groups. The AA is highly accessable due to the adjacent parking area and bike path.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA2- Created Cells 1 and 5

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.5	1	3.04	
C. General Wildlife Habitat	Н	.9	1	5.47	~
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	Н	.8	1	4.86	>
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	4.26	
H. Sediment/Shoreline Stabilization	Н	1	1	6.08	
Production Export/Food Chain Support	Е	1	1	6.08	>
J. Groundwater Discharge/Recharge	Н	1	1	6.08	>
K. Uniqueness	М	.6	1	3.65	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	1.22	
Totals:		6.7	9	40.74	
Percent of Possible Score			74.44 %		

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 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 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: (check appropriate category based on the criteria outlined above)

ı	II	III	IV

MDT Montana Wetland Assessment Form (revised March 2008)

	ation Site	ain Wetland e	2	2. MDT	project#	ST	PX 47(024)56		Con	trol#	5034000
J. EVAIUALION DATE // 1/2		4. Evaluators		s, S Wey M Hickey		Wetl	and/Site# (s)	AA3 - Pre	eservatio	n	
6. Wetland Location(s): T	-		W	Sec1		Т	R		Sec2		
Approx Stationing or Milep	osts	N/A									
Vatershed 2 - Upper Cl	lark Fork	Wa	itershe	d/Count	Silver	Bow					
. Evaluating Agency	CCI fo	r MDT					8. Wetland s	size acres			11
Purpose of Evaluation							How assess		Measure	ed e.g.	
. ☐ Wetlands potentially af	ffected b	y MDT project					9. Assesssn (AA) size (ac				11.92
☐ Mitigation Wetlands: p	re-cons	truction					How assess	•	Measure	dea l	hy GPS
✓ Mitigation Wetlands: per	ost con	struction					11011 433633	ou.	Mododio	.u o.g. i	by 01 0
Other											
10. Classification of Wetla		Aquatic Habitats	in AA		r (Coward	in)	Water Re	egime		% of <i>A</i>	AA
Depressional	_	ic Bed					Permanent/F				5
Depressional	Emerg	gent Wetland					Seasonal/Int	ermittent			35
Depressional	Scrub	-Shrub Wetland					Seasonal/Int	ermittent			2
Depressional	Emerg	gent Wetland					Permanent/F	Perennial			58
	1										
		Common]					
General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation	AA below to	determine [circle] a	Manag	ed in predo	Predo	<i>minant</i>	conditions adjacent	to (within 500	feet of) AA	tivated or	· heavily grazed
i. Disturbance: (use matrix	the below to a species	determine [circle] a	Manag natural hayed, conver	led in predo I state; is no logged, or ted; does no or buildings	Predominantly of grazed, otherwise	Land mode select subject	conditions adjacent	may be ayed or us been g; contains noxious	Land culture or logged placement hydrolog building	tivated or d; subject nt, gradin ical altera	to substantial fing, clearing, or ation; high road or noxious weed
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13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Is current management preventing (passive) Modified existence of additional vegetated classes? Existing # of "Cowardin" Vegetated Classes in AA Ratino Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М <NO YES> L 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA Comments: Palustrine Emergent, Palustrine Scrub-Shrub, Palustrine Aquatic Bed (less than 5% vegetation cover) 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \bigcirc D \bigcirc S Secondary habitat (list Species) Incidental habitat (list species) D S **√** S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M .3L .1L 0L Rating **USFWS IPaC** Sources for documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) ○ **D** ● **S** Westslope cutthroat trout (S2) Hoary bat (S3) Secondary habitat (list Species) ○ D • S ○ **D** • S Hoary bat (S3), Large flowered beardtongue (S1) Incidental habitat (list species) No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] 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 .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .9H .7M .6M .5M .2L .1L 0L Rating

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MTNHP

Sources for documented use

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Minimal Comments 4D. General Food be used be estorable due of NA here a Habitat Que Duration of surface in AA Aquatic hiding / resease cover	Fish Haby fish to habi and pro	abitat [i.e., titat co oceed	onstraid to 14	ing: (a use is aints, (a 4E.) Suspec	(Assess precluor is n	a diverse se this uded henot des	s funct by per esired 1	tion if rched from in AA	f the Ad culver a man	A is usert or or or nagemental trix to	sed by other be arrived by arrived	y fish parrie erspe	ective checkth]. If the such the function termitter uate	he AA as fis	is no	ot used trappe	d by fired in a ating) Optim	ish, fis a cana Tem	sh use	e is not en check	ral Pc													
Minimal Comments 4D. General Fould be used be estorable due of NA here a Habitat Quinter and A Aquatic hiding / resease over	Fish Haby fish to habi and pro	abitat [i.e., 1 iitat co oceed	nt Ratin fish us onstrai d to 14	ing: (ause is aints, 4E.)	(Assess precluor is nected Fi	a diver	s funct by per esired 1	tion if rched from in AA	f the Add culver a man	A is usert or of nagemental to the nagemental to the nagemental to the natrix to	sed by other b nent pe	y fish parrie erspe	er, etc. ective]. If the [such he func	he AA as fisi	is no	ot used trappe	d by fi ed in a	ish, fis a cana Tem	sh use al], then	e is not en check	ral													

. Habitat Quality and	Known	Suspec	ted Fish	Specie	es in A/	A (usen	natrix to	arnve a	τլcneck	ine funct	ionai po	ints and	a rating)						
Duration of surface water in AA		Permanent / Perennial						Seasonal / Intermittent						Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Opt	imal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	quate	Po	oor	
Thermal cover optimal/ suboptimal	0	S	0	S	0	S	0	S	0	s	0	S	0	S	0	S	0	S	
FWP Tier I fish species	1E	.9Н	.8H	.7M	.6M	.5M	.9Н	.8H	.7М	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L	
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	.7М	.6М	.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	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L	

ii. Modified Rating (NOTE: Modified score canna) Is fish use of the AA significantly reduced by a courrent final MDEQ list of waterbodies in need of The fishery or aquatic life support, or do aquatic nuisan yes, reduce score in I above by 0.1: Modified R	not excee ulvert, dik MDL deve ce plant d ating	e, or other melopment with	an-made s n listed "Pr cies (see d	structure o obable Imp Appendix	paired Úses" E) occur in f	' including ish habita	g cold or v at? Y	varm water N ●	lf	
b) Does the AA contain a documented spawning as comments) for native fish or introduced game fish?	_	' N			the adjusted					
iii. Final Score and Rating: 0 NA	Commen	ts: No fish	habitat v							
14E. Flood Attenuation: (Applies only to wetland channel or overbank flow, click NA here a	and proce	ed to 14F.)					s in AA ar	e not floode	d from in-	
i. Rating (working from top to bottom, use the ma Estimated or Calculated Entrenchment (Rosgen		entrenched -	C, D, E	Modera	tely entrench		Entrenc	hed-A, F, G	stream	
1994, 1996) % of flooded wetland classified as forested and/or scrub/shrub	75%	stream types 25-75%	<25%	75%	25-75%	<25%	75%	types 25-75%	<25%	
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L	
Slightly Entrenched ER = >2.2		Moderately E ER = 1.4	1 – 2.2			ER	ntrenched = 1.0 – 1.4			
C stream type D stream type E stream ty	pe	B stream	m type	A	stream type	Ę	stream ty	pe G	stream type	
2 x Bankfull Dept	h 🌺	Bankfull De	epth	1 €	Fl Bank	∞d-pror full Widt	ne Width h			
Floodprone width	/ Bank width	-			=	Entrend ratio	hment			
ii. Are ≥10 acres of wetland in the AA subject to flowithin 0.5 mile downstream of the AA (check)?	ooding AN Y	ND are man-m	nade featu	res which	may be sign	ificantly d	lamaged l	y floods loo	ated	
Comments: AA not subject to flooding via	in-cha	nnel or ove	erbank fl	ow.						
14F. Short and Long Term Surface Wate upland surface flow, or groundwater flow. If 14G.)	r Storag no wetla	e: (Applies ands in the A	to wetlan ∖A are su	ds that flo bject to fl	ood or pond ooding or p	l from ov onding,	verbank o dick [or in-chanr NA here	el flow, proce	ecipitation, eed to

<u>luturer definitions of these terms].)</u>									
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	.8Н	.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:

 \sim 65% of preservation wetlands have permanent/perennial water regime (10.8 acre x 0.65=7.02 acres), average 1 foot standing/flowing water during high water events (7.02 acresx 1 foot= 7.02 acre feet).

14G. Sediment/Nutrient/Toxica through influx of surface or groun to 14H.)								
i. Rating (working from top to be	ottom, use the matrix bel	ow to arrive at [check] the	functional points and rating	H = high, M = moderate, or L				
= low]) Sediment, nutrient, and toxicant input levels within AA	to deliver levels of compounds at levels so	iding land use with potential sediments, nutrients, or uch that other functions are	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					
		rired. Minor sedimentation, s or toxicants, or signs of		ctions are substantially impaired. of nutrients or toxicants, or signs				
% cover of wetland vegetation in AA	eutrophic ≥ 70%	ation present.	of eutrophica ≥ 70%	ation present.				
Evidence of flooding / ponding in AA								
AA contains no or restricted outlet	Yes No	Yes No	Yes No	Yes No				
	1H .8H	.7M .5M	.5M .4M	.3L .2L				
AA contains unrestricted outlet	.9H .7M	.6M .4M	.4M .3L	.2L .1L				
Comments: Evidence of floodin 14H Sediment/Shoreline Stabilization drainage, or on the shoreline of a star proceed to 14l.)	on: (Applies only if AA occ	urs on or within the banks or		or man-made here and				
proceed to 141.)								
i. Rating (working from top to bottom % Cover of wetland streambank or		arrive at [check] the functional Duration of surface water adjacent						
shoreline by species with stability ratings	Permanent / Perennial	Seasonal / Intermitt		meral				
of ≥6 (see Appendix F).		1	1	Tiordi .				
≥ 65%	1H	.9Н	.7M					
35-64%	.7M	.6M	.5M					
< 35%	.3L	.2L	.1L					
14l. Production Export/Food Ch. i. Level of Biological Activity (sy								
General Fish Habitat	General Wildlife Habitat R	Rating (14C.iii.)						
Rating (14D.iii.) E/h	H M	L						
E/H H	Н	M						
М	М	М						
L	M	L						
N/A H	M	L						
ii. Rating (Working from top to botto wetland component in the AA; Factor subsurface outlet; the final three rows [see instructions for further definitions]	B = level of biological activi pertain to duration of surfa- of these terms].)	ity rating from above (14l.i.); l ce water in the AA, where P/l	Factor C = whether or not the AAP, S/I, and T/E are as previously	contains a surface or defined, and A = "absent"				
A Vegetated component > B High Moderate	Low High	Vegetated component 1-5 acres h Moderate		omponent <1 acre loderate Low				
C Yes No Yes No	Yes No Yes	No Yes No Yes	No Yes No Yes	No Yes No				
P/P 1E .7H .8H .5M	.6M .4M .9H	.6M .7H .4M .5M	1 .3L .8H .6M .6N	.4M .3L .2L				
s/I .9H .6M .7H .4M	.5M .3L .8H	.5M .6M .3L .4M	1 .2L .7H .5M .5M	.3L .3L .2L				
T/E/A .8H .5M .6M .3L	.4M .2L .7H	.4M .5M .2L .3l	1L .6M .4M .4N	.2L .1L				
iii. Modified Rating (NOTE: Modifier plant cover, ≤ 15% noxious weed or AN control). a) Is there an average ≥ 50 foot-wide victor to the score in ii above and adjust ration. Well-vegetated uplated to the score in ii above and adjust ration.	IVS cover, and that is not so egetated upland buffer aroung accordingly: Modified	ubjected to periodic mechanion ond > 75% of the AA circumfe	cal mowing or clearing (unless fo					

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during dormant season/drought Stream is a known 'losing' stream; discharge volume decreases Wetland occurs at the toe of a natural slope Other: Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information NA Comments: Most of the preserved wetlands intercept shallow subsurface groundwater; the large wetland in the NE corner intercepts shallow groundwater and is fed by surface water from a spring that flows out of a subsurface aquifer. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously or mature (>80 yr-old) forested diversity (#13) is high or contains Replacement potential cited rare types or associations wetland or plant association listed and structural diversity (#13) is plant association listed as "S2" by as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo common rare rare common rare abundance (#11) Low disturbance at AA 1H .9H .8H .8H .5M .5M .4M .3L .6M (#12i) Moderate disturbance at .9H H8. .7M .7M .5M .4M .4M .3L .2L AA (#12i) High disturbance at AA .8H .7H .6M .6M .4M .3L .3L .2L .1L (#12i) Comments: Wetlands common in the area, low disturbance in comparison to others impacted by land mgmt; structural diversity high. 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: (check) Y $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA here and proceed to the overall summary and rating page) Check categories that apply to the AA: 🗹 Educational/scientific study; 🔲 Consumptive rec.; 🗹 Non-consumptive rec.; ___Other iii. Rating (use the matrix below to arrive at [check] the functional points and 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 051 Comments: Mitigation site with public ownership, public access, and potential for educational use. Site is being used for educational studies by students at MSU and Montana Tech. **General Site Notes** Inundation and saturation depths were higher across the preservation wetlands in 2022 as compared to 2021 due to the heavy spring precipitation.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA3 - Preservation

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.5	1	5.96	
C. General Wildlife Habitat	Н	.9	1	10.73	~
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	Н	1	1	11.92	>
G. Sediment/Nutrient/Toxicant Removal	Н	1	1	11.92	>
H. Sediment/Shoreline Stabilization	М	.7	1	8.34	
Production Export/Food Chain Support	М	.6	1	7.15	
J. Groundwater Discharge/Recharge	Н	1	1	11.92	>
K. Uniqueness	М	.6	1	7.15	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	2.38	
Totals:		6.5	9	77.48	
Percent of Possible Score		•	72.22 %		

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 Score of 1 functional point for MT Natural Heritage Program Species Habitat; or 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 Percent of possible score > 65% (round to nearest whole #).	IV)
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: (check appropriate category based on the criteria outlined above)

1 11	I IV
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MDT Montana Wetland Assessment Form (revised March 2008)

	Mountain Wetland	:	2. MDT project#	STPX 47(024)56 Control#		rol# 5034	000			
3. Evaluation Date 10/1/2			s, S Weyant, W 5.	Wetl	and/Site# (s)	AA4 - Cr	eated Cell	6		
6. Wetland Location(s): T		Fouts,	M Hickey Sec1 24	т	R		Sec2			
Approx Stationing or Milepo	osts N/A									
Watershed 2 - Upper Cla		atershe	ed/County Silver	Bow						
7. Evaluating Agency	CCI for MDT				8. Wetland	size acres	,		0.18	
Purpose of Evaluation					How assess	ed:	Measure	d e.g. by GP	S	
☐ Wetlands potentially aff	ected by MDT project				9. Assesssr				0.18	
☐ Mitigation Wetlands: pr	e-construction				(AA) size (ac	•	Measure	d e.g. by GPS	2	
✓ Mitigation Wetlands: po	est construction				110W a55655	cu.	ivicasure	a e.g. by Or v	5	
Other										
10. Classification of Wetlar	nd and Aquatic Habitats	s in AA								
HGM Class (Brinson)	Class (Cowardin)		Modifier (Coward	in)	Water Re	egime		% of AA		
Depressional	Aquatic Bed		Excavated		Seasonal/In	termittent			5	
Depressional	Emergent Wetland		Excavated		Seasonal/In	termittent		9	5	
11. Estimated Relative Abun										
 General Condition of Adi. Disturbance: (use matrix baquatic nuisance vegetation) 	pelow to determine [circle] a	appropria	ate response – see ins	tructio	ns for Montana-l	isted noxiou	ıs weed and	d		
		Monag	Predominantly		conditions adjacent		_	ivated or heavily	arozod	
		natural	I state; is not grazed, logged, or otherwise	mod	erately grazed or ha ctively logged; or ha	ayed or	or logged	; subject to subst it, grading, clearii	antial fill	
Conditions with	hin AA	conver	ted; does not contain or buildings; and noxious	subje	ect to minor clearing roads or buildings;	g; contains	hydrologi	cal alteration; hig lensity; or noxiou	h road or	
			or ANVS cover is <=15%.		d or ANVS cover is			cover is >=30%.	3 WCCu	
AA occurs and is managed in predomir grazed, hayed, logged, or otherwise co	•									
roads or occupied buildings; and noxio		lov	w disturbance	Г	low disturba	ance	mode	rate disturb	ance	
AA not cultivated, but may be moderate				Ė						
selectively logged; or has been subject placement, or hydrological alteration; c noxious weed or ANVS cover is <=30%	ontains few roads or buildings;		moderate disturbance	me	oderate distu	rbance	hig	high disturbance		
AA cultivated or heavily grazed or logg	ed; subject to relatively			Е						
substantial fill placement, grading, clea high road or building density; or noxion		hig	h disturbance		high disturba	ance	hig	h disturban	се	
>=30%.						-			•	
Comments: (types of disturb Water was observed within the			ell 6 in 2018 and 20	20. TI	his cell was dr	/ in 2019,	2021 and	2022. Wetlar	nd Cell 6	
within the old road alignment, vand well vegetated with seede	wetland construction incl	luded ex	xcavation, regrading	and ı	revegetation. T	he surrou	nding upla	nd/wetland a		
ii. Prominent noxious, aqua	tic nuisance, other exo			wccu	population ex	oto upgra		J 0011.		
	bia esula									
Cirsium arvense and Euphorl										
·	summary of AA and su	urround	ding land use/habit	at						
iii. Provide brief descriptive The AA consists of a depression commercial developments and	onal wetland and upland	buffer a	at the bottom of a ge		nillslope. Land	use surro	unding the	AA includes		

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Modified Is current management preventing (passive) existence of additional vegetated classes? Existing # of "Cowardin" Vegetated Classes in AA Ratino Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA Μ 1 dass, but not a monoculture М YES> L <NO 1 class, monoculture (1 species comprises>=90% of total cover) NA NΑ NA L Comments: Palustrine emergent wetland 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \bigcirc D \bigcirc S Secondary habitat (list Species) Incidental habitat (list species) D S **√** S No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M .3L .1L 0L Rating USFWS IPaC Sources for documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) ○ **D** • **S** Westslope Cutthroat Trout (S2) O D • S Preble's shrew (S3) Secondary habitat (list Species) ○ **D** ● **S** Hoary bat (S3), Large flowered beardtongue (S1) Incidental habitat (list species) No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] 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 .7M H8. .2L 0L 1H .6M .1L Rating S2 and S3 Species: Functional Points and .9H .7M .6M .5M .2L .1L 0L Rating

B-89

MTNHP

Sources for documented use

ubstantial (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 interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structions of scattered violations are as follows: Interviews with local biologists with knowledge of the AA iii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Structions for surface water durations are as follows: Interviews with local biologists with knowledge of the AA (see #10). Abbreviations for surface water durations are as follows: Interviews with local biologists with knowledge of the AA (see #10). Abbreviations for surface water durations are as follows: Interviews with local biologists with knowledge of the AA (see #10). Abbreviations for surface water durations are as follows: Interviews with local biologists with knowledge of the AA (see #10). Abbreviations for surface water durations are as follows: Interviews with local biologists with knowledge of the AA (see #12). Interviews with local biologists with knowledge of the AA (see #12) interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge of the AA interviews with local biologists with knowledge o	uctural diver within 20% of	of each	1	
abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. Pilltle to no wildlife sign	ge of the AA ructural diver within 20% o : P/P = er definitions Low	of each	1	
presence of extremely limiting habitat features not available in the surrounding area	uctural diverwithin 20% or P/P = er definitions	of each	1	
interviews with local biologists with knowledge of the AA interviews with local biologists with k	uctural diverwithin 20% or P/P = er definitions	of each	1	
observations of scattered wildlife groups or individuals or relatively few species during peak periods common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc. adequate adjacent upland food sources interviews with local biologists with knowledge of the AA iii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Struftom #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be wother in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: I permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further terms]) Structural diversity (see High Moderate High Moderate #13. Class cover distribution (all Even Uneven Even Uneven Uneven Burface water in ≥ P/P S/I T/E A P/	uctural diverwithin 20% or P/P = er definitions	of each	1	
observations of scattered wildlife groups or individuals or relatively few species during peak periods common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc. adequate adjacent upland food sources interviews with local biologists with knowledge of the AA iii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Struftom #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be weather in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: I permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further terms]) Structural diversity (see #13) Duration of surface water in ≥ I play I I I A P/P S/I I I A P/	within 20% of a P/P = Pr definitions Low Even	of each	1	
ii. Wildlife habitat features (Working from top to bottom, check appropriate AA attributes in matrix to arrive at rating. Stru from #13. For class cover to be considered evenly distributed, the most and least prevalent vegetated classes must be weather in terms of their percent composition of the AA (see #10). Abbreviations for surface water durations are as follows: I permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further terms]) Structural fineratity (see H13) Class cover durations are as follows: I permanent/perennial; S/I = seasonal/intermittent; T/E = temporary/ephemeral; and A = absent [see instructions for further terms]) Class cover durations for further level High Moderate #13) Class cover durations for further level High Moderate #13) Low disturbance at AA P/P S/I T/E A P/P	within 20% of a P/P = Pr definitions Low Even	of each	1	
## High Moderate High Moderate Mode	Even	A		
Even Uneven Even Uneven Even Uneven Even Uneven		A		
Duration of surface water in ≥ surface water in ≥ numbers P/P S/I T/E A P/P S/I T/E <t< td=""><td>S/I T/E</td><td>A</td><td>ł</td><td></td></t<>	S/I T/E	A	ł	
at AA (see #12i)				
disturbance at AA H H H H H H H H H H M H H M M H M M L H See #12i)	нм	м		
	M L	L		
High disturbance at AA (see #12i) M M M L M M L L M M L L L M M L L L L	LL	L		
iii. Rating (use the conclusions from i and ii above and the matrix below to arrive at [check] the functional p Evidence of wildlife use (i) Exceptional High Moderate	points and	rating	Low	<u></u>
Substantial 1E .9H .8H			.7M	L
Moderate .9H .7M .5M			.3L	
Minimal .6M .4M .2L			.1L	
Small wetland with limited value to wildlife. 4D. General Fish Habitat Rating: (Assess this function if the AA is used by fish or the existing situation is "could be used by fish [i.e., fish use is precluded by perched culvert or other barrier, etc.]. If the AA is not used estorable due to habitat constraints, or is not desired from a management perspective [such as fish entrapped NA here and proceed to 14E.)	d by fish, fi	ish use	e is not	
Habitat Quality and Known / Suspected Fish Species in AA (use matrix to arrive at [check the functional points and rat	ating)			
in AA Permanent / Perennial Seasonal / Intermittent			/ Epheme	
escape cover Opumal Adequate Poor Opumal Adequate Poor	Optimal O S	Ade	equate S	0
	.7M .6M	.5M	.4M	.3L

in AA	Permanent / Perennial					Seasonal / Intermittent					Temporary / Ephemeral							
Aquatic hiding / resting / escape cover	Opt	imal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	quate	Po	oor
Thermal cover optimal/ suboptimal	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species	1E	.9Н	.8H	.7M	.6M	.5M	.9Н	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
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	.6М	.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	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially											
ii. Modified Rating (NOTE: Modified score of a) Is fish use of the AA significantly reduced by current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuityes, reduce score in i above by 0.1: Modified	a culvert, f TMDL d sance pla	dike, or o levelopme nt or anin	other n	man-made : th listed "Pr	structure or obable Imp	aired Ús	ses" includi	ng cold or v	warm water	ne If	
b) Does the AA contain a documented spawning comments) for native fish or introduced game fi		other critic				he adjus	ted score i	ng area, etc n i or iia ab			
iii. Final Score and Rating: 0 NA	Comm	nents: No	o fish	habitat v	within AA	١.					
14E. Flood Attenuation: (Applies only to wet channel or overbank flow, click NA he				via in-chan	nel or over	bank flov	w. If wetlar	nds in AA a	re not floode	ed from in-	
 i. Rating (working from top to bottom, use the Estimated or Calculated Entrenchment (Rosge 1994, 1996) 			nched	- C, D, E	Moderat	•	enched – B	Entrend	ched-A, F, G	stream	
% of flooded wetland classified as forested and/or scrub/shrub	75°		-75%	<25%	75%	25-75		75%	25-75%	<25%	
AA contains no outlet or restricted outlet	1 	1 .	9H	.6M	.8H	.7N	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.91	Н .	8H	.5M	.7M	.6N	.4M	.3L	.2L	1L	
Slightly Entrenched ER = >2.2			•	Entrenched	ı			Entrenched			7
C stream type D stream type E stream	n type		B strea	am type	A	stream ty	pe	F stream ty	rpe G	stream type	
2 x Bankfull D	epth 🗽		tfull D	Depth	- 14 H	В	ankfull Wi				
Floodprone width	wi	inkfull dth					ratio	nchment			
ii. Are ≥10 acres of wetland in the AA subject t within 0.5 mile downstream of the AA (check)?	Y ()	N (<u> </u>								
Comments: AA subject to flooding is I toward the railroad tracks.	ess thai	n 10 acı	res. I	Depressi	onal wetl	and re	stricts di	scharge (or drainag	je to the e	east
14F. Short and Long Term Surface Waupland surface flow, or groundwater flow. 14G.)	If no we	etlands i	n the	AA are su	bject to fl	oo ding '	or pondin	g, dick	NA here	and proce	eed to
 Rating (Working from top to bottom, user durations are as follows: P/P = perfurther 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 acr	e feet			1.1	o 5 acre feet			≤1 acre foot	
Duration of surface water at wetlands within the AA	P/P	S	/I	T/E	P/F	,	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond ≥ 5 out of 10 years	1H	.9	н	.8Н	.8	н	.6M	.5M	.4M	.3L	.2L

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	.8Н	.8Н	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9Н	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: This wetland is subject to ponding from precipitation, and upland surface flow.

14G . Sedime nt/Nutrient/Toxica nt through influx of surface or ground v to 14H.)				
i. Rating (working from top to botte	om, use the matrix below	to arrive at [check] the	functional points and rating [H	H = high, M = moderate, or L
= low]) Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding to deliver levels of sed compounds at levels such not substantially impaired sources of nutrients or eutrophicatio	iments, nutrients, or that other functions are d. Minor sedimentation, toxicants, or signs of	Waterbody on MDEQ list of w development for "probable conutrients, or toxicants or AA rec with potential to deliver high lev compounds such that other funct Major s edimentation, sources of of eutrophical	auses" related to sediment, seives or surrounding land use vels of sediments, nutrients, or tions are substantially impaired. f nutrients or toxicants, or signs
% cover of wetland vegetation in AA Evidence of flooding / ponding in AA	≥ 70%	< 70%	≥ 70%	< 70 %
	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: No sedimentation ob 14H Sediment/Shoreline Stabilization drainage, or on the shoreline of a standing proceed to 14I.)		on or within the banks or a		man-made ere and
i. Rating (working from top to bottom, to % Cover of wetland streambank or		e at [check] the functional tion of surface water adjacent to		
shoreline by species with stability ratings of ≥6 (see Appendix F).	Permanent / Perennial	Seasonal / Intermitte		neral
≥ 65%	1H	.9H	.7M	
35-64%	.7M	.6M	.5M	
< 35%	.3L	.2L	.1L	
14l. Production Export/Food Chain	n Support:		or ponded water is present.	
	eneral Wildlife Habitat Ratio			
Rating (14D.iii.) E/H	M	L		
E/H H	Н	M		
IVI		M		
L M	M	L		
ii. Rating (Working from top to bottom, wetland component in the AA; Factor B subsurface outlet; the final three rows pe [see instructions for further definitions of	, use the matrix below to arri = level of biological activity r ertain to duration of surface v	ive at [check] the functional rating from above (14I.i.); F	actor C = whether or not the AA	contains a surface or
A Vegetated component >5 ac B High Moderate		Vegetated component 1-5 acres Moderate		mponent <1 acre
C Yes No Yes No	Yes No Yes No		No Yes No Yes	No Yes No
P/P 1E .7H .8H .5M	.6M .4M .9H .6N	.7H .4M .5M	.3L .8H .6M .6M	.4M .3L .2L
S/I .9H .6M .7H .4M	.5M .3L .8H .5M	.6M .3L .4M	.2L .7H .5M .5M	.3L .3L .2L
T/E/A 8H .5M .6M .3L	.4M .2L .7H .4N	.5M .2L .3L	.1L .6M .4M .4M	.2L .1L
iii. Modified Rating (NOTE: Modified s plant cover, ≤ 15% noxious weed or ANVS control). a) Is there an average ≥ 50 foot-wide vege to the score in ii above and adjust rating to the score in ii above as 50-foot buff.	S cover, and that is not subject that unland buffer around it	ected to periodic mechanicates > 75% of the AA circumfer	al mowing or clearing (unless for	

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during domant season/drought Stream is a known 'losing' stream; discharge volume decreases Wetland occurs at the toe of a natural slope Other: Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: Seasonally high groundwater iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .4M .1L .7M Insufficient Data/Information NA Comments: Wetland with seasonal surface water supported by runoff and precipitation, and likely seasonally high groundwater. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously Replacement potential or mature (>80 yr-old) forested diversity (#13) is high or contains cited rare types or associations wetland or plant association listed and structural diversity (#13) is plant association listed as "S2" by as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo common rare rare common rare abundance (#11) Low disturbance at AA 1H .9H H8. .8H .6M .5M .5M .4M .3L (#12i) Moderate disturbance at .9H H8. .7M .7M .5M .4M .4M .3L .2L AA (#12i) High disturbance at AA .8H .7H .6M .6M .4M .3L .3L .2L .1L (#12i) Comments: Wetlands of this type are abundant in the area but have low disturbance in comparison to others impacted by land management 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: (check) Y $N \odot$ (if 'Yes' continue with the evaluation; if 'No' then click **V** NA here and proceed to the overall summary and rating page) Check categories that apply to the AA: Educational/scientific study; Consumptive rec.; Non-consumptive rec.; ___Other iii. Rating (use the matrix below to arrive at [check] the functional points and 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 051 Comments: Site is very close to active railroad tracks and currently difficult to access unless you walk in from the west side. Unlikely this site will be used for recreation or education. **General Site Notes** The hydrologic source for this cell appears to have been disrupted and the wetland size has subsequently decreased.

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.5	1	0.09	✓
C. General Wildlife Habitat	М	.4	1	0.07	✓
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	NA	0	0	0.00	
F. Short and Long Term Surface Water Storage	L	.2	1	0.04	
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	0.13	✓
H. Sediment/Shoreline Stabilization	L	.2	1	0.04	
Production Export/Food Chain Support	М	.4	1	0.07	
J. Groundwater Discharge/Recharge	М	.7	1	0.13	✓
K. Uniqueness	L	.3	1	0.05	
L. Recreation/Education Potential (bonus points)	NA	0	NA	0.00	
Totals:		3.4	9	0.61	
Percent of Possible Score		·	37.78 %		

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 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 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: (check appropriate category based on the criteria outlined above)

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MDT Montana Wetland Assessment Form (revised March 2008)

	n Mountain Wetland Ition Site		2. MDT pr	oject#	ST	PX 47(024)56		Con	strol# 5034000
3. Evaluation Date 2/6/2	4. Evaluators	R. Jon	es	5.	Wetl	and/Site# (s)	AA5 - Es	tablishm	ent along Sand Cree
. Wetland Location(s): T	3N R 9	W	Sec1	24	Т	R		Sec2	
Approx Stationing or Milep	osts N/A								
/atershed 2 - Upper C	ark Fork Wa	atershe	ed/County	Silver	Bow				
Evaluating Agency	CCI for MDT					8. Wetland	size acres	;	2.26
Purpose of Evaluation						How assess	ed:	Measur	ed e.g. by GPS
☐ Wetlands potentially at	fected by MDT project					9. Assesssi			4.09
☐ Mitigation Wetlands: p	re-construction					(AA) size (ad How assess	•	Moosura	ed e.g. by GPS
✓ Mitigation Wetlands: p	ost construction					HOW assess	eu.	Measure	ed e.g. by GF3
☐ Other									
10. Classification of Wetla	nd and Aquatic Habitats	s in ΔΔ							
HGM Class (Brinson)	Class (Cowardin)		Modifier	(Coward	in)	Water R	egime		% of AA
iverine	Scrub-Shrub Wetland			<u> </u>		Permanent/			28
epressional	Emergent Wetland					Permanent/	Perennial		27
iverine	Rock Bottom					Permanent/	Perennial		45
	I]] [
] [
General Condition of A i. Disturbance: (use matrix aquatic nuisance vegetation	below to determine [circle] a	ppropria	ate response			ns for Montana-l			
Conditions w	ithin AA	natura hayed, conver roads	ged in predomin I state; is not g , logged, or othe rted; does not of or buildings; and or ANVS cover	razed, nerwise contain nd noxious	mode select subject few r	I not cultivated, but erately grazed or h ctively logged; or h ect to minor clearin roads or buildings; d or ANVS cover is	ayed or as been g; contains noxious	or logge placeme hydrolog building	Itivated or heavily grazed id; subject to substantial fill ent, grading, clearing, or gical alteration; high road or density; or noxious weed 6 cover is >=30%.
AA occurs and is managed in predom	inantly natural state: is not								
roads or occupied buildings; and noxi	onverted; does not contain	lo	w disturba	ance		low disturba	ance	mod	erate disturbance
roads or occupied buildings; and noxi <=15%. AA not cultivated, but may be modera selectively logged; or has been subject placement, or hydrological alteration;	onverted; does not contain ous weed or ANVS cover is tely grazed or hayed or ot to relatively minor clearing, fill contains few roads or buildings;		w disturba moderate disturbanc	•	mo	low disturba			erate disturbance
oads or occupied buildings; and noxi <=15%. AA not cultivated, but may be modera selectively logged; or has been subjectolacement, or hydrological alteration; noxious weed or ANVS cover is <=30' AA cultivated or heavily grazed or log substantial fill placement, grading, cle nigh road or building density; or noxion	onverted; does not contain ous weed or ANVS cover is tely grazed or hayed or at to relatively minor clearing, fill contains few roads or buildings; %.		moderate	ce	H		ırbance	hi	
oads or occupied buildings; and noxi <=15%. A not cultivated, but may be modera selectively logged; or has been subjectively grazed or logged. A cultivated or heavily grazed or logged substantial fill placement, grading, cleaning road or building density; or noxion=30%. Omments: (types of distur	onverted; does not contain ous weed or ANVS cover is tely grazed or hayed or at to relatively minor clearing, fill contains few roads or buildings; %. ged; subject to relatively aring, or hydrological alteration; ous weed or ANVS cover is bance. intensity. seasor	hig	moderate disturbanc	ce	H	oderate distu	ırbance	hi	gh disturbance
roads or occupied buildings; and noxi <=15%. AA not cultivated, but may be modera selectively logged; or has been subject placement, or hydrological alteration; noxious weed or ANVS cover is <=30' AA cultivated or heavily grazed or log substantial fill placement, grading, clehigh road or building density; or noxio >=30%. Comments: (types of disturailroad, bike path, roadways)	onverted; does not contain ous weed or ANVS cover is tely grazed or hayed or at to relatively minor clearing, fill contains few roads or buildings; %. ged; subject to relatively aring, or hydrological alteration; ous weed or ANVS cover is bance. intensity. seasor and driveways, parking a	hig n. etc)	moderate disturband gh disturba	ce	H	oderate distu	ırbance	hi	gh disturbance
grazea, nayea, logged, or otherwise croads or occupied buildings; and noxi <=15%. AA not cultivated, but may be modera selectively logged; or has been subjet placement, or hydrological alteration; noxious weed or ANVS cover is <=30' AA cultivated or heavily grazed or log substantial fill placement, grading, cle high road or building density; or noxio >=30%. comments: (types of disturailroad, bike path, roadways i. Prominent noxious, aqua Centaurea stoebe	onverted; does not contain ous weed or ANVS cover is tely grazed or hayed or at to relatively minor clearing, fill contains few roads or buildings; %. ged; subject to relatively aring, or hydrological alteration; ous weed or ANVS cover is bance. intensity. seasor and driveways, parking a	hig n. etc)	moderate disturband gh disturba	ce	H	oderate distu	ırbance	hi	gh disturbance

13. Structural Diversity: (based on number of "Cowardin" vegetated classes present [do not include unvegetated classes], see #10 Initial Is current management preventing (passive) Modified Existing # of "Cowardin" Vegetated Classes in AA Ratino existence of additional vegetated classes? Rating >= 3 (or 2 if 1 is forested) classes NA NΑ Н 2 (or 1 if forested) classes NA NΑ NA М 1 dass, but not a monoculture М YES> L <NO 1 class, monoculture (1 species comprises>=90% of total cover) NΑ NΑ NA Comments: AA inlcudes Sand Creek, PEM, and scrub-shrub (willow dominated) wetlands 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) D S \bigcirc D \bigcirc S Secondary habitat (list Species) Incidental habitat (list species) D S **√** S No usable habitat ii. Rating (use the condusions from i above and the matrix below to arrive at [check] the functional points and rating) Highest Habitat Level doc/primary sus/primary doc/secondary sus/secondary doc/incidental sus/incidental None Functional Points and 1H .9H .8H .7M 31 .1L 0L Rating **USFWS IPaC** Sources for documented use 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 (check one based on definitions contained in instructions): Primary or critical habitat (list species) ○ **D** ● **S** Westslope cutthroat trout (S2) Hoary bat (S3) Secondary habitat (list Species) ○ D • S ○ **D** ● **S** Hoary bat (S3), Large flowered beardtongue (S1) Incidental habitat (list species) S No usable habitat ii. Rating (use the conclusions from i above and the matrix below to arrive at [check] the functional points and rating) sus/primary Highest Habitat Level doc/primary doc/secondary sus/secondary doc/incidental sus/incidental None S1 Species: Functional Points and .7M .2L 0L 1H .8H .6M .1L Rating S2 and S3 Species: Functional Points and .9H .7M .6M .5M .2L .1L 0L Rating

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MTNHP Environmental Summary

Sources for documented use

u bstantial (based	d on any	of the	followin	ıq [che	:ck]):						Minii	mal (t	based or	n any of	f the follo	owing	[check]) :	IVIOG.	lerate		
observations	-					s diver	rsity (du	ıring ar	ny period	(L				-	rvations		-		riods			
abundant wild	Ilife sign	such a	ıs scat, '	tracks.	, nest st	ructure	s, gam	e trails	, etc.		lit	tle to r	no wildlif	fe sign								
presence of ex	xtremely	limitine	g habita	at featu	res not	availat	ale in th	ie surrc	ounding	area	SI	parse	adjacen	it upland	d food so	ources	à					
interviews with	h local bi	ologist	s with k	(nowle	dge of t	ne AA					in	ıtervie	ws with	local bir	iologists	with k	nowled	ge of th	ne AA			
oderate (based o	-																					
observations o			•					•		•		riods										
common occu			_		s scat, t	racks, r	nest str	uctures	s, game	trails, e	tc.											
dequate adja					· - of t																	
interviews with) locai ni	ologisis	3 WILLI N	nowiec	ige oi u	IE AA																
i i. Wildlife habi																						
from #13. For o	class co	over to	o be co	onside	ered ev	enly di	distribut	ited, th	he most	st and le	least pr	revale	ent veg	getated	d classe	ses mu	ust be	within	n 20% of			
other in terms o permanent/pere																				of thes	20	
terms])	Дины., ————	»/I	eass.	aı,	Allins.	11,	:	Ipo.	у/ор.		anu.	· - · ·	Sen.		lruo	15	lura.	- uc.	Illion	or unc.	е	
Structural diversity (see				Hig	gh					_	_	Mod	derate	_	_	_ /		L	_ow			
#13) Class cover									\vdash				Г									
distribution (all vegetated		Eve	an			Unev	ven			Eve	∍n		1	Unev	ven	ļ		E	Even			
classes)									↓			 '	—	т—								
Duration of surface water in ≥	P/P	S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	Α	P/P	S/I	T/E	А	P/P	S/I	T/E	A		
10% of AA Low disturbance												<u>—</u> '		\vdash	Щ'	 						
Low disturbance at AA (see #12i)	Е	E	Е	н	Е	Е	Н	н	Е	Н	Н	М	E	н	М	М	Е	Н	М	М		
Moderate			1,,		i J					H H M M H M M					., 1	M						
disturbance at AA (see #12i)	Н	Н	Н	Н	Н	Н	Н	М	Н	Н	М	М	Н	M	М	L	Н	M	L	L		
High disturbance at AA (see #12i)	М	М	М	L	М	м	L	L	М	М	L		М		L	L	L	L	L	L		
11 MM (662		_			\longrightarrow																	
iii. Rating (u	use <u>the</u>	conc	clu <u>sio</u>	ns <u>fr</u> c	om <u>i a</u>	nd <u>ii</u> ε	abo <u>ve</u>	a <u>nd</u> f	the <u>m</u> a	atri <u>x b</u>	elo <u>w</u> t	o <u>arr</u>	ive <u>at</u>	[chec	k] <u>the</u>	func†	tion <u>al</u>	po <u>int</u>	s a <u>nd</u>	rat <u>ing</u>)	1	
Evidence of w															s rating							
				F	Except	ional		L		High		_				derate	е				Low	
Substantial					1E					.9F	н					.8H					.7M	
Moderate					.91					.7N	М					.5M					.3L	
Minimal			+		.6M	- 6		\vdash		.4N						.2L	1				.1L	十
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omments	Excel	ilent r	neotro	pical	l migra	ant ha	bitat															
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-1.5	• • • •											٠. ر	41	٠.,			. 4		٠.,		1.44	-
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ould be used b	by fish	[i.e., 1	fish us	ıse is	preclu	uded l	by per	rched	d culve	ert or o	other b	barrie	er, etc.	.]. If th	he AA	is no	ot used	d by f	fish, fis	sh use	e is not	
4D. General F ould be used bestorable due f	by fish to habi	[i.e., i	fish us onstrai	use is aints, o	preclu or is n	uded l	by per esired	rched	d culve	ert or o	other b	barrie	er, etc.	.]. If th	he AA	is no	ot used	d by f	fish, fis	sh use	e is not	
ould be used bestorable due t	by fish to habi	[i.e., i	fish us onstrai	use is aints, o	preclu or is n	uded b not de	by per esired	rched	d culve	ert or o	other b	barrie	er, etc.	.]. If th	he AA	is no	ot used	d by f	fish, fis	sh use	e is not	
ould be used bestorable due t	by fish to habi and pro	[i.e., t itat co oceed	fish us onstrai d to 14	use is aints, o 4E.)	preclu or is n Cold	uded b not des d Wat	by per esired iter	erched from	d culve a man	ert or o nagem	other b	barrie erspe	er, etc. ective	.]. If th [such	he AA n as fis	is no shent	ot used trappe	d by f ed in a	fish, fis	sh use	e is not	
ould be used bestorable due to NA here a Habitat Qua	by fish to habi and pro	[i.e., t itat co oceed	fish us onstrai d to 14	use is aints, o 4E.)	or is n Cold	uded benot des	by peresired	erched from	d culve a man	ert or o nagem	other b	barrie berspe	er, etc. ective	.]. If the [such	the AA n as fis	is no shent	ot used trappe	d by f ed in a	fish, fis a cana	sh use al], ther	e is not en check	
ould be used bestorable due to NA here a Habitat Qua	by fish to habit and pro	[i.e., t itat co oceed	fish us onstrai d to 14	use is a ints, of 4E.) Suspec	or is n Cold	uded benot desid Watership	by peresired ter	erched from	d culve a man	ert or o nagem	other b	barrie berspe	er, etc. ective	.]. If the [such	he AA n as fis	is no sh ent points	ot used trappe	d by f ed in a	fish, fis a cana	sh use al], ther	e is not en check	
ould be used bestorable due to NA here a Habitat Qua	by fish to habit and pro	[i.e., t itat co oceed	fish us onstrai d to 14	use is a ints, of 4E.) Suspec	or is n Cold	uded benot des	by peresired ter	erched from	d culve a man	ert or o nagem	other b	barrie berspe	er, etc. ective	.]. If the [such he func	he AA n as fis	is no shent	ot used trappe	d by f ed in a	fish, fis a cana Tem	sh use al], ther	e is not en check	
ould be used bestorable due of NA here a Habitat Qua Duration of surface in AA Aquatic hiding / res	by fish to habit and pro- and pro- ality and ce water	[i.e., fitat co	fish us onstrai d to 14	use is a ints, of 4E.) Suspec	or is n Cold	uded I	by peresired ter	erched from	d culve a man	ert or o nagem	other benent pe	e at [c	er, etc. ective	.]. If the [such he func	he AA n as fis	is no	ot used trappe	ed by fed in a	fish, fis a cana Tem	sh use al], ther	e is not en check	al
ould be used bestorable due to NA here a NA he	by fish to habit and pro- ce water esting /	[i.e., fitat co	fish us onstraid d to 14 bwn / S	use is aints, (4E.) Suspection	or is n Cold	uded I	by peresired ter	from s in AA	d culve a man	ert or on agem	other bonent pe	barrie erspe e at [c	er, etc. ective checkth	.]. If the such	he AA n as fis	points	ot used trappe	d by fed in a	fish, fis a cana Tem	sh use	e is not en check	ral Po

											Optir		Aded			or
S	0	S	0	S	0	S	0	S	0	S	0	S	0	S	0	S
.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L
	.8H	.8H .7M	.8H .7M .6M .7M .6M .5M	.8H .7M .6M .5M	.8H .7M .6M .5M .5M .7M .6M .5M .5M .4M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .5M .4M .7M	.8H .7M .6M .5M .5M .8H .7M .7M .6M .5M .5M .4M .7M .6M	.8H .7M .6M .5M .5M .8H .7M .6M .7M .6M .5M .5M .4M .7M .6M .5M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .7M .6M .5M .5M .4M .7M .6M .5M .4M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .4M .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M .3L	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .4M .6M .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M .3L .5M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .4M .6M .5M .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .4M .6M .5M .4M .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M .3L .5M .4M .3L	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .4M .4M .6M .5M .4M .3L .7M .6M .5M .5M .4M .7M .6M .5M .4M .4M .3L .5M .4M .3L .2L	.8H .7M .6M .5M .5M .8H .7M .6M .5M .4M .6M .5M .4M .3L .2L .7M .6M .5M .5M .4M .7M .6M .5M .4M .3L .5M .4M .3L .2L .2L

Sources used for identifying fish sp. potentially f	ound in A	A <i>:</i>								
ii. Modified Rating (NOTE: Modified score ca a) Is fish use of the AA significantly reduced by a current final MDEQ list of waterbodies in need of fishery or aquatic life support, or do aquatic nuis yes, reduce score in i above by 0.1: Modified	a culvert, d f TMDL de ance plan	dike, or othe evelopment	er man-made with listed "P	structure o robable Im	paired (Jses" includ	ing cold or	warm water	ne If	
b) Does the AA contain a documented spawning comments) for native fish or introduced game fis	_	ther critical Y			the adju	usted score	•			
iii. Final Score and Rating: 6 M	Commo	ents: Pote	ntial habita	t for We	stslop	e Cutthro	at Trout			
-										
14E. Flood Attenuation: (Applies only to wetl channel or overbank flow, click NA her		ect to floodi		nel or ove	rbank flo	ow. If wetla	nds in AA a	re not floode	d from in-	
i. Rating (working from top to bottom, use the	matrix bel	low to arrive	at [check] th	e functiona	l points	and rating)				
Estimated or Calculated Entrenchment (Rosge 1994, 1996)	n Sligh	tly entrench stream ty	ed - C, D, E	II .	tely ent	renched – E	Entren	ched-A, F, G types	stream	
% of flooded wetland classified as forested and/or scrub/shrub	75%			75%	25-7	-	6 75%	25-75%	<25%	
AA contains no outlet or restricted outlet	1H	.9F	1 .6M	.8H	.7	M .5M	1 .4M	.3L	.2L	
AA contains unrestricted outlet	.91	.8H	.5M	.7M	.61	M .4N	1 .3L	.2L	.1L	
Slightly Entrenched		Moderat	ely Entrenche	i			Entrenched			٦
ER = >2.2 C stream type	n type		= 1.41 – 2.2 tream type	A	stream		ER = 1.0 – 1. F stream to		stream type	-
	==	7-			_			1		
2 x Bankfull D	epth 🗽	Bankful	AND DESCRIPTION OF THE PARTY OF	14	₩ĵ	Flood-pr Bankfull W	one Width			
Floodprone 17	/ Bar	nkfull Ith			12	= Entre	nchment	1.4166	666666666666666666666666666666666666666	67
ii. Are ≥10 acres of wetland in the AA subject to	flooding	AND are ma	an-made feat	ures which	may be		y damaged	by floods loo	ated	
within 0.5 mile downstream of the AA (check)? Comments: The Sand Creek channel is	Y () s more e	N (●) entrenche	d in some	places tl	han in	others.				
14F. Short and Long Term Surface Wa upland surface flow, or groundwater flow. 14G.) i. Rating (Working from top to bottom, uplands)	If no we	tlands in th	ne AA are su	ubject to fl	loo ding	orpondin	g, dick	NA here	and proce	eed to
water durations are as follows: P/P = perr 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 fe	et		1.1	1 to 5 acre fee	t		≤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	.8	ВН	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7	7M	.5M	.4M	.3L	.2L	.1L

Comments: Overbankflow more likely at the upstream end of Sand Creek.

i. Rating (working from top to botted botte	tom, use tl	he matrix l	pelow to a	arrive at [check] th				
Sediment, nutrient, and toxicant input levels within AA	to de compou	eliver le vels nds at levels	of sedimer s such that	nd use with potential nts, nutrients, or t other functions are nor sedimentation,	developm nutrients, or with potentia	on MDEQ list of wa ent for "probable cal toxicants or AA rece I to deliver high leve ach that other function	uses" related to eives or surrou els of sediments	osediment, nding land use s, nutrients, or
	sourc		nts or toxic hication pr	cants, or signs of esent.	Major sedime	ntation, sources of r of eutrophication		icants, or signs
% cover of wetland vegetation in AA Evidence of flooding / ponding in AA	≥ 7	70%		< 70%	≥	70%		70%
<i>c</i> , <i>c</i>	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
Railraod and roadwa						or other <u>nat</u> ural or r	man-made	
Irainage, or on the shoreline of a standi proceed to 14I.) Rating (working from top to bottom,	ing water bo	ody which is	s subject to arrive at	o wave action. If 14h [check] the functiona	I does not apply,	click NA he		
% Cover of <u>wetland</u> streambank or shoreline by species with stability ratings				of surface water adjacen				
of ≥6 (see Appendix F).	Permane	ent / Perennia	l	Seasonal / Intermit	tent	Temporary / Epheme	ral	
65%		1H		.9H		.7M		
5-64%		.7M		.6M		.5M		
35%		.3L		.2L		.1L		
44.5.1	n Support:							
l	hesis of wile	llife Habita						
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H	hesis of wile	Ilife Habita M		14C.iii.)				
i. Level of Biological Activity (synth General Fish Habitat Ge	hesis of wile	llife Habita						
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H H	hesis of wile	Hife Habita		14C.iii.) L				
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H	hesis of wile	H H M		M M				
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H E/H M L N/A I. Rating (Working from top to bottom vetland component in the AA; Factor B ubsurface outlet; the final three rows proceed instructions for further definitions of the see	, use the m = level of bertain to du	Hife Habita M H M M M watrix below iological ac ration of suns].)	to arrive a tivity rating	M L It [check] the function g from above (14l.i.);	Factor C = whet	ner or not the AA co ire as previously de Vegetated com	ontains a surfa fined, and A =	ice or
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H E/H M L N/A Rating (Working from top to bottom vetland component in the AA; Factor B ubsurface outlet; the final three rows penere instructions for further definitions of the series of the serie	, use the m = level of bertain to du f these term cres	Hife Habita M H M M M watrix below iological ac ration of suns].)	to arrive a tivity rating face wate	M M L It [check] the function g from above (14l.i.); or in the AA, where Patated component 1-5 acres	Factor C = whet P, S/I, and T/E a	ner or not the AA co are as previously de Vegetated com High Mode	ontains a surfa fined, and A =	ace or : "absent"
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H B/H B/H B/H B/H B/H B/H B/H	, use the m = level of bertain to du f these term cres	Hife Habita M H M M M atrix below iological ac ration of suns].)	to arrive a tivity rating face wate	M M L L It [check] the functior g from above (14I.i.); er in the AA, where P, tated component 1-5 acres Moderate Yes No Ye	Factor C = whet P, S/I, and T/E a	vegetated com High Mode	ontains a surfa fined, and A = ponent <1 acre erate	Low No
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H B/H B/H B/H B/H B/H B/H B/H	, use the m = level of b ertain to du f these tern cres	Hife Habita M H M M M watrix below iological ac ration of suns].)	to arrive a tivity rating face wate	M M L L It [check] the function g from above (14I.i.); er in the AA, where P, tated component 1-5 acres Moderate Yes No Ye 7.7H .4M .5	Factor C = whet /P, S/I, and T/E a	vegetated com High Model No Yes 1 .6M .6M	ontains a surfa fined, and A = ponent <1 acre erate No Yes	Low No .2L
i. Level of Biological Activity (synth General Fish Habitat Rating (14D.iii.) E/H B/H B/H B/H B/H B/H B/H B/H	, use the m = level of b level to the term cres Low Yes 1 .5M .5	Hife Habita M H M M M atrix below iological ac ration of suns].) No Yes M 9H	to arrive a tivity rating face wate	M M L L It [check] the function g from above (14I.i.); er in the AA, where P, tated component 1-5 acres Moderate Yes No Ye 7.7H .4M .5	Factor C = whet P, S/I, and T/E a	Vegetated com High Model No Yes H .6M .6M	ontains a surfa fined, and A = ponent <1 acre erate No Yes .4M .3L	Low No .2L .2L

B-99

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators Permeable substrate present without underlying impeding layer The AA is a slope wetland Springs or seeps are known or observed Wetland contains inlet but no outlet Vegetation growing during domant season/drought Stream is a known 'losing' stream; discharge volume decreases Wetland occurs at the toe of a natural slope Other Seeps are present at the wetland edge AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Shallow water table and the site is saturated to the surface Other: iii. Rating (use the information from i and ii above and the table below to arrive at [check] the functional points and rating) Duration of saturation at AA Wetlands <u>FROM GROUNDWATER</u> <u>DISCHARGE OR WITH WATER</u> THAT IS RECHARGING THE GROUNDWATER SYSTEM Criteria P/P S/I None Groundwater Discharge or Recharge 1H .7M .4M .1L Insufficient Data/Information NA Comments: high water table present 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [check] the functional points and rating) AA does not contain previously AA contains fen, bog, warm springs cited rare types and structural AA does not contain previously Replacement potential or mature (>80 yr-old) forested diversity (#13) is high or contains cited rare types or associations wetland or plant association listed and structural diversity (#13) is plant association listed as "S2" by as "S1" by the MTNHP the MTNHP low-moderate Estimated relative abundant abundant abundant commo rare common rare rare common abundance (#11) Low disturbance at AA 1H .9H .8H .8H .5M .5M .4M .3L .6M (#12i) Moderate disturbance at .9H H8. .7M .7M .5M .4M .4M .3L .2L AA (#12i) High disturbance at AA .2L .8H .7H .6M .6M .4M .3L .3L .1L (#12i) Comments: Habitat types range from an perennial lotic systems to shurb-dominated wetlands. 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: (check) Y $N\bigcirc$ (if 'Yes' continue with the evaluation; if 'No' then click NA here and proceed to the overall summary and rating page) Check categories that apply to the AA: 🗹 Educational/scientific study; 🔲 Consumptive rec.; 🗹 Non-consumptive rec.; Other iii. Rating (use the matrix below to arrive at [check] the functional points and 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 051 Comments: Mitigation site with public ownership, public access, and potential for educational use. Site is being used for educational studies by students at MSU and Montana Tech. **General Site Notes** This AA was added in 2022 to capture several wetland areas delineated adjacent to the stream channel and in areas where pre-project wetlands have expanded (creation wetlands).

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.5	1	2.05	
C. General Wildlife Habitat	Н	.9	1	3.68	✓
D. General Fish Habitat	М	.6	1	2.45	
E. Flood Attenuation	Н	.9	1	3.68	✓
F. Short and Long Term Surface Water Storage	М	.7	1	2.86	
G. Sediment/Nutrient/Toxicant Removal	М	.7	1	2.86	
H. Sediment/Shoreline Stabilization	Н	1	1	4.09	V
Production Export/Food Chain Support	Н	.8	1	3.27	
J. Groundwater Discharge/Recharge	Н	1	1	4.09	✓
K. Uniqueness	М	.6	1	2.45	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	0.82	
Totals:		7.9	11	32.31	
Percent of Possible Score			71.82 %		

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 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 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: (check appropriate category based on the criteria outlined above)

ı	II	III	IV

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Achillea millefolium	Common Yarrow	FACU
Agoseria glauca	Pale Goat Chicory	FAC
Agropyron cristatum	Crested Wheatgrass	UPL
Agrostis stolonifera	Spreading Bent	FAC
Algae, green	Algae, green	N/A
Alisma plantago-aquatica	Eurpean Water-Plantain	OBL
Alllium cernuum	Nodding Onion	FACU
Alnus incana	Speckled Alder	FACW
Alopecurus aequalis	Short-Awn Meadow-Foxtail	OBL
Alopecurus arundinaceus	Creeping Meadow-Foxtail	FAC
Alopecurus pratensis	Field Meadow Foxtail	FAC
Alyssum alyssoides	Pale or Yellow Alyssum	UPL
Alyssum desestorum	Dwarf Alyssum	UPL
Antennaria neglecta	Field Pussytoes	FACU
Artemisia campestris	Pacific Wormwood	FACU
Artemisia frigida	Fringed Sage	UPL
Artemisia ludovicinana	White Sagebrush	FACU
Artemisia tridentata	Big Sagebrush	UPL
Astragalus agrestis	Cock's-Head/Purple Milkvetch	FACW
Astragalus bisulcatus	Two-Grooved Milkvetch	UPL
Astragalus cicer	Chickpea Milkvetch	UPL
Astragalus miser	Milkvetch	UPL
Bassia scoparia	Mexican-Fireweed	FAC
Beckmannia syzigachne	American Slough Grass	OBL
Bidens cernua	Nodding Burr-Marigold	OBL
Bromus inermis	Smooth Brome	UPL
Bromus japonicus	Japanese Brome	UPL
Bromus tectorum	Cheatgrass	UPL
Calamagrostis canadensis	Bluejoint	FACW
Camelina microcarpa	Little-Pod False Flax	FACU
Cardaria draba	Whitetop	UPL
Carex aquatilis	Leafy Tussock Sedge	OBL
Carex filifolia	Thread-leaved Sedge	UPL
Carex nebrascensis	Nebraska Sedge	OBL
Carex pellita	Woolly Sedge	OBL
Carex praegracilis	Clustered Field Sedge	FACW
Carex praticola	Northern Meadow Sedge	FACW
Carex simulata	Analogue Sedge	OBL
Carex utriculata	Northwest Territory Sedge	OBL
Catabrosa aquatica	Water Whorl Grass	OBL
Centaurea stoebe	Spotted Knapweed	UPL
Chaenactis douglasii	Douglas's Dustymaiden	UPL
Chenopodium album	Lamb's-Quarters	FACU
Cicuta douglasii	Western Water-Hemlock	OBL

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Cirsium arvense	Canadian Thistle	FAC
Cirsium foliosum	Elk Thistle	FAC
Cirsium scariosum	Meadow Thistle	FAC
Collomia linearis	Narrow-Leaf Mountain-Trumpet	FACU
Crepis runcinata	Fiddleleaf Hawk's Beard	FACU
Crepis tectorum	Narrowleaf Hawksbeard	UPL
Cyrtorhyncha cymbalaria	Alkali Buttercup	OBL
Dasiphora fruticosa	Golden-Hardhack	FAC
Deschampsia caespitosa	Tufted Hair Grass	FACW
Descurainia richardsonii	Western Tansy Mustard	UPL
Descurainia sophia	Herb Sophia	UPL
Distichlis spicata	Coastal/Inland Saltgrass	FACW
Eleocharis palustris	Common Spike-Rush	OBL
Elymus canadensis	Nodding Wild Rye	FAC
Elymus lanceolatus	Streamside Wild Rye	FACU
Elymus repens	Creeping Wild Rye	FAC
Elymus trachycaulus	Slender Wild Rye	FAC
Epilobium ciliatum	Fringed Willowherb	FACW
Equisetum arvense	Field Horsetail	FAC
Equisetum laevigatum	Smooth Scouring-Rush	FACW
Ericameria nauseosa	Rubber Rabbitbrush	UPL
Erigeron sp.	Fleabane	N/A
Erysimum inconspicuum	Small-flowered Wallflower	UPL
Euphorbia esula	Leafy Spurge	UPL
Festuca ovina	Sheep Fescue	UPL
Filago arvenvis	Field Cudweed	UPL
Geum macrophyllum	Large-Leaf Avens	FAC
Glyceria grandis	American Manna Grass	OBL
Glyceria striata	Fowl Manna Grass	OBL
Grindelia squarrosa	Curly-Cup Gumweed	FACU
Gutierrezia sarothrae	Matchbrush	UPL
Hesperostipa comata	Needle-and-Thread	UPL
Heterotheca villosa	Hairy Golden Aster	UPL
Hordeum brachyantherum	Meadow Barley	FACW
Hordeum jubatum	Fox-Tail Barley	FAC
Hyoscyamus niger	Black Henbane	UPL
Ionactis alpina	Crag Aster	UPL
Iris missouriensis	Rocky Mountain Iris	FACW
Juncus balticus	Baltic Rush	FACW
Juncus bufonius	Toad Rush	FACW
Juncus effusus	Lamp Rush	FACW
Juncus longistylis	Long-Style Rush	FACW
Juncus mertensianus	Mertens' Rush	OBL
Juniperus scopulorum	Rocky Mountain Juniper	UPL

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Koeleria macrantha	Prairie Junegrass	UPL
Lemna minor	Common Duckweed	OBL
Lepidium campestre	Field Pepper-grass	UPL
Lepidium perfoliatum	Clasping Pepperwort	FACU
Leymus cinereus	Great Basin Wild Rye	FAC
Linaria vulgaris	Butter-and-Eggs	UPL
Linum lewisii	Prairie Flax	UPL
Lupinus sericeus	Silky Lupine	UPL
Madia glomerata	Mountain Tarplant	FACU
Medicago lupulina	Black Medic	FACU
Melilotus officinalis	Yellow Sweet-Clover	FACU
Mentha arvensis	American Wild Mint	FACW
Mimulus guttatus	Seep Monkey-Flower	OBL
Myosotis laxa	Bay Forget-Me-Not	OBL
Nasturtium officinale	Watercress	OBL
Orthocarpus tenuifolius	Thin-leaved Owl's-clover	UPL
Oxytropis deflexa	Pendant-pod Locoweed	FACU
Pascopyrum smithii	Western-Wheat Grass	FACU
Penstemon eriantherus	Fuzzy-Tongue Penstemon	UPL
Penstemon nitidus	Wax-leaf Beardtongue	UPL
Penstemon procerus	Pincushion Beardtongue	FAC
Penstemon strictus	Rocky Mountain Penstemon	UPL
Peritoma serrulata	Rocky Mountain Beeplant	FACU
Persicaria amphibia	Water Smartweed	OBL
Phacelia hastata	Silverleaf Scorpion-weed	UPL
Phalaris arundinacea	Reed Canary Grass	FACW
Phleum pratense	Common Timothy	FAC
Phlox muscoides	Moss Phlox	UPL
Plantago eriopoda	Red-Wooly or Redwool Plantain	FACW
Plantago major	Great Plantain	FAC
Poa ampla (= P. secunda, P. junicifolia)	Big Bluegrass	FACU
Poa compressa	Flat-stem Bluegrass	FACU
Poa palustris	Fowl Blue Grass	FAC
Poa pratensis	Kentucky Blue Grass	FAC
Poa secunda	Curly Blue Grass	FACU
Polemonium pulcherrimum	Showy Jacob's-ladder	UPL
Polygonum aviculare	Yard Knotweed	FAC
Polypogon monspeliensis	Annual Rabbit's Foot Grass	FACW
Potentilla anserina	Silverweed	OBL
Potentilla gracilis	Graceful Cinquefoil	FAC
Pseudoroegneria spicata	Bluebunch Wheatgrass	UPL
Puccinellia distans	Spreading Alkali Grass	FACW
Puccinellia nuttalliana	Nuttall's Alkali Grass	FACW
Pyrrocoma integrifolia	Goldenweed	UPL

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Ranunculus sceleratus	Cursed Buttercup	OBL
Ranunculus sp.	Buttercup	N/A
Ribes aureum	Golden Currant	FAC
Ribes irriguum	Idaho Gooseberry	UPL
Rorippa palustris	Bog Yellow Cress	OBL
Rumex crispus	Curly Dock	FAC
Rumex salicifolius	Willow Dock	FACW
Salix bebbiana	Gray Willow	FACW
Salix boothii	Booth's Willow	FACW
Salix exigua	Narrow-Leaf Willow	FACW
Salix geyerianna	Geyer Willow	FACW
Salix lasiandra	Pacific Willow	FACW
Salix lutea (=S. eriocephala)	Yellow Willow	OBL
Schedonorus pratensis	Meadow False Rye Grass	FACU
Schoenocrambe linifolia	Plains Mustard	UPL
Schoenoplectus tabernaernaemontani	Soft-Stem Club-Rush	OBL
Scirpus microcarpus	Red-Tinge Bulrush	OBL
Shephardia argentea	Silver Buffalo-Berry	FACU
Silene latifolia	White Cockle/Campion	UPL
Sisymbrium altissimum	Tall Hedge-Mustard	FACU
Sisymbrium loeselii	Smallpod Tumble Mustard	UPL
Sisyrinchium montanum	Strict Blue-eyed Grass	FAC
Solidago canadensis	Canadian Goldenrod	FACU
Solidago gigantea	Late Goldenrod	FACW
Sonchus arvensis	Field Sow-Thistle	FACU
Sphaeralcea coccinea	Scarlet Globemallow	UPL
Stachys pilosa	Hairy Hedge-Nettle	FACW
Stellaria longipes	Long-Stalk Starwort	FACW
Symphyotrichum ascendens	Western American-Aster	FACU
Symphyotrichum ciliatum	Alkali American-Aster	FACW
Symphyotrichum falcatum	Rough White Prairie American-Aster	FACU
Symphyotrichum lanceolatum	White Panicled American-Aster	OBL
Tanacetum vulgare	Common Tansy	FACU
Taraxacum officinale	Common Dandelion	FACU
Thlaspi arvense	Field Pennycress	UPL
Tragopogon dubius	Meadow Goat's-beard	UPL
Trifolium hybridum	Alsike Clover	FAC
Trifolium longipes	Long-Stalk Clover	FAC
Trifolium pratense	Red Clover	FACU
Trifolium repens	White Clover	FAC
Typha latifolia	Broad-Leaf Cat-Tail	OBL
Valeriana edulis	Tobacco-Root	FAC
Verbascum thapsus	Great Mullein	FACU
Veronica americana	American Brooklime or Speedwell	OBL

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2022.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Veronica anagallis-aquatica	Blue Water Speedwell	OBL
Veronica arvensis	Corm Speedwell	FACU

¹ 2020 NWPL (USACE 2020)

APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana



Photo Point: 1. Photo 1: View of western edge of cell 1 looking NW. Bearing: 333 degrees Year: 2015



Photo Point: 1. Photo 1: View of western edge of cell 1 looking NW. Bearing: 333 degrees Year: 2022



Photo Point: 1. Photo 2: View of central portion of cell 1 looking NE. Bearing: 26 degrees Year: 2015



Photo Point: 1. Photo 2: View of central portion of cell 1 looking NE. Bearing: 26 degrees Year: 2022



Photo Point: 1. Photo 3: View of central portion of cell 1 looking E. Bearing: 86 degrees Year: 2015



Photo Point: 1. Photo 3: View of central portion of cell 1 looking E. Bearing: 86 degrees Year: 2022



Photo Point: 1. Photo 4: View of southern end of cell 1 looking SE. Bearing: 166 degrees Year: 2015



Photo Point: 1. Photo 4: View of southern end of cell 1 looking SE. Bearing: 166 degrees Year: 2022



Photo Point: 1. Photo 5: View of western side of cell 1 looking SW. Bearing: 202 degrees Year: 2015



Photo Point: 1. Photo 5: View of western side of cell 1 looking SW. Bearing: 202 degrees Year: 2022



Photo Point: 2. looking NE.

Photo 1: View of Sand Creek channel Bearing: 40 degrees Year: 2015



Photo Point: 2. Photo 1: View of Sand Creek channel looking NE. Bearing: 40 degrees Year: 2022



Photo Point: 2. east.

Photo 2: View outside cell 1 looking Bearing: 86 degrees Year: 2015



Photo Point: 2. east.

Photo 2: View outside cell 1 looking Bearing: 86 degrees Year: 2022



Photo Point: 2. 1 looking SE.

Photo 3: View of eastern portion of cell Bearing: 113 degrees Year: 2015



Photo Point: 2. 1 looking SE.

Photo 3: View of eastern portion of cell Bearing: 113 degrees Year: 2022



Photo Point: 3. looking NW.

Photo 1: View of western edge of cell 4 Bearing: 314 degrees Year: 2015



Photo Point: 3. looking NW.

Photo 1: View of western edge of cell 4 Bearing: 314 degrees Year: 2022



Photo Point: 3. Photo 2: View of western side of cell 4 looking N. Bearing: 343 degrees Year: 2015



Photo Point: 3. Photo 2: View of western side of cell 4 looking N. Bearing: 343 degrees Year: 2022



Photo Point: 3. Photo 3: View across center of cell 4 looking NW. Bearing: 66 degrees Year: 2015



Photo Point: 3. Photo 3: View across center of cell 4 looking NW. Bearing: 66 degrees Year: 2022



Photo Point: 3. looking SE.

Photo 4: View of southern side of cell 4
Bearing: 114 degrees Year: 2015



Photo Point: 3. looking SE.

Photo 4: View of southern side of cell 4
Bearing: 114 degrees Year: 2022



Photo Point: 4. looking SW.

Photo 1: View of southern side of cell 5 Bearing: 220 degrees Year: 2015



Photo Point: 4. looking SW.

Photo 1: View of southern side of cell 5
Bearing: 220 degrees Year: 2022



Photo Point: 4. 5 looking W.

Photo 2: View across SE portion of cell Bearing: 268 degrees Year: 2015



Photo Point: 4. 5 looking W.

Photo 2: View across SE portion of cell Bearing: 268 degrees Year: 2022



Photo Point: 4. looking NW.

Photo 3: View across center of cell 5 Bearing: 321 degrees Year: 2015



Photo Point: 4. looking NW.

Photo 3: View across center of cell 5 Bearing: 321 degrees Year: 2022



Photo Point: 4. Photo 4: View of eastern side of cell 5 looking N. Bearing: 24 degrees Year: 2015



Photo Point: 4. Photo 4: View of eastern side of cell 5 looking N. Bearing: 24 degrees Year: 2022



Photo Point: 4. Photo 5: View of eastern side of cell 5 looking NE. Bearing: 56 degrees Year: 2015



Photo Point: 4. Photo 5: View of eastern side of cell 5 looking NE. Bearing: 56 degrees Year: 2022



Photo Point: 5. Photo 1: View of north end of cell 3 looking SE. Bearing: 145 degrees Year: 2015



Photo Point: 5. Photo 1: View of north end of cell 3 looking SE. Bearing: 145 degrees Year: 2022



Photo Point: 5. Photo 2: View of north end of cell 3 looking NW. Bearing: 345 degrees Year: 2015



Photo Point: 5. Photo 2: View of north end of cell 3 looking NW. Bearing: 345 degrees Year: 2022



Photo Point: 6. Photo 1: View of south end of cell 2 looking NW. Bearing: 326 degrees Year: 2015



Photo Point: 6. Photo 1: View of south end of cell 2 looking NW. Bearing: 326 degrees Year: 2022



Photo Point: 6. Photo 2: View of southeast side of cell 2 looking N. Bearing: 352 degrees Year: 2015



Photo Point: 6. Photo 2: View of southeast side of cell 2 looking N. Bearing: 352 degrees Year: 2022

Silicon Mountain: Photo Point and Stream Photographs



Photo Point: 7. Photo 1: View of cell 6 looking east. Bearing: 95 degrees Year: 2015



Photo Point: 7. Photo 1: View of cell 6 looking east. Bearing: 95 degrees Year: 2022



Photo Point: 8. Photo 1: View of the south end of Sand Creek looking SW. Bearing: 213 degrees Year: 2015



Photo Point: 8. Photo 1: View of the south end of Sand Creek looking SW. Bearing: 213 degrees Year: 2022



Photo Point: 8. Photo 2: View across southern portion of Sand Creek looking NE. Bearing: 28 degrees Year: 2015



Photo Point: 8. Photo 2: View across southern portion of Sand Creek looking NE. Bearing: 28 degrees Year: 2022



Photo Point: 9. Photo 1: View of Sand Creek downstream of PP-8 looking SE. Bearing: 148 degrees Year: 2015



Photo Point: 9. Photo 1: View of Sand Creek downstream of PP-8 looking SE. Bearing: 148 degrees Year: 2022



Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2015



Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2022



Photo Point: 10. Photo 1: View of the channel/slopes under overpass looking NW. Bearing: 312 degrees Year: 2015



Photo Point: 10. Photo 1: View of the channel/slopes under overpass looking NW. Bearing: 312 degrees Year: 2022



Photo Point: 10. NE

Photo 2: View of Sand Creek looking Bearing: 66 degrees Year: 2015



Photo Point: 10. Photo 2: View of Sand Creek looking NE Bearing: 66 degrees Year: 2022



Photo Point: 11. Photo 1: View of Sand Creek looking SE. Bearing: 144 degrees Year: 2015



Photo Point: 11. Photo 1: View of Sand Creek looking SE. Bearing: 144 degrees Year: 2022



Photo Point: 11. Photo 2: View of stream x-section 3 looking S. Bearing: 178 degrees Year: 2015



Photo Point: 11. Photo 2: View of stream x-section 3 looking S. Bearing: 178 degrees Year: 2022



Photo Point: 11. Photo 3: View downstream of stream x-section 3 looking NW. Bearing: 300 degrees Year: 2015



Photo Point: 11. Photo 3: View downstream of stream x-section 3 looking NW. Bearing: 300 degrees Year: 2022



Photo Point: 12. Photo 1: View SW across stream x-section 4. Bearing: 216 degrees Year: 2015



Photo Point: 12. Photo 1: View SW across stream x-section 4. Bearing: 216 degrees Year: 2022



Photo Point: 12. section 4.

Photo 2: View W across stream x-Bearing: 284 degrees Year: 2015



Photo Point: 12. section 4

Photo 2: View W across stream x-Bearing: 284 degrees Year: 2022



Photo Point: 12. Creek channel.

Photo 3: View west across Sand Bearing: 270 degrees Year: 2015



Photo Point: 12. channel.

Photo 3: View west across Sand Creek Bearing: 270 degrees Year: 2022



Photo Point: 12. Photo 4: View NW of stream x-section 4. Bearing: 348 degrees Year: 2015



Photo Point: 12. Photo 4: View NW of stream x-section 4. Bearing: 348 degrees Year: 2022



Photo Point: 13. Photo 1: View SE of stream x-section 7. Bearing: 153 degrees Year: 2015



Photo Point: 13. Photo 1: View SE of stream x-section 7. Bearing: 153 degrees Year: 2021



Photo Point: 13. Photo 2: View NE of stream x-section 7. Bearing: 341 degrees Year: 2015



Photo Point: 13. Photo 2: View NE of stream x-section 7. Bearing: 341 degrees Year: 2022



Photo Point: 14. looking south.

Photo 1: View of middle headcut Bearing: 178 degrees Year: 2015



Photo Point: 14. looking south.

Photo 1: View of middle headcut Bearing: 178 degrees Year: 2022



Photo Point: 15. looking S.

Photo 1: View of the eastern headcut Bearing: 189 degrees Year: 2015



Photo Point: 15. looking S.

Photo 1: View of the eastern headcut Bearing: 189 degrees Year: 2022



Photo Point: 16. Photo 1: View of western headcut looking west. Bearing: 210 degrees Year: 2015



Photo Point: 16. Photo 1: Vie looking west. Bearing: 210 deg

Photo 1: View of western headcut Bearing: 210 degrees Year: 2022



Photo Point: 17. Photo 1: View of Sand Creek channel looking W. Bearing: 157 degrees Year: 2015



Photo Point: 17. Photo 1: View of Sand Creek channel looking W. Bearing: 157 degrees Year: 2022



Photo Point: 17. Photo 2: View of Sand Creek channel looking N. Bearing: 356 degrees Year: 2015



Photo Point: 17. Photo 2: View of Sand Creek channel looking N. Bearing: 356 degrees Year: 2022

Silicon Mountain: Transect Photographs



Transect 1: Start Bearing: 305 degrees



Transect 1: Start
Bearing: 305 degrees

Location: South end cell 2 Year: 2022



Transect 1: End Bearing: 177 degrees

Location: North end of cell 3 Year: 2015

Location: South end cell 2

Year: 2015



Transect 1: End Bearing: 177 degrees

Location: North end of cell 3

g: 177 degrees Year: 2022

Silicon Mountain: Transect Photographs



Transect 2: Start Bearing: 285 degrees

Location: E side of cell 4, look west Year: 2015



Transect 2: Start Location: East side of cell 4, look west Bearing: 285 degrees Year: 2022



Transect 2: End Bearing:106 degrees

Location: SW side of cell 4, look east Year: 2015



Transect 2: End Bearing: 106 degrees

Location: SW side of cell 4, look E Year: 2022



Data Point: DP01w Sand Creek channel.

Location: Veg Comm. 3 along Year: 2022



Data Point: DP01u Sand Creek channel.

Location: Veg Comm. 8 along Year 2022



Data Point: DP02w Year: 2022





Data Point: DP02u Year: 2022

Location: Veg Comm. 13



Data Point: DP03w Year: 2022



Location: Wetland Cell 3



Data Point: DP03u Year: 2022

Location: Veg Comm. 16



Data Point: DP04w cell 4.



Location: Constructed wetland Year: 2022

Location: Veg Comm. 13.



Year: 2022

Data Point: DP05w cell 5.

Location: Constructed wetland Year: 2022



Data Point: DP05u Year: 2022

Location: Veg Comm. 13.



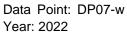
Data Point: DP06w cell 6.

Location: Constructed wetland Year: 2022

Data Point: DP06u Year: 2022

Location: Veg Comm. 13.





Location: Wetland cell 1.



Data Point: DP07-u Year: 2022

Location: Veg Comm. 9.



Data Point: DP08w cell 13.



Data Point: DP08u Year: 2022

Location: Veg Comm. 10.



Year: 2022

Data Point: DP09w wetland cell 1.



Location: South of constructed Year: 2022



Data Point: DP09u Year: 2022

Location: Veg Comm 10.



Data Point: DP10w Channel, at south end of project area.

Location: Along Sand Creek

Year: 2022



Data Point: DP10u

Location: Veg Comm. 5.



Cross-section 1: At center looking upstream. Year: 2017



Cross-section 1: At center looking downstream. Year: 2017



Cross-section 2: At center looking upstream. Year: 2017



Cross-section 1: At center looking upstream. Year: 2022



Cross-section 1: At center looking downstream. Year: 2022



Cross-section 2: At center looking upstream. Year: 2022



Cross-section 2: At center looking downstream. Year: 2017



Cross-section 2: At center looking downstream. Year: 2022



Cross-section 3: At center looking upstream. Year: 2017



Cross-section 3: At center looking upstream. Year: 2022



Cross-section 3: At center looking downstream. Year: 2017



Cross-section 3: At center looking downstream. Year: 2022



Cross-section 4: At center looking upstream. Year: 2017



Cross-section 4: At center looking upstream. Year: 2022



Cross-section 4: At center looking downstream. Year: 2017



Cross-section 4: At center looking downstream. Year: 2022



Cross-section 5: At center looking upstream. Year: 2017



Cross-section 5: At center looking upstream. Year: 2022



Cross-section 5: At center looking downstream. Year: 2017



Cross-section 6: At center looking upstream. Year: 2017



Cross-section 6: At center looking downstream. Year: 2017



Cross-section 5: At center looking downstream. Year: 2022



Cross-section 6: At center looking upstream. Year: 2022



Cross-section 6: At center looking downstream. Year: 2022



Cross-section 7: At center looking upstream. Year: 2017



Cross-section 7: At center looking downstream. Year: 2017



Cross-section 8: At center looking upstream. Year: 2017



Cross-section 7: At center looking upstream. Year: 2022



Cross-section 7: At center looking downstream. Year: 2022



Cross-section 8: At center looking upstream. Year: 2022



Cross-section 8: At center looking downstream. Year: 2017



Cross-section 8: At center looking downstream. Year: 2022

APPENDIX D Surveyed Stream Cross Sections

MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana

