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: 2024

Years Monitored: 10th 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 23-24, 2024

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 Port bridge/road realignment project 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 anticipated 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 reserve by MDT for transportation projects in the Butte area.

Site Location:

Latitude: 45.998489 Longitude: -112.662948

County: Butte Silver Bow Nearest Town: Rocker, MT

Map Included: Figure 1 on page #13

Mitigation Site Construction Started: 2013 Construction Ended: 2015 Recent Corrective or Maintenance Activities (since previous report):

Activity: Weed Treatment Date: 8/12/2024

Spotted knapweed, Canada thistle, whitetop, common mullein & leafy spurge treatments.

Specific recommendations for any additional corrective actions:

There is a downed fence on the project boundary near XS-2 (see Figure A-2).

Anticipated Wetland Credit Acres: 11.45 total, 4.33 assigned to BSBC, 7.12 assigned to MDT Wetland Credit Acres Generated to Date: 14.24 total, 4.33 assigned to BSBC, 9.91 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). As all success criteria have been achieved in 2024, future monitoring depends on approval by the 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 2023 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.	Y	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.	Y	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.	Y	Hydric soil characteristics have developed throughout all constructed wetlands.
Hydric Soil	Soil is sufficiently stable to prevent erosion.	Y	Disturbed soil is stable and generally does not exhibit signs of erosion.
	Soil is able to support plant cover.	Y	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.	Y	Montana state-listed noxious weeds were estimated at <4 percent absolute cover within wetland areas in 2024.
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.	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.
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 and channel evolution. The stream is dynamically stable with evidence of natural sediment redistribution.
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 2024, 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, wetland 13, and a small portion of cell 4 appear to support perennial inundation and exhibited open water and aquatic macrophytes. These areas were delineated as open water.
	Noxious weeds do not exceed 10 percent cover within upland buffer area.	Υ	In 2024, noxious weed cover is approximately 3 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 nonweed species by the end of the monitoring period.	Y	Disturbed areas have established greater than 50 percent cover by non-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	MDT has implemented weed-control efforts based upon annual monitoring efforts. Absolute cover from Montana state-listed noxious weeds was estimated at 7 percent across the entire site (wetlands & uplands).

Summary Data

Wetland Delineation – A total of 18.89 wetland acres were delineated within the Silicon Mountain project area in 2024 which is an increase of 0.26 acres since the 2023 monitoring event. Of the 18.89 wetland acres delineated, 9.86 acres are pre-existing wetlands that have been preserved and 9.03 acres are wetlands established since construction (Table 2; Appendix A). Open water, as defined by USACE guidance (N. Green - personal communication, May 6, 2020), accounted for 2.55 acres of the mitigation site in 2024, which is a decrease of 0.52 acres since 2023. Open water acreages naturally increase or decrease year-to-year with changes in precipitation and drought conditions. The decrease is attributed to a reduction of preservation open water in wetland cell 13, which was replaced with emergent wetland vegetation. Preservation wetlands increased from 2023 because of this reduction of preservation open water. Establishment open water increased by 0.08 acres.

Uplands accounted for approximately 27.19 acres of the mitigation site and 1.47 acres are represented by the restored Sand Creek channel (Figure A-3, Appendix A). No mudflats were observed at this site in 2024. Wetland delineation data forms can be found in Appendix B, and photos for data points in Appendix C.

Table 2. Upland, Wetland & Aquatic Habitat Acreage Delineated at the Silicon Mountain Site from 2016 to 2024.

Habitat Type	2016 Acreage	2017 Acreage	2018 Acreage	2019 Acreage	2020 Acreage	2021 Acreage	2022 Acreage	2023 Acreage	2024 Acreage
Uplands	31.80	31.30	30.50	30.10	28.95	26.84	26.95	26.92	27.19
Establishment (Creation) Wetland	6.30	6.30	7.10	7.50	6.04	8.42	8.62	9.28	9.03
Establishment Open Water ^(a)	NA	NA	NA	NA	2.92	2.65	2.86	2.41	2.49
Preservation Wetland	10.30	10.80	10.80	10.80	9.65	9.65	9.31	9.31	9.86
Preservation Open Water ^(a)	NA	NA	NA	NA	0.84	0.60	0.66	0.66	0.06
Mudflat ^(a)	NA	NA	NA	NA	0.00	0.24	0.00	0.00	0.00
Stream Channel	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.52	1.47
Total Wetland & Aquatic Habitat	18.30	18.80	19.60	20.00	21.15	23.02	23.15	23.18	22.91

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

Vegetation – A total of 187 plant species have been identified at the site from 2015 through 2024, with six new species reported at the site in 2024. The following 8 wetland and 7 upland community types were identified and mapped at the mitigation site in 2024 based on species composition and dominance:

- Upland Type 3 Bromus inermis / Poa pratensis
- Upland Type 5 Elymus repens / Bromus inermis
- Upland Type 9 Juncus balticus / Elymus repens
- Upland Type 10 Artemisia tridentata / Poa spp.
- Upland Type 13 Leymus cinereus / Elymus trachycaulus
- Upland Type 15 Poa pratensis / Elymus repens
- Upland Type 19 Bromus tectorum
- Wetland Type 4 Carex spp. / Juncus balticus
- Wetland Type 7 Open Water / Aquatic Macrophytes
- Wetland Type 8 Salix exigua / Juncus balticus
- Wetland Type 11 Typha latifolia
- Wetland Type 14 Eleocharis palustris / Deschampsia caespitosa
- Wetland Type 16 Juncus balticus / Eleocharis palustris
- Wetland Type 17 Salix spp.
- Wetland Type 18 Alopecurus arundinaceus / Juncus balticus

Dominant vegetation community types and their boundaries remained similar to those mapped in 2023. UT 2 (*Descurainia sophia / Thlaspi arvense*) was changed to UT 19 (*Bromus tectorum*), to better reflect cheatgrass as the dominant species within the community. WT 18, a new community type added in 2023, contracted approximately 60 ft on its northern edge from where it was mapped in 2023. UT 3 replaced the lost area. This transition signifies a shift in dominance to more facultative and upland species, which may indicate that the wetland hydrology in this cell has become somewhat diminished under drought conditions in the past two years. UT 13 also contracted slightly along the edge of wetland Cell 2 where wetland boundaries were shifted.

transitioning to WT 16 where Baltic rush became more dominant along the wetland fringe. Open water was significantly reduced in preservation Cell 13, with WT 4 replacing the lost area.

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).

Vegetation cover was monitored along two belt transects (T-1 and T-2) in 2024 (Figure A-2, Appendix A). T-1 is 564 feet long and intersects UT3, WT11, UT13, WT16, and WT18. The total number of species observed decreased by one, with an additional upland species observed and two less hydrophytic species observed. Habitat type boundaries did not change within the transect from 2023. The estimated total vegetative cover along the transect remained consistent with observations since 2019 at 93%.

Table 3. Data Summary for T-1 From 2016 Through 2024 at the Silicon Mountain Site.

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Vegetation Community Transitions Along Transect	6	6	6	6	6	6	6	6	6
Vegetation Communities Along Transect	4	4	5	5	4	4	4	5	5
Hydrophytic Vegetation Communities Along Transect	2	2	2	2	2	2	2	3	3
Total Vegetative Species	48	54	42	43	47	46	46	48	47
Total Hydrophytic Species	26	33	28	31	35	35	36	26	24
Total Upland Species	22	21	14	12	12	11	10	22	23
Estimated % Total Vegetative Cover	90	90	90	93	93	93	93	93	93
Estimated % Unvegetated	10	10	10	7	7	7	7	7	7
% Transect Length Comprising Hydrophytic Vegetation Communities	81.3	86	86	86	86	86	86	85	85
% Transect Length Comprising Upland Vegetation Communities	18.7	14	14	14	14	14	14	15	15
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0	0

T-2 is 219 feet long and intersects vegetation communities UT15, WT14, WT11, and UT3. The proportion of the transect comprised of hydrophytic vegetation communities remains static at 90% (Table 4). In 2024, a total of 38 species were observed along the transect. The number of upland species increased by 1 and the number of hydrophytic species increased by 2, reflecting normal year-to-year differences in species composition. The estimated total vegetative cover remains consistent with observations in 2023 at 87%.

The site is currently achieving the success criteria established for noxious weed cover within both the wetland and upland buffer areas (Table 1). Priority 2B noxious weeds identified within the Silicon Mountain mitigation site included spotted knapweed (*Centaurea stoebe*), leafy spurge (*Euphorbia esula*), yellow toadflax (*Linaria vulgaris*), whitetop (*Cardaria draba*), and Canada thistle (*Cirsium arvense*) (See locations in Figure A-3 on page A-2).

- Canada thistle patches previously mapped throughout the central portion of the site remained mostly the same between 2023 and 2024, but new occurrences were recorded in the south and west sections of the site.
- New leafy spurge patches were recorded in the southernmost section of the site.
- Spotted knapweed patches remained consistent between 2022 and 2024: a new patch was mapped at the south edge of the site and west of wetland Cell 6.
- Yellow toadflax, observed only as isolated individuals in previous years, increased in density and distribution in 2024. There are several patches throughout the vicinity of

wetland Cells 1, 2, and 3 of various sizes, and three more patches at the east end of wetland cell 13.

- Whitetop (*Cardaria draba*) was mapped in the northwestern portion of the project area, just south of the bike path, and at several points along Sand Creek.
- Black henbane (*Hyoscyamus niger*) was mapped for the 1st time in 2023, to the east of wetland cell 4.

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. The willow cuttings and other woody species are healthy and are becoming increasingly dense to the point that individual cuttings can no longer be identified. An estimated 17 percent of the containerized woody plantings survived through the 2022 survey. About 85 percent of the installed willow cuttings were estimated to have survived in 2023; young shoots arising from the installed cuttings ranged from 12 to 96 inches in length. Volunteer willows continue to establish along the stream channel and total shrub cover from the willow-dominated community types increased again in 2024.

Table 4. Data Summary for T-2 From 2016 Through 2024 at the Silicon Mountain Site.

Monitoring Year	2016	2017	2018	2019	2020	2021	2022	2023	2024
Vegetation Community Transitions Along Transect	2	2	2	3	3	3	3	3	3
Vegetation Communities Along Transect	3	3	3	4	4	4	4	4	4
Hydrophytic Vegetation Communities Along Transect	1	1	1	2	2	2	2	2	2
Total Vegetative Species	21	47	27	35	37	35	34	35	38
Total Hydrophytic Species	10	24	17	19	26	26	26	19	21
Total Upland Species	11	23	10	16	11	9	8	16	17
Estimated % Total Vegetative Cover	45	55	72	87.5	85	87	89	87	87
Estimated % Unvegetated	55	45	28	12.5	15	13	11	13	13
% Transect Length Comprising Hydrophytic Vegetation Communities	88	88	91	90	90	90	90	90	90
% Transect Length Comprising Upland Vegetation Communities	12	12	9	10	10	10	10	10	10
% Transect Length Comprising Open Water	0	0	0	0	0	0	0	0	0
% Transect Length Comprising Mudflat	0	0	0	0	0	0	0	0	0

Hydrology – Wetland hydrology was observed in numerous places across the Silicon Mountain mitigation site in 2024. Approximately 2.55 acres of surface water were observed in constructed wetland Cells 1, 2, 4, and 5 and preservation wetland cell 13 (0.06 acres). The estimated average surface water depth was 1 foot with depths ranging 0.1-4 feet. Flowing water was present in the entire length of the Sand Creek channel, with a few areas that exhibited ponded water on the downstream end of the channel. Indicators of wetland hydrology observed at the various wetland data points included: surface water, high water table, saturation, algal mats, hydrogen sulfide odor, and drift deposits (Appendix B – Corps Data Forms). Preserved wetland Cell 13 showed a reduction in the extent of surface water in 2024 compared to 2023.

US Geological Survey (USGS) groundwater monitoring data indicates that groundwater levels at this site were lower in 2024 than in 2023. There are two MDT wells, that the USGS-monitors at the site at an elevation of 5,347 feet. Groundwater levels have fluctuated year to year but have generally declined. From 2016 to 2020, groundwater levels gradually increased with the highest water levels recorded in May 2019 and 2020 (0.63-ft and 0.85-ft below land surface respectively). Since 2021 groundwater elevations have slowly decreased, with the shallowest measurements having been 1.01 and 1.55 feet below ground surface in 2021 and 2022 respectively.

Groundwater monitoring data in 2023 indicates groundwater levels at the well varied between 1.5-2.8 feet below the land surface. In 2024, groundwater levels measured in May (3.27 ft), June (2.51 ft), and August (1.87) were lower than in 2023 (Table 5; USGS, 2024). This may be due to the long-term drought that southwestern Montana has been experiencing since late 2022.

Table 5. 2024 USGS Groundwater Well Data for the Silicon Mountain Mitigation Site.

Date	Water Table Depth (feet below land surface)
5/2/2024	3.27
6/27/2024	2.51
8/28/2024	1.87

Soils – Soil pits were excavated at 20 sample points (10 sets of paired points) in 2024 in compliance with US Army Corps of Engineers wetland delineation requirements to determine the extent of hydric and upland soil development across the site (Appendices A and B). Soil textures within wetland test pits were mostly various loams, with one sand-dominated profile. Hydric soil indicators were observed in all but one wetland test pit, and included depleted matrix, hydrogen sulfide odor, and/or redox dark surface. The problematic wetland test pit observed in Wetland Cell 6 (DP09w) lacked any hydric soil indicators, but did exhibit evidence of wetland hydrology and supported a hydrophytic plant community. Based on this evidence of a hydric plant community and moisture regime, the area was classified as a wetland.

Soil textures within upland test pits consisted of various loams. Test pit DP01u had sandy loam aggregates with relict redoximorphic features mixed throughout the profile, indicating that the soils in this portion of the site were disturbed during construction. This soil was loose and dry and was not classified as a hydric soil.

Comprehensive field observations for data points are provided in the USACE wetland determination data forms in Appendix B for both wetland and upland points.

Wildlife – Six bird species were identified in 2024 at the Silicon Mountain site and included several wetland-dependent species. In addition to avian observations, a vole (*Microtus* sp.), rabbit (*Sylvilagus nuttallii*), and 5 white tailed deer (*Odocoileus virginianus*), including a doe and three fawns, were also observed (Appendix B).

Stream Channel Monitoring – The annual survey of the reconstructed channel indicates that the Sand Creek channel is stable and continuing to evolve (Appendix D).

The majority of the changes within Sand Creek channel are related to the bed surface elevation, channel narrowing, and bank aggradation. This statement is especially applicable for cross sections 1-3, which have displayed very little evidence of lateral migration over the monitoring period. In 2024, cross section 1 (XS1) appeared to have very similar dimensions as it did in 2015, even though previous years' survey data indicated that it has both downcut and re-filled by approximately 1 foot throughout the monitoring period. The thalweg at cross section 2 (XS2) in 2024 was approximately 0.75 feet deeper than it was in 2015 and it has continued to shift toward the right bank, with some continued minor aggradation on the left bank. The streambed at cross section 3 (XS3) has simultaneously narrowed and become shallower by 1.5-2 feet since 2015.

Cross sections 4-7, all located in the middle of the project area, have displayed the most evidence of lateral migration and change over the monitoring period. The deepest part of the channel has become deeper at cross section 4 (XS4) and the thalweg has shifted slightly toward the left bank as the right side of the channel has aggraded by 1-2 feet. The deepest part of the channel at

cross section 5 (XS5) has also downcut by approximately 1 foot, while both the right and left sides of the channel have aggraded by approximately 0.5 feet. In 2024, the 2-3 foot migration observed in the upper portion of the right bank at XS5 in 2023 appeared to have returned to its previous position. Cross section 6 (XS6) continues to exhibit aggradation on the right side of the channel as nearly 0.8 ft of sediment deposited on the right side of the channel in 2022 and 2023 has gradually eroded in 2024. Channel form at cross section 7 (XS7) has been dynamic over the last several years, with the thalweg shifting from the center to the right side of the channel and sediment deposition having been observed in different locations in different monitoring years. In 2024, the main channel has widened on its left side by about 5 feet. Finally, the channel form at cross section 8 (XS8) has remained relatively stable across all monitoring years.

Although several of the monitored cross sections have exhibited changes in channel form over time, none of these observations are concerning. Almost all observed channel form evolution has occurred between the constructed streambanks, and the top of bank locations have remained mostly static. The re-distribution of sediment within the stream channel and migration of the thalweg are natural processes and indicate that the stream is functioning appropriately as designed.

Riparian Vegetation Monitoring - In 2024, all 16 belt transects monitored along Sand Creek exhibited riparian vegetation communities with stability ratings of 6 or greater, which meets the site's channel restoration performance criterion. Willow species, including yellow willow (Salix lutea), narrow-leaf willow (Salix exigua), and Pacific willow (Salix lasiandra), represent the dominant woody species identified along the stream bank transects. Dominant riparian herbaceous species observed within the transects included Basin wildrye (Leymus cinereus), Baltic rush (Juncus balticus), panicled bulrush (Scirpus microcarpus), woolly sedge (Carex pellita), fringed willowherb (Epilobium ciliatum), and Nebraska sedge (Carex nebrascensis). The willows continue to increase in height and abundance along the stream banks with minor shifts in species dominance.

Photographs – Seven wetland and ten stream annual 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 2024 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 2024. Five distinct Assessment Areas (AA) were evaluated at the site in 2024; 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; Appendix B).

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

- AA3 Preservation Wetlands are classified as Category II wetlands and received high ratings for General Wildlife Habitat, Short- and Long-Term Surface Water Storage, Sediment/Nutrient/Toxicant Removal, Sediment/Shoreline Stabilization, Production Export/Food Chain Support, Groundwater Discharge/Recharge, and Recreation/Education Potential.
- AA4 The ecological function provided by Wetland Cell 6 is generally lower than the other
 cells due to its small size, the man-made nature of the site in the footprint of the old
 roadway/bridge fill, and its proximity to the railway. The wildlife and MNHP species of
 concern habitat scores were reduced in 2024, and the wetland is now rated as a Category
 IV 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/Nutrient/Toxicant Removal, Sediment/Shoreline Stabilization, Production
 Export/Food Chain Support, Groundwater Discharge/Recharge, and Recreation/Education
 Potential.

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

Function and Value Parameters From the 2008 Montana Wetland Assessment Method	2024 AA1 (Established Wetland Cells 2, 3, and 4)	2024 AA2 (Established Wetland Cells 1 and 5)	2024 AA3 (Preservation Wetlands: Preservation Wetland Cells 5, 7, 12, & 13)	2024 AA4 (Established Wetland Cell 6)	2024 AA5 (Wetlands Established along Sand Creek and adjacent to preservation wetlands)
Listed/Proposed Threatened & Endangered (T&E) Species Habitat	L (0.1)	L (0.1)	L (0.1)	L (0.0)	L (0.0)
Montana Natural Heritage Program Species (MTNHP) Habitat	M (0.5)	M (0.5)	M (0.5)	L (0.1)	M (0.7)
General Wildlife Habitat	H (0.9)	E (1.0)	H (0.9)	L (0.2)	H (0.9)
General Fish/Aquatic Habitat	N/A	N/A	N/A	N/A	M (0.6)
Flood Attenuation	N/A	N/A	N/A	N/A	H (0.8)
Short- and Long-Term, Surface-Water Storage	M (0.6)	H (1.0)	H (0.9)	L (0.2)	M (0.7)
Sediment/Nutrient/Toxicant Removal	H (1.0)	M (0.7)	H (1.0)	M (0.5)	H (0.9)
Sediment/Shoreline Stabilization	M (0.6)	H (1.0)	H (1.0)	N/A	H (1.0)
Production Export/Food Chain Support	H (0.9)	H (1.0)	H (0.8)	L (0.2)	H (1.0)
Groundwater Discharge/Recharge	M (0.7)	H (1.0)	H (1.0)	M (0.7)	H (1.0)
Uniqueness	M (0.5)	M (0.6)	M (0.6)	L (0.2)	M (0.4)
Recreation/Education Potential (bonus points)	H (0.2)	H (0.2)	H (0.2)	N/A	H (0.2)
Actual Points/Possible Points	6.0/9.0	7.1/9.0	7.0/9.0	2.1/8.0	8.2/11.0
% of Possible Score Achieved	67%	79%	78%	26%	75%
Overall Category	II	II	II	IV	II

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 2024, 18.89 acres of wetland were delineated at the Silicon Mountain site, all of which can be applied toward mitigation credits. The total wetland acreage delineated is comprised of 9.04 establishment wetland acres and 9.86 acres of preservation wetlands. Additionally, 2.55 acres of open water habitat were delineated across the mitigation site, and the 50-foot upland buffer surrounding the wetland habitats provided an additional 13.67 acres toward the mitigation crediting. Applying the USACE-approved ratios to this acreage results in a total of 14.24 wetland mitigation credit acres generated in 2024. The mitigation ratios for the 2.55 acres of open water have yet to be determined by the USACE (Tables 8 and 9). Of these 14.24 credit acres, 4.33 credits are allocated to Butte-Silver Bow County and the remaining 9.91 credit acres are allocated to MDT.

Functional Unit Credits

Silicon Mountain Mitigation site generated a total of 43.52 functional unit credits for MDT in 2024. (Table 9). 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 2021 through 2024*

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	2021 Delineated Acres	2021 Mitigation Credit Acres	2022 Delineated Acres	2022 Mitigation Credit Acres	2023 Delineated Acres	2023 Mitigation Credit Acres	2024 Delineated Acres	2024 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	8.42	8.42	6.36	6.36	6.84	6.84	6.60	6.60
Establishment (Creation)	Additional wetlands that have established surrounding preservation and riparian zones	Palustrine Emergent, Palustrine Scrub-shrub	0.00	1:1	0.00	-	-	-	1	2.26	2.26	2.44	2.44	2.44	2.44
Preservation	Existing Wetland Areas: Preservation Wetland Cells 5, 7, 12, and 13	Palustrine Emergent, Scrub-Shrub	10.06	4:1	2.52	10.24	2.56	9.65	2.41	9.31	2.33	9.31	2.33	9.86	2.47
Upland Buffer (c)	50-Foot-Wide Upland Buffer	N/A	10.80	5:1	2.16	10.80	2.16	10.80	2.16	16.72	3.34	13.74	2.75	13.67	2.73
Open Water ^(a)	Wetland Cells 1, 4, 5, & 13	Lacustrine/ Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	3.24	TBD	3.51	TBD	3.07	TBD	2.55	TBD
Mudflat ^(a)	Preserved Wetland 13	Palustrine Aquatic Bed	TBD	TBD	TBD	N/A	N/A	0.24	TBD	0.00	N/A	0.00	N/A	0.00	N/A
	Total Acreage		28.70	NA	11.45	27.23	10.91	32.35	12.99	38.16	14.29	35.40	14.36	35.12	14.24
Butte S	ilver Bow County Credit A	Acres	2.16	2:1	4.33		4.33		4.33		4.33		4.33		4.33
	dit Acres Assigned to MD		26.54		7.12		6.83		8.66		9.96		10.03		9.91

⁽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. 2024 MDT Wetland Functional Credits at the Silicon Mountain site.

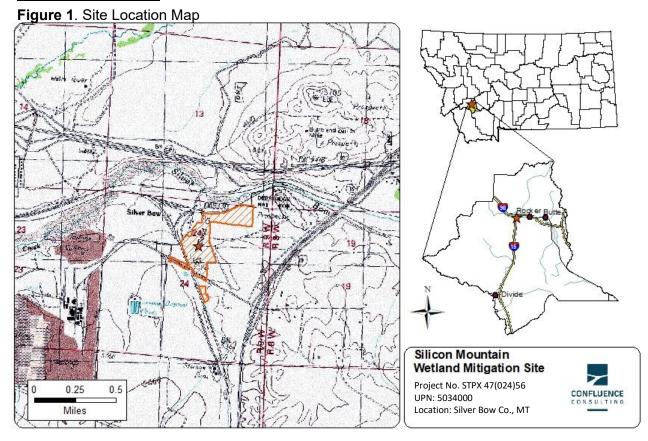
MDT Mitigation Credit Area	2024 Delineated Wetland Acres	Ratio	2024 MDT Mitigation Credit Acres*	MWAM Actual Points (see Table 6)	Functional Credits (Mitigation Credit Acres × Actual Points)
Wetland Cell 3 (Establishment)	0.56	1:1	0.56	6	3.36
Wetland Cell 4 (Establishment)	1.42	1:1	1.42	6	8.52
Wetland Cell 5 (Establishment)	0.43	1:1	0.43	7.1	3.05
Riparian Wetlands (Establishment)	1.96	1:1	1.96	8.2	16.07
Wetland Cells 12 and 13 (Preservation)	7.15	4:1	1.79	7.0	12.52
Total	11.52		6.16*	34.30	43.52

^{*}Does not include BSBC credit areas, open water, or upland buffer,

Conclusions

The Silicon Mountain Mitigation site is continuing to develop into a diverse stream and wetland ecosystem. The site met all established performance criteria and has exceeded the planned mitigation credit acreage. All wetland cells, except Cell 6, are functioning as intended and wetland acreage continues to remain relatively stable with a few fluctuations. The Sand Creek channel morphology continues to evolve, though the location of the channel has remained static. Willow cuttings installed along the banks of Sand Creek continue to mature, 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 2025 to ensure that the site maintains the performance criteria related to noxious weed cover.

Maps, Plans, Photos



Project Area Maps/Figures: See Appendix A (Figure A-2 – 2024 Monitoring Activity Locations; Figure A-3 – 2024 Mapped Site Features; Figure A-4 – 2024 Wetland Credit Areas; and Figure A-5 – 2024 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

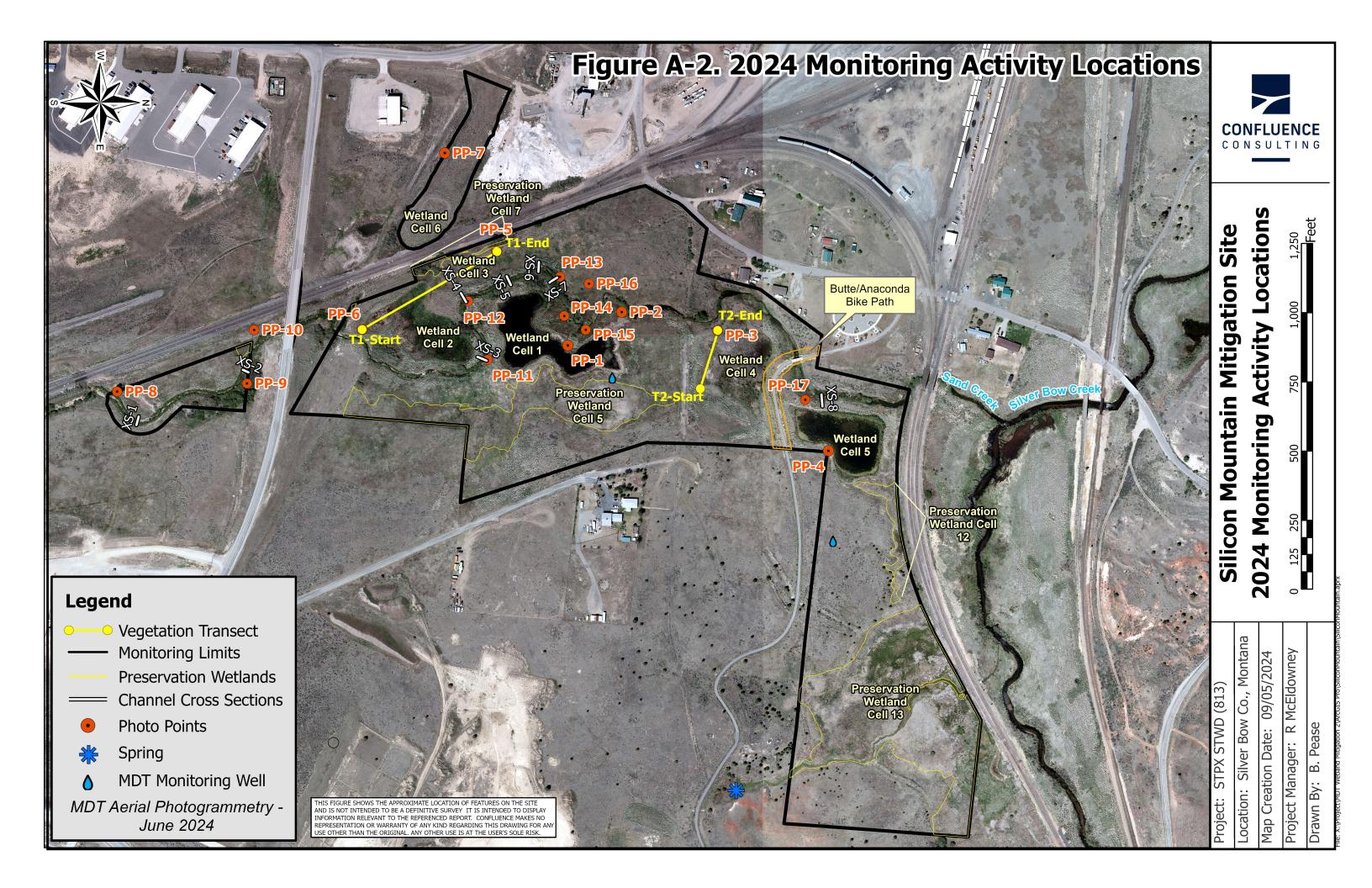
https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx

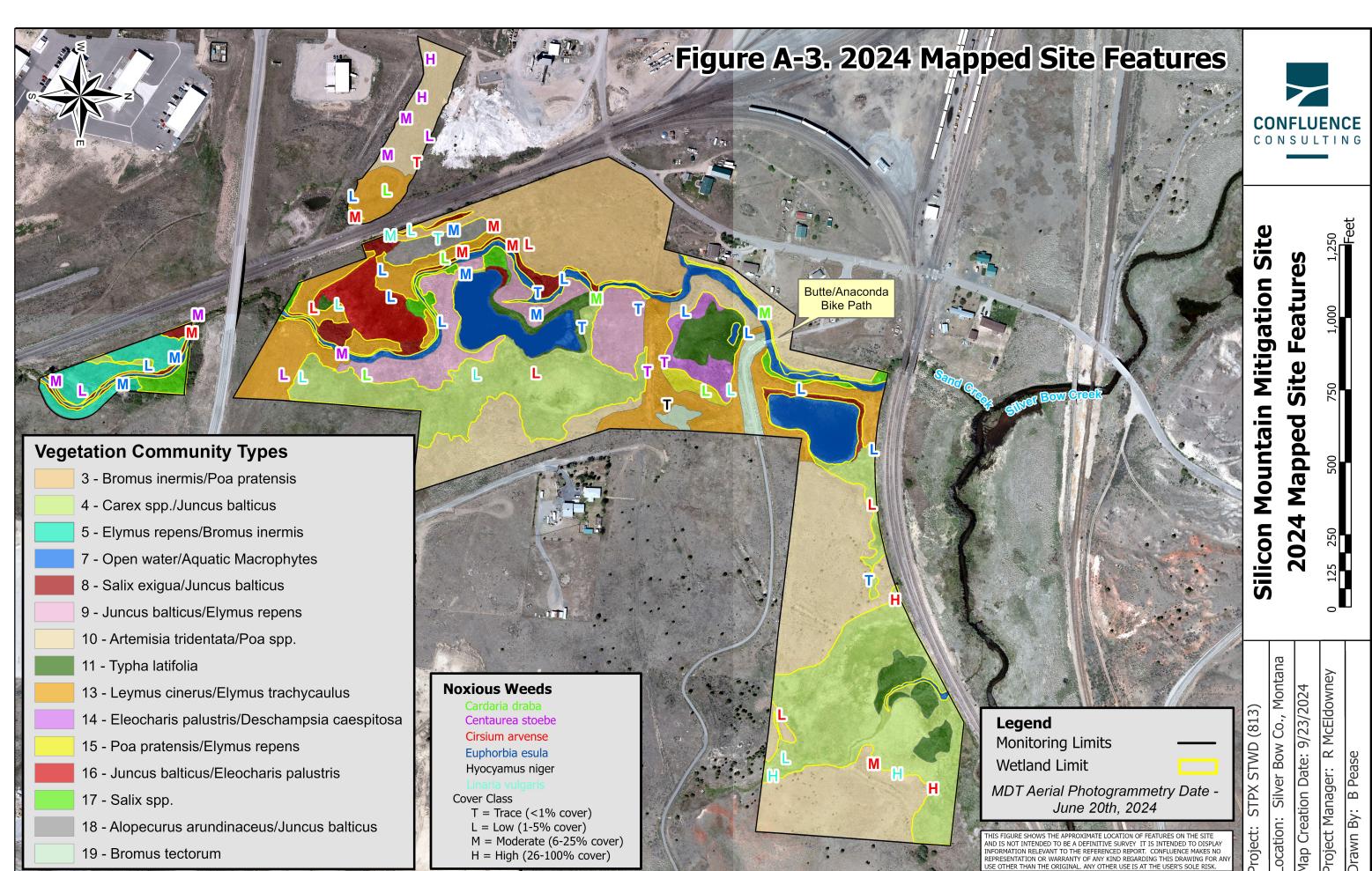
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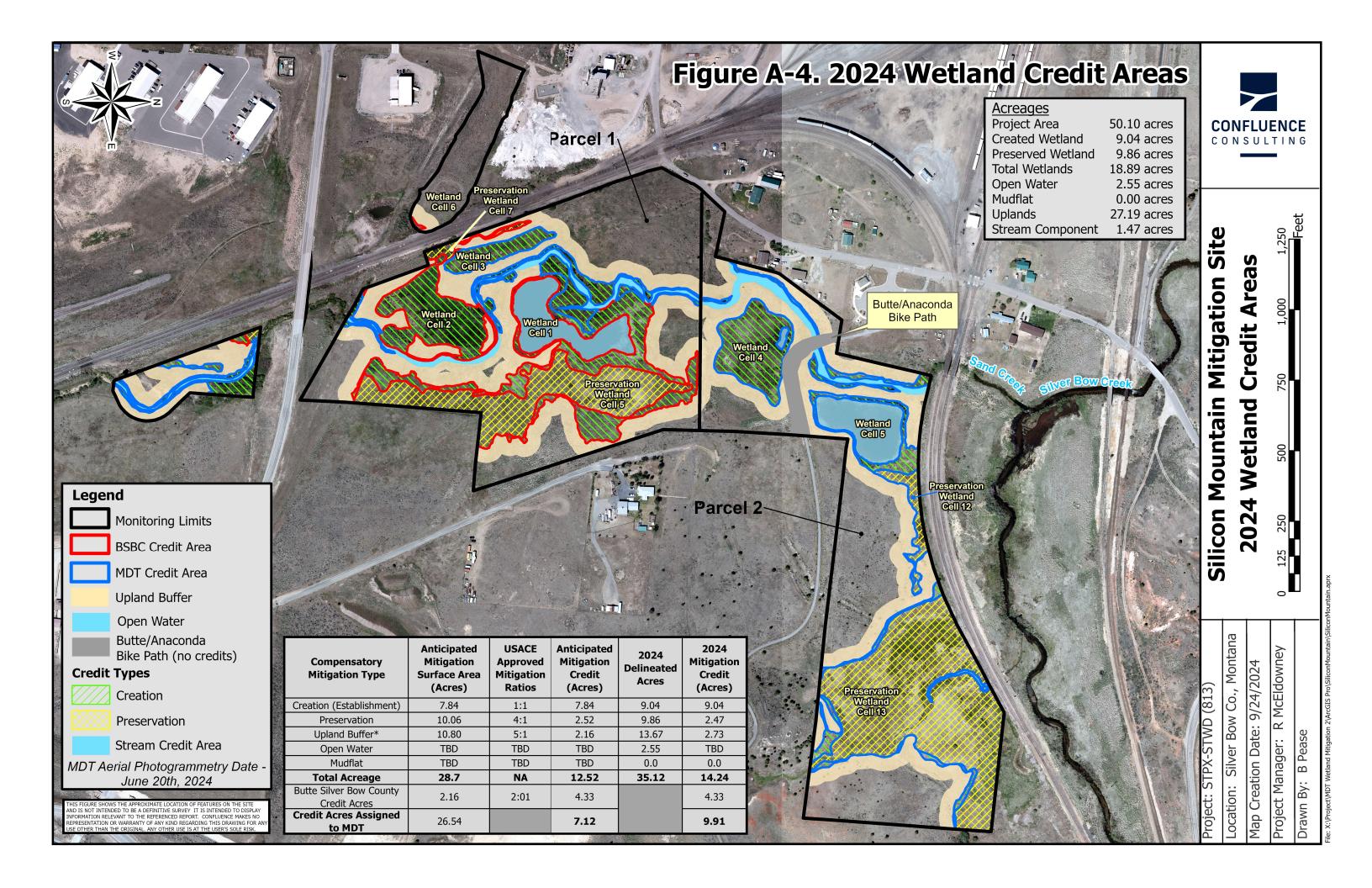
APPENDIX A PROJECT AREA MAPS

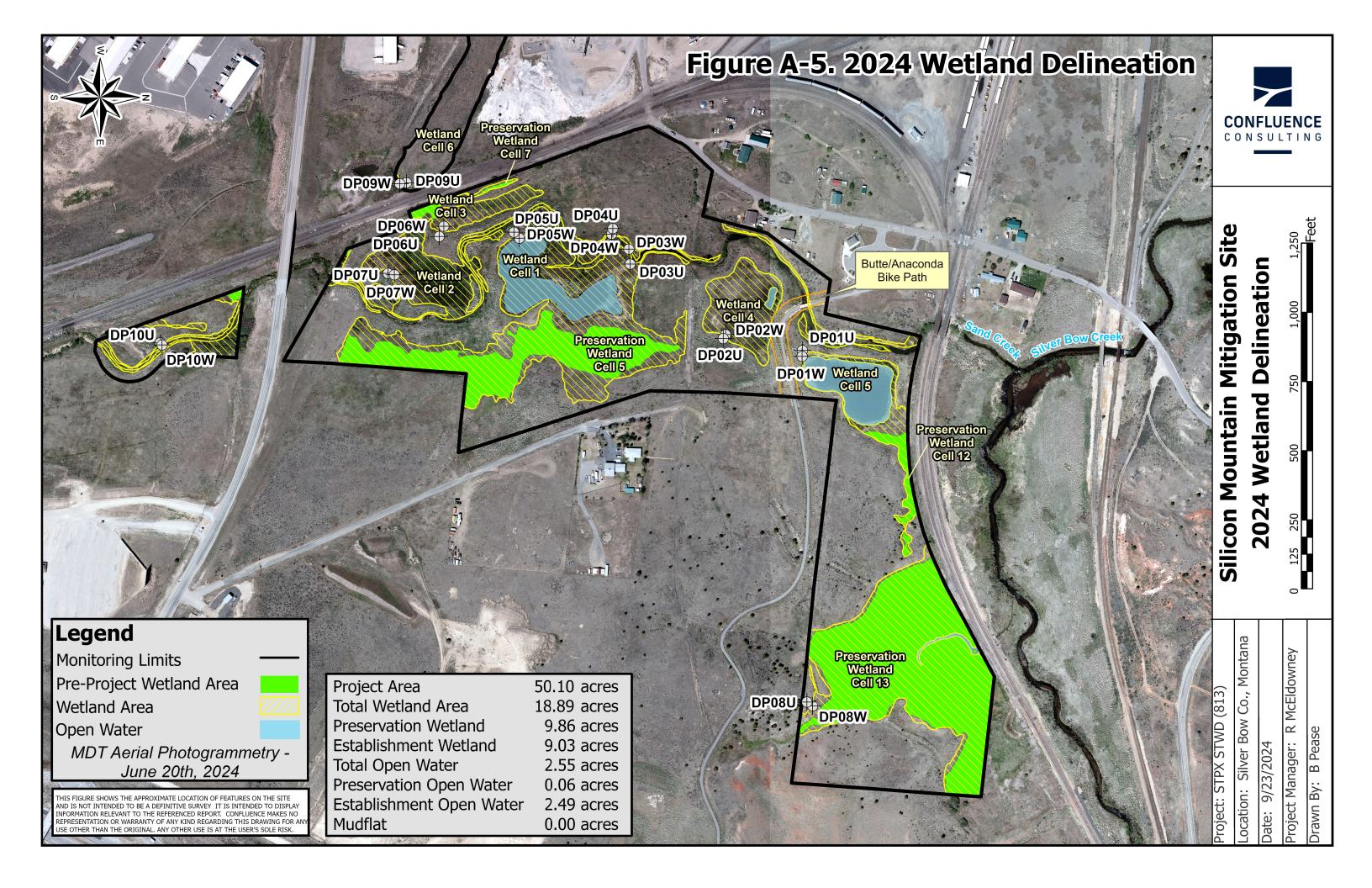
MDT Wetland Mitigation Monitoring Silicon Mountain Butte Silver Bow County, Montana





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APPENDIX B MONITORING FORMS

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

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: Silico	on Mountain	Assessment Date/Time	7/23/2024
Person(s) conduct	ing the assessmer	nt: R McEldowney, RJ Baumgarten, E Reynaud	
		Location: 5 miles west of Butte	
		Milepost: MP 119 on I-15	
Legal Description:	T <u>3N</u> R <u>9E</u> S	Section(s) 24	
Initial Evaluation D	ate <u>: 6/23/2015</u>	Monitoring Year: <u>10</u> #Visits in Year: <u>1</u>	
Size of Evaluation	Area: 50.1 (ad	<u>cres)</u>	
Land use surround	ling wetland:		
Mix of commercia	al (railroad), reside	ential, and parkland (bike path).	
		HYDROLOGY	
Surface Water Source:	: Sand Creek and	d a well-defined spring.	
Inundation: 🔽	Average De	epth: <u>1 (ft)</u> Range of Depths: <u>0.1-4 (ft)</u>	
Percent of assessment	t area under inunda	ation:8 <u>%</u>	
Depth at emergent veg	jetation-open wate	r boundary: 0.5 (ft)	
If assessment area is r	not inundated then	are the soils saturated within 12 inches of surface:	Yes
		ex. – drift lines, erosion, stained vegetation, etc:	
Evidence of wetland	hydrology across dation, a positive	the mitigation site includes high water table, saturation FAC-Neutral test, geomorphic position, inundation on	
Groundwater Mon	itoring Wells		
Record depth of wa	iter surface below	ground surface, in feet.	
Well ID	Water Surface De	pth (ft)	
*Separate dates			
45595911239420	2.63		
45595911239420	3.27		
45595911239420	2.51		
45595911239420	1.87		
46000511239190	7.54		
46000511239190	7.65		
46000511239190	6.96		
46000511239190	6.46		

Additio	onal Activities Checklist:
\checkmark	Map emergent vegetation-open water boundary on aerial photograph.
\checkmark	Observe extent of surface water during each site visit and look for evidence of past surface water
elevat	ions (drift lines, erosion, vegetation staining, etc.)
	Use GPS to survey groundwater monitoring well locations, if present.

Hydrology Notes:

Two groundwater monitoring wells remained on site after construction and are monitored by USGS. Well depths were recorded four times in 2024 on 5/2, 6/27, 8/28, and 9/20.

Open water covered ~80% of wetland cells 1 and 5. Shallow ponded water was present in ~3% of Cell 4, and ~1% of wetland 13. Open water dramatically reduced in Cell 13 with the narrowing of the stream bank. Flowing water was present in the entire length of the Sand Creek channel.

VEGETATION COMMUNITIES

Site Silicon Mountain

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

Community # 3 Community Type: Bromus inermis / Poa pratensis Acres: 5.14

Species	Cover class	Species	Cover class
Achillea millefolium	1	Agrostis stolonifera	1
lopecurus arundinaceus	0	Artemisia tridentata	1
stragalus cicer	1	Bare Ground	1
omus inermis	4	Centaurea stoebe	0
sium arvense	1	Deschampsia caespitosa	0
mus repens	3	Elymus trachycaulus	2
ohorbia esula	3	Juncus balticus	0
eleria macrantha	1	Lactuca serriola	0
mus cinereus	1	Linaria vulgaris	2
ilotus officinalis	1	Phalaris arundinacea	0
a palustris	1	Poa pratensis	3
a secunda	1	Potentilla anserina	0
nedonorus pratensis	1	Solidago gigantea	0
nchus arvensis	1	Thlaspi arvense	1
olium hybridum	1		

Comments:

Upland community. Increase in acreage of this CT (0.22 ac) in 2024 due to wetland contraction along the western portion of the project area.

Community # 4 Community Type: Carex spp. / Juncus balticus Acres: 11.72

Species	Cover class	Species	Cover class
Calamagrostis canadensis	1	Carex aquatilis	1
Carex nebrascensis	2	Carex praegracilis	1
Carex praticola	1	Carex utriculata	2
Cirsium arvense	1	Deschampsia caespitosa	2
Euphorbia esula	1	Juncus balticus	4
Leymus cinereus	0	Mentha arvensis	1
Poa palustris	1	Poa pratensis	2
Potentilla anserina	2	Sisymbrium altissimum	1
Typha latifolia	1		

Comments:

PEM wetland community. This community type expanded in the north east of the project site by 0.33 acres with the open water boundaries of the spring creek contracting since 2023.

Community # 5 Community Type: Elymus repens / Bromus inermis Acres: 1.28

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	0	Pascopyrum smithii	2
Poa pratensis	1	Potentilla anserina	0
Salix exigua	1		

Comments:

Upland community south of the road alignment and overpass. No significant changes were observed in this CT in 2024.

Community # 7 Community Type: Open Water / Aquatic macrophytes Acres: 4.06

Species	Cover class	Species	Cover class
Algae, green	3	Beckmannia syzigachne	1
Eleocharis palustris	1	Glyceria grandis	0
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, Sand Creek, and the small stream channel coming from the spring adjacent to the site. In 2024, open water areas decreased by 0.55 acres due to lower water levels and growth of vegetation along water edges. The most dramatic change in acreage was due to the narrowing of the spring creek channel in the north east part of the site.

Community # 8 Community Type: Salix exigua / Juncus balticus Acres: 1.44

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	2
Calamagrostis canadensis	2	Carex aquatilis	1
Carex nebrascensis	1	Carex pellita	2
Carex utriculata	2	Cicuta douglasii	1
Eleocharis palustris	2	Glyceria striata	1
Hordeum jubatum	1	Juncus balticus	3
Mentha arvensis	1	Salix exigua	5
Salix geyeriana	1	Salix lasiandra	1
Salix lutea	1	Scirpus microcarpus	1

Comments:

Existing wetland east and west of wetland cell 2, along the restored Sand Creek stream channel, and surrounding cell 5. Acreage of this community type increased slightly in 2024 (.17 acres) with changes in open water boundaries in cell 5 due to changed water levels and a slight modification to the wetland boundary east of cell 2.

Community # 9 Community Type: Juncus balticus / Elymus repens Acres: 2.97

Species	Cover class	Species	Cover class
grostis stolonifera	1	Alopecurus arundinaceus	1
romus inermis	1	Calamagrostis canadensis	0
irsium arvense	1	Elymus repens	3
ymus trachycaulus	1	Epilobium ciliatum	0
uphorbia esula	1	Geum macrophyllum	0
ordeum jubatum	1	Juncus balticus	3
ymus cinereus	1	Poa palustris	1
a pratensis	3	Potentilla anserina	0
ımex crispus	0	Salix exigua	1
lidago gigantea	1	Symphyotrichum lanceolatun	n 1
laspi arvense	1		

Comments:

The acreage of this wetland community increased by approximately 0.15 acres between 2023 and 2024 due to the decrease in sedge cover north of wetland cell 1, replacing parts of community type 4.

Community # 10 Community Type: Artemisia tridentata / Poa spp. Acres: 11.85

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	2
Poa pratensis	2	Poa secunda	3
Pseudoroegneria spicata	0	Symphyotrichum falcatum	2

Comments:

Upland shrubland. No changes to this community type observed between 2023 and 2024.

Community # 11 Community Type: Typha latifolia / Acres: 1.99

Species	Cover class	Species	Cover class
Alisma plantago-aquatica	0	Alopecurus aequalis	0
Bare Ground	0	Beckmannia syzigachne	0
Calamagrostis canadensis	0	Carex athrostachya	1
Carex nebrascensis	1	Carex pellita	1
Carex rosea	0	Carex utriculata	2
Cyrtorhyncha cymbalaria	1	Deschampsia caespitosa	0
Eleocharis palustris	2	Epilobium ciliatum	1
Glyceria grandis	1	Juncus balticus	1
Juncus bufonius	0	Juncus effusus	0
Mentha arvensis	1	Mud Flats	0
Open Water	2	Poa palustris	0
Potentilla anserina	1	Ranunculus sceleratus	0
Salix lasiandra	0	Salix lutea	1
Schoenoplectus tabernaemont	a 1	Scirpus acutus	1
Scirpus microcarpus	2	Typha latifolia	5
Comments:			

Typha latifolia expanded slightly (0.2 acres) in wetland cell 2 in 2024.

Community # 13 Community Type: Leymus cinereus / Elymus trachycaulus Acres: 5.6

Species	Cover class	Species	Cover class
Astragalus cicer	3	Bare Ground	1
Bromus inermis	1	Camelina microcarpa	0
Cirsium arvense	2	Elymus repens	1
Elymus trachycaulus	3	Epilobium ciliatum	0
Euphorbia esula	1	Festuca ovina	1
Hordeum jubatum	1	Juncus balticus	1
Lepidium draba	0	Leymus cinereus	4
Linaria vulgaris	1	Melilotus officinalis	1
Poa palustris	1	Poa pratensis	2
Poa secunda	1	Potentilla anserina	0
Silene latifolia	0	Sonchus arvensis	2
Thlaspi arvense	1	Trifolium longipes	0
_			

Comments:

Community dominated by FAC graminoids, located in upland areas around wetland cells 2, 4, and 5. The acreage of this CT decreased slightly by 0.06 between 2023 and 2024 due to a CT border shift east of wetland cell 2.

Community # 14 Community Type: Eleocharis palustris / Deschampsia caespitosa Acres: 0.	Community #	npsia caespitosa Acres:	ocharis palustris / Deschampsia caespitosa	0.63
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Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus aequalis	1
Bare Ground	1	Beckmannia syzigachne	1
Carex nebrascensis	1	Carex pellita	1
Carex rosea	0	Carex utriculata	1
Deschampsia caespitosa	2	Eleocharis palustris	3
oilobium ciliatum	1	Hordeum jubatum	1
uncus balticus	3	Mentha arvensis	1
)pen Water	1	Persicaria amphibia	1
Poa palustris	1	Potentilla anserina	2
Sonchus arvensis	0	Typha latifolia	1

Comments:

Located along the eastern, southern, and western edges of wetland cell 4. No acreage changes were observed in this community type in 2024.

Community # 15 Community Type: Poa pratensis / Elymus repens Acres: 0.25

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Astragalus cicer	1
Bare Ground	2	Bromus inermis	2
Cirsium arvense	0	Elymus repens	3
Elymus trachycaulus	2	Epilobium ciliatum	0
Euphorbia esula	0	Festuca ovina	1
Hordeum jubatum	0	Leymus cinereus	2
Linum lewisii	1	Poa palustris	1
Poa pratensis	4	Potentilla anserina	1
Puccinellia nuttalliana	1	Thlaspi arvense	1
Trifolium hybridum	1		

Comments:

Located east of wetland cell 4, on the upland slope above the cell. No changes were observed in this community type in 2024.

Community # 16 Community Type: Juncus balticus / Eleocharis palustris Acres: 1.26

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

Comments:

Located in wetland cell 2 and cell 3. The total cover for this CT slightly increased by 0.05 acres in 2024 due to a shift in the wetland cell 2 boundaries.

Community # 17 Community Type: Salix spp. / Acres: 0.77

Species	Cover class	Species	Cover class
Alnus incana	1	Carex pellita	1
Carex utriculata	1	Juncus balticus	2
Salix bebbiana	2	Salix boothii	2
Salix exigua	5	Salix geyeriana	2
Salix lutea	2	Veronica americana	1

Comments:

No acreage changes were observed for this community type in 2024.

Species	Cover class	Species	Cover class
Agrostis stolonifera	1	Alopecurus arundinaceus	5
Bare Ground	0	Bromus inermis	1
Carex aquatilis	0	Carex nebrascensis	2
Carex utriculata	1	Cicuta douglasii	2
Cirsium arvense	2	Cyrtorhyncha cymbalaria	1
Deschampsia caespitosa	1	Eleocharis palustris	0
Elymus repens	1	Epilobium ciliatum	0
Euphorbia esula	1	Glyceria striata	0
Hordeum jubatum	0	Iris missouriensis	0
Juncus balticus	4	Leymus cinereus	0
Linaria vulgaris	1	Mentha arvensis	0
Phalaris arundinacea	1	Poa palustris	0
Poa pratensis	3	Potentilla anserina	3
Salix bebbiana	0	Salix exigua	2
Salix lutea	0	Scirpus microcarpus	0
Sonchus arvensis	1	Symphyotrichum ciliatum	0
Thlaspi arvense	0	Typha latifolia	0
_			

Comments:

New wetland community type created in 2023 to document the encroachment of creeping meadow foxtail into wetland cell 3, previously documented as WT16. This community type, along with the wetland cell 3, contracted by .12 acres (approximately 60 ft) in 2024 on the northern boundary.

Community # 19 Community Type: Bromus tectorum / Acres: 0.61

Species	Cover class	Species	Cover class
Agropyron cristatum	1	Artemisia tridentata	1
Bare Ground	2	Bassia scoparia	1
Bromus tectorum	4	Camelina microcarpa	2
Descurainia sophia	1	Elymus trachycaulus	1
Lepidium perfoliatum	1	Leymus cinereus	1
Pascopyrum smithii	1	Thlaspi arvense	2

Comments:

Upland community composed of mostly early successional, non-native species commonly found on disturbed landscapes. In 2021 this community type was mapped as CT 2 (Descurainia sophia/Thlaspi arvense) along the Butte/Anaconda bike path. A second patch of was added in 2023 in the central portion of the site along the eastern boundary of the project area. In 2024 it was changed to CT 19 (Bromus tectorum) to better reflect the species composition.

Total Vegetation Community Acreage

50.1

VEGETATION TRANSECTS

Silicon Mountain	ntain Date:7/23/2024			
Transect Number:	_1 Com	Compass Direction from Start:322_		
Interval Data:				
Ending Station	13 Community Typ	e: Leymus cinereus / Elymus	trachycaulus	
Species	Cover class	Species	Cover clas	
Astragalus cicer	3	Bare Ground		
Cirsium arvense	2	Elymus repens		
Elymus trachycaulus	2	Festuca ovina		
Juncus balticus	1	Leymus cinereus		
Linaria vulgaris	1	Poa pratensis		
Poa secunda	2	Silene latifolia		
Sonchus arvensis	3	Thlaspi arvense		
Ending Station	35 Community Typ	e: Juncus balticus / Eleocharis	s palustris	
Species	Cover class	Species	Cover cla	
Bare Ground	1	Cicuta douglasii		
Cirsium arvense	0	Deschampsia caespitosa		
Eleocharis palustris	3	Juncus balticus		
Juncus bufonius	0	Juncus effusus		
Mentha arvensis	0	Poa palustris		
Potentilla anserina	3	Salix bebbiana		
Sonchus arvensis	2	Typha latifolia		
Ending Station	59 Community Typ	e: Typha latifolia /		
Species	Cover class	Species	Cover clas	
Beckmannia syzigachne	0	Carex utriculata		
Deschampsia caespitosa	0	Eleocharis palustris		
Glyceria grandis	0	Juncus balticus		
Juncus bufonius	0	Juncus effusus		
Open Water	0	Poa palustris		
Salix lasiandra	0	Scirpus microcarpus		
Typha latifolia	5			

Ending Station	264	Community Type:	Juncus balticus / Eleocharis p	alustris
Species		Cover class	Species	Cover class
Alopecurus arundinaceus		1	Alopecurus pratensis	1
Bare Ground		1	Beckmannia syzigachne	0
Carex nebrascensis		0	Carex pellita	0
Carex utriculata		0	Cirsium arvense	0
Deschampsia caespitosa		0	Eleocharis palustris	1
Elymus repens		1	Glyceria grandis	1
Hordeum jubatum		2	Juncus balticus	5
Juncus effusus		0	Phalaris arundinacea	1
Plantago major		0	Poa palustris	1
Potentilla anserina		3	Salix bebbiana	0
Salix lasiandra		0	Thlaspi arvense	0
Typha latifolia		1		
Ending Station	306	Community Type:	Leymus cinereus / Elymus tra	chycaulus
Species		Cover class	Species	Cover class
Astragalus cicer		2	Bare Ground	0
Bromus inermis		3	Camelina microcarpa	0
Elymus repens		2	Elymus trachycaulus	1
Euphorbia esula		0	Juncus balticus	2
Lepidium draba		0	Leymus cinereus	4
Linaria vulgaris		1	Poa pratensis	2
Sonchus arvensis		0	Thlaspi arvense	1
Trifolium longipes		0		
Ending Station	537	Community Type:	Alopecurus arundinaceus / Ju	ıncus balticus
Species		Cover class	Species	Cover class
Agrostis stolonifera		1	Alopecurus arundinaceus	5
Bare Ground		0	Carex aquatilis	2
Carex nebrascensis		1	Cicuta douglasii	2
Cirsium arvense		2	Deschampsia caespitosa	1
Eleocharis palustris		2	Epilobium ciliatum	0
Glyceria striata		1	Hordeum jubatum	1
Juncus balticus		3	Linaria vulgaris	1
Mentha arvensis		0	Phalaris arundinacea	1
Poa palustris		1	Poa pratensis	1
Potentilla anserina		3	Salix exigua	0
Scirpus microcarpus		1	Symphyotrichum ciliatum	0
Thlaspi arvense		0	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
Cirsium arvense	1	Elymus repens	1
Elymus trachycaulus	1	Euphorbia esula	3
Juncus balticus	1	Leymus cinereus	1
Linaria vulgaris	2	Phalaris arundinacea	0
Poa palustris	1	Poa pratensis	2
Potentilla anserina	1	Sonchus arvensis	1
Thlaspi arvense	0	Trifolium hybridum	1

Transect Notes:

Very little standing water along the transect in 2024. Baltic rush (Juncus balticus) cover increased significantly in both Juncus balticus/Eleocharis palustris community types. Minimal change in species presence since 2023 other than introduction of some noxious and nonnoxious weedy species.

Compass Direction from Start: Transect Number: **Interval Data: Ending Station** Poa pratensis / Elymus repens 8 Community Type: **Cover class** Cover class **Species Species** Agrostis stolonifera 2 Astragalus cicer Bare Ground 2 Bromus inermis 1 Cirsium arvense 1 Elymus repens 1 Elymus trachycaulus Euphorbia esula Festuca ovina 2 Hordeum jubatum 0 0 2 Leymus cinereus Poa palustris Poa pratensis 2 Potentilla anserina 1 Puccinellia nuttalliana Trifolium hybridum **Ending Station** Eleocharis palustris / Deschampsia caespitosa 42 Community Type: **Species** Cover class **Species** Cover class Agrostis stolonifera 0 Alopecurus aequalis 0 Bare Ground 1 Beckmannia syzigachne 0 Carex rosea 0 Deschampsia caespitosa 0 Eleocharis palustris 1 Epilobium ciliatum 1 Hordeum jubatum Juncus balticus 5 1 Mentha arvensis 1 Persicaria amphibia 0 Poa palustris 1 Potentilla anserina 2 Sonchus arvensis Typha latifolia **Ending Station** Typha latifolia / 206 Community Type: Cover class **Species** Cover class **Species** Alopecurus aequalis Bare Ground 0 1 Calamagrostis canadensis Carex athrostachya Carex nebrascensis 0 Carex pellita 1 Carex rosea 0 Deschampsia caespitosa 0 3 Eleocharis palustris Epilobium ciliatum 1 Juncus balticus 3 Mentha arvensis 1 Potentilla anserina 1 Ranunculus sceleratus Salix lutea Schoenoplectus tabernaemontani 2 Scirpus acutus 1 Scirpus microcarpus Typha latifolia 3

288

Ending Station	219 Community Type:	Bromus inermis / Poa pratensis	
Species	Cover class	Species	Cover class
Agrostis stolonifera	2	Alopecurus arundinaceus	1
Bare Ground	2	Bromus inermis	1
Cirsium arvense	1	Deschampsia caespitosa	0
Elymus repens	1	Elymus trachycaulus	1
Euphorbia esula	1	Juncus balticus	1
Lactuca serriola	1	Leymus cinereus	0
Phalaris arundinacea	1	Poa pratensis	2
Poa secunda	1	Potentilla anserina	1
Sonchus arvensis	3	Thlaspi arvense	1
Trifolium hybridum	1		

Transect Notes:

No open water observed along the transect in 2024. Several new species were observed in CT 3 and 11 along the transect. Species added to CT 3 included weedy or disturbance-loving species Canada thistle, reed canarygrass, and slender wheatgrass. Species added to CT 11 included native wetland species hardstem bulrush, panicled bulrush, and slender-leaved sedge.

Otherwise, there were minimal changes in species presence and cover since 2023.

PLANTED WOODY VEGETATION SURVIVAL

Silicon Mountain

Planting Type	#Planted #Alive 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. In 2023 and 2024 woody plant density had increased enough that it was difficult to identify and document survival of planted individuals.

WILDLIFE

Silicon Mountain

Birds

Were man-made nesting structures installed? Yes					
If yes, type of structure: Cylinder					
How many?3					
Are the nesting structures being used?	Yes				
Do the nesting structures need repairs?	No				

Nesting Structure Comments:

Nesting structures at the migitation site were installed by the local conservation group Montana Wetland and Waterfowl.

Species	#Observed	Behavior	Habitat
American Coot	6		
Canada Goose	28	F	
Killdeer	3	L,	
Red-winged Blackbird	3	FF	
Sandhill Crane	5	FO	
Yellow-headed Blackbir	d 1		
Swallow	20	F, N, FO	
Great Blue Heron	2	FO	
Mallard	14	BP, F	
Common Yellowthroat	3	FO	

Bird Comments

Unidentified duck with 5 ducklings observed within the site. Many swallows nesting under the overpass.

BEHAVIOR CODES

 $\mathbf{BP} = \mathbf{One}$ of a breeding pair $\mathbf{BD} = \mathbf{Breeding}$ display $\mathbf{F} = \mathbf{Foraging}$ $\mathbf{FO} = \mathbf{Flyover}$ $\mathbf{L} = \mathbf{Loafing}$ $\mathbf{N} = \mathbf{Nesting}$

HABITAT CODES

AB = Aquatic 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

Vole	1	No	No	No	
White-tailed Deer	5	No	Yes	Yes	Observed grazing. A doe and 3 fawns, one solitary.
Rabbit	1	No	No	No	Observed under willows.

Wildlife Comments:

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

Silicon Mountain

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 $\frac{1}{2}$ inch rebar or fencepost extending 2-3 feet above ground. Survey the location with a resource grade GPS and mark the location on the aerial photograph.

Photograph Checklist:

	One photograph for each of the four cardinal directions surrounding the wetland.
	At least one photograph showing upland use surrounding the wetland. If more than one upland
exists	then take additional photographs.
	At least one photograph showing the buffer surrounding the wetland.

\checkmark	One photograph from each	i end of the vegetation tr	ansect, showing the transect.

Photo #	Latitude	Longitude	Bearing	Description
DP01u	46.001755	-112.661405		Outside S side of wetland cell 5
DP01w	46.001754	-112.661323		Inside S side of wetland cell 5
DP02u	46.000989	-112.661525		Outside E side of wetland cell 4
DP02w	46.00101	-112.661582		Inside E side of wetland cell 4
DP03u	46.000066	-112.662502		N of wetland cell 1
DP03w	46.000047	-112.662707		N of wetland cell 1
DP04u	45.999884	-112.662982		Above Sand Creek corridor near W3
DP04w	45.999875	-112.662905		Sand Creek corridor near W3
DP05u	45.998931	-112.662877		W of wetland cell 1
DP05w	45.998985	-112.662796		W side of wetland cell 1
DP06u	45.998213	-112.662776		Outside S side of wetland cell 3
DP06w	45.998254	-112.662919		S side wetland cell 3
DP07u	45.997735	-112.662239		Outside S side wetland cell 2
DP07w	45.997797	-112.662223		S side wetland cell 2
DP08u	46.001934	-112.656551		Outside preservation wetland cell 13
DP08w	46.00199	-112.656502		S side of preservation wetland cell 13
DP09u	45.997879	-112.663499		Outside W6
DP09w	45.997813	-112.663482		Inside W6, W of RR tracks
DP10u	45.99557	-112.661151		South end of project area
DP10w	45.995589	-112.661124		South end of project area wetland
PP01	45.999491	-112.662103		West side of wetland cell 1
PP02	46.000011	-112.662608		Outside wetland cell 1
PP03	46.000968	-112.662401		West side of wetland cell 4
PP04	46.002112	-112.660756		East side of constructed wetland cell 5

PP05	45.998744	-112.663401	North end of T-1, constructed wetland cell 3
PP06	45.997443	-112.662213	South end of T-1, constructed wetland cell 3
PP07	45.998191	-112.664766	Cell 6, west side of tracks, south of overpass
PP08	45.995042	-112.661188	Southern edge of cell 6 - upstream end
PP09	45.996325	-112.661378	Northern edge of cell 6 - downstream end
PP10	45.996374	-112.662142	West side of wetland cell 3
PP11	45.998698	-112.661852	Sand Creek
PP12	45.998482	-112.662672	Sand Creek
PP13	45.999387	-112.663073	Sand Creek
PP14	45.999444	-112.662519	Headcut
PP15	45.999663	-112.662335	Headcut
PP16	45.999676	-112.662992	Headcut
PP17	46.001863	-112.661467	Northern end of Sand Creek

Comments:

Silicon Mountain

acreage.

ADDITIONAL ITEMS CHECKLIST

	Hydrology
✓ ✓ Iines,	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 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
✓ Ma	o vegetation community boundaries
✓ Con	nplete Vegetation Transects
	Soils
✓ Ass	sess soils
	Wetland Delineations
V	Delineate wetlands according to applicable USACE protocol (1987 form or
Supple ✓	ement) Delineate wetland – upland boundary onto aerial photograph.
Wetlar	nd Delineation Comments
The	e total wetland acreage delineated in 2024, including pre-existing wetland areas, was 18.89 acres.
	Functional Assessments
✓ forms.	Complete and attach full MDT Montana Wetland Assessment Method field
Function	onal Assessment Comments:

20

Created Wetland Cells 1 and 5; Cells 2, 3, and 4; Sand Creek; and Preservation Wetlands were classified as Category II wetlands. Wetland Cell 6 is classified as a Category III wetland. Functional assessment completed on created cells and preservation wetlands. Open water areas contributed to AA

Maintenance

Were man-made nesting structure installed at this site? Yes

If yes, do they need to be repaired? No

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? No

If yes, are the structures in need of repair?

If yes, describe the problems below.

There is a fence that is partially down on the boundary of the small, southmost parcel. Fence is adjacent to the railroad in the northwest corner of the parcel.

In 2023, it was noted that the outlet to wetland cell 1 might be experiencing some erosion. No note of this issue was made in 2024.

Project/Site: Silicon Mountain	c	City/County	Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	n			State: Montana	Sampling Point: DP01u
		Section, To	wnship, Rar	nge: S24 T3N R9W	. •
Landform (hillslope, terrace, etc.): Stream Terrace				=	Slope (%): 5
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				· · ·	
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologysi	-				resent? Yes No
Are Vegetation, Soil, or Hydrologyn	aturally prob	olematic?	(If ne	eded, explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map	showing	samplin	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	o				
Hydric Soil Present? Yes No	·		e Sampled in a Wetlan		No 🗸
Wetland Hydrology Present? Yes No		With	III a Wellali	iu: 165	
Remarks:					
Upland data point on south side of ce	ell 5.				
VEGETATION – Use scientific names of plant	ts.				
Tree Stratum (Plot size: 5 ft)	Absolute % Cover			Dominance Test works	
1				Number of Dominant Sp That Are OBL, FACW, of	
2.					(*,
3.				Total Number of Domina Species Across All Stra	•
4				Percent of Dominant Sp	nacias
Capling/Charle Charles (Diet sing, 15 ft		= Total Co	ver	That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft)				Prevalence Index worl	ksheet:
1 2				Total % Cover of:	
3.				-	x 1 = 0
4				FACW species 10	x 2 = 20
5.				FAC species 20	x 3 = 60
		= Total Co	ver		x 4 = 8
Herb Stratum (Plot size: 5 ft)					x = 65
1. Leymus cinereus	20		FAC	Column Totals: 45	(A) <u>153</u> (B)
2. Bromus inermis	10		UPL	Prevalence Index	
3. Juncus balticus 4 Thlaspi arvense	10 3		FACW	Hydrophytic Vegetation	
5 Sisymbrium altissimum	2		UPL FACU	1 - Rapid Test for H	
6. Unidentified forb	1		TACO	✓ 2 - Dominance Tes	
7				3 - Prevalence Inde	
8.					daptations ¹ (Provide supporting s or on a separate sheet)
9.				5 - Wetland Non-Va	·
10.				Problematic Hydrop	ohytic Vegetation¹ (Explain)
11.					and wetland hydrology must
	40	= Total Cov	er	be present, unless distu	irbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation Present? Yes	s <u>/</u> No
% Bare Ground in Herb Stratum 54		= Total Cov	er		
Remarks:				I	
Upland data point dominated by UPL	, FAC, a	and FA	CW spe	ecies.	

SOIL Sampling Point: DP01u

Profile Desc	ription: (Describe	e to the depth	needed to docum	nent the i	ndicator	or confirm	the absence	e of indicators.)	_
Depth	Matrix			x Feature:	S				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	_
0 - 18	10YR 3/2	95					Loamy Sand	Mixed profile. See remarks.	
0 - 18		5					Sandy Loam	Mixed profile. See remarks.	
-									_
									_
									-
									_
									_
									_
									_
•	oncentration, D=De					d Sand Gr		cation: PL=Pore Lining, M=Matrix.	
-	Indicators: (Appli	cable to all Li	RRs, unless other Sandy Redox (\$		ed.)			ors for Problematic Hydric Soils ³ :	
Histosol	, ,	_			m Muck (A10)				
Black Hi	oipedon (A2)	_	Stripped MatrixLoamy Mucky N		1) (evcent	MIRA 1)		d Parent Material (TF2) y Shallow Dark Surface (TF12)	
	n Sulfide (A4)	_	Loamy Gleyed I	•		IIILIKA I)		er (Explain in Remarks)	
	d Below Dark Surfa	ce (A11)	Depleted Matrix	•	,		_		
Thick Dark Surface (A12) Redox Dark Surface (F6)								ors of hydrophytic vegetation and	
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)								and hydrology must be present,	
-	Gleyed Matrix (S4) Layer (if present):	_	_ Redox Depress	ions (F8)			unles	ss disturbed or problematic.	
Type:	-ayer (ii present).								
	ches):						Hydric Soil	I Present? Yes No_	
Remarks:							Hyuric 30ii	i Fieseiit: TesNO	-
	nstruction. Ot	-	_		-			ing that this area was disturbes observed.	
Wetland Hve	drology Indicators	 3:							
_	cators (minimum of		check all that apply	y)			Seco	ndary Indicators (2 or more required)	
Surface	Water (A1)		Water-Stai	ned Leave	es (B9) (e :	xcept	V	Vater-Stained Leaves (B9) (MLRA 1, 2,	
· · · · · · · · · · · · · · · · · · ·	iter Table (A2)			1, 2, 4A, a	. , ,	•		4A, and 4B)	
Saturation	on (A3)		Salt Crust	(B11)			0	Orainage Patterns (B10)	
Water M	arks (B1)		Aquatic Inv		. ,		[Ory-Season Water Table (C2)	
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
	oosits (B3)				_	_		Geomorphic Position (D2)	
_	at or Crust (B4)		Presence					Shallow Aquitard (D3)	
	osits (B5)		Recent Iro					FAC-Neutral Test (D5)	
	Soil Cracks (B6) on Vis ble on Aeria	I Imagany (P7)	Stunted or Other (Exp		•	I) (LKK A		Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)	
	Vegetated Conca			naiii iii Ne	illaiks)		'	Tost-Heave Huminocks (DT)	
Field Obser		ve canace (Be	· /						
Surface Water		Yes No	Depth (inc	ches):					
Water Table			Depth (inc						
Saturation P			Depth (inc				and Hydrolog	y Present? Yes No	
(includes car	oillary fringe)								_
Describe Re	corded Data (strea	m gauge, mon	itoring well, aerial p	ohotos, pr	evious ins	pections),	if available:		
Remarks:									
		المناهمين		ا د د دا					
INO EAIGE	ence of wetl	and nydr	ology obse	ved.					

Project/Site: Silicon Mountain	(City/County	Silver Bo	ow County Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation		-		State: Montana Sampling Point: DP01w
Investigator(s): McEldowney	;	Section, To	wnship, Ra	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Closed Depression				
				Long: -112.6613247 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Yes	No_	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology si				_
Are Vegetation, Soil, or Hydrology na				
SUMMARY OF FINDINGS - Attach site map s	showing	samplin	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No				
Hydric Soil Present? Yes No			e Sampled in a Wetlan	
Wetland Hydrology Present? Yes No Remarks:	<u> </u>	******		165 165
				l ef also sites
PSS, depressional wetland fringe of o	cell 5 at	t the no	rth end	of the site.
VEGETATION – Use scientific names of plant	s.			
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total Co	ver	That Are OBL, FACW, or FAC: 100.00 (A/B)
1. Salix lasiandra	20	V	FACW	Prevalence Index worksheet:
2. Salix exigua	15	~	FACW	Total % Cover of: Multiply by:
3				OBL species $\frac{10}{20}$ $\times 1 = \frac{10}{100}$
4.				FACW species 90 $x 2 = 180$
5				FAC species $\frac{10}{2}$ x 3 = $\frac{30}{2}$
	35	= Total Co	ver	FACU species $0 \times 4 = 0$
Herb Stratum (Plot size: 5 ft r)				UPL species $0 \times 5 = 0$
1. Juncus balticus	40		FACW	Column Totals: <u>110</u> (A) <u>220</u> (B)
2. Mentha arvensis	<u>15</u>		FACW	Prevalence Index = B/A = 2.00
3. Potentilla anserina	7		OBL	Hydrophytic Vegetation Indicators:
4. Alopecurus arundinaceus	5		FAC	
5. Poa pratensis	5		FAC	
6. Eleocharis palustris 7 Carex nebrascensis	2		OBL OBL	✓ 3 - Prevalence Index is ≤3.0 ¹
· · ·				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
8				5 - Wetland Non-Vascular Plants ¹
9				Problematic Hydrophytic Vegetation¹ (Explain)
10				¹Indicators of hydric soil and wetland hydrology must
11	7-	= Total Cov	/or	be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		_ 10tal 00t	CI .	
1				Hydrophytic
2				Vegetation Present? Yes No
% Bare Ground in Herb Stratum 25		= Total Cov	⁄er	100
Remarks:				
Willow- and Paltic ruch dominated fr	ingo or	ound o	all 5	
Willow- and Baltic rush-dominated fr	nige af	Juliu C	cii 3.	

SOIL Sampling Point: DP01w

·	Deday Features	The absence of indicators.)
Depth Matrix (inches) Color (moist) %	Redox Features Color (moist) % Type ¹ Loc ²	
0 - 16 10YR 4/2		Sandy Loam Sulfidic odor.
		<u> </u>
<u> </u>		
-		
-		
1		2 2
Type: C=Concentration, D=Depletion, I Hydric Soil Indicators: (Applicable to	RM=Reduced Matrix, CS=Covered or Coated Sand	Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ :
		•
Histosol (A1) Histic Epipedon (A2)	Sandy Redox (S5) Stripped Matrix (S6)	2 cm Muck (A10) Red Parent Material (TF2)
Black Histic (A3)	Loamy Mucky Mineral (F1) (except MLRA	
✓ Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11)		
Thick Dark Surface (A12)	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	wetland hydrology must be present,
Sandy Gleyed Matrix (S4)	Redox Depressions (F8)	unless disturbed or problematic.
Restrictive Layer (if present):		
Type:	<u></u>	
Depth (inches):		Hydric Soil Present? Yes No
HYDROLOGY Wetland Hydrology Indicators:		
Primary Indicators (minimum of one requ	uired; check all that apply)	Secondary Indicators (2 or more required)
Surface Water (A1)	Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
High Water Table (A2)	MLRA 1, 2, 4A, and 4B)	4A, and 4B)
✓ Saturation (A3)	Salt Crust (B11)	Drainage Patterns (B10)
Water Marks (B1)	Aquatic Invertebrates (B13)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	✓ Hydrogen Sulfide Odor (C1)	Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)	Oxidized Rhizospheres along Living R	
✓ Algal Mat or Crust (B4)	Presence of Reduced Iron (C4)	Shallow Aquitard (D3)
Iron Deposits (B5) Surface Soil Cracks (B6)	Recent Iron Reduction in Tilled Soils (Stunted or Stressed Plants (D1) (LRR	• • •
Inundation Vis ble on Aerial Imagery		Frost-Heave Hummocks (D7)
Sparsely Vegetated Concave Surface		Trost-fleave fluitiflocks (D7)
Field Observations:	(50)	
	No Depth (inches):	
	No Depth (inches): 12	
		etland Hydrology Present? Yes No
(includes capillary fringe)	, monitoring well, aerial photos, previous inspections	
Remarks:		
Algal mat observed 6 ft to the surface and a high		l in cell 5, 12 ft to north. Saturated

Project/Site: Silicon Mountain		City/County	nty: Silver Bow County Sampling Date: 2024-07-23					
Applicant/Owner: Montana Dept. Of Transportation		State: Montana Sampling Point: DP02u						
Investigator(s): McEldowney	S	Section, To	wnship, Rar	nge: S24 T3N R9W				
				ave, convex, none): Convex Slope (%): 10				
Subregion (LRR): E 43B	Lat: 46.0	0009872		Long: -112.6615252	Datum: NAD 83			
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				=				
Are climatic / hydrologic conditions on the site typical for this	time of year	ır? Yes	No_	(If no, explain in R	emarks.)			
Are Vegetation, Soil, or Hydrology si	-				present? Yes No			
Are Vegetation, Soil, or Hydrology na	-							
SUMMARY OF FINDINGS – Attach site map s								
Hydrophytic Vegetation Present? Yes No	·							
Hydric Soil Present? Yes No	·		e Sampled in a Wetlan		No 🗸			
Wetland Hydrology Present? Yes No	·	With		ur res	NO			
Remarks:								
Upland data point on a sideslope eas	t of cel	l 4.						
VEGETATION – Use scientific names of plant	s.							
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test work				
1				Number of Dominant Sp That Are OBL, FACW, of				
2.								
3				Total Number of Domina Species Across All Stra	4			
4				Percent of Dominant Sp	necies			
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Co	ver	That Are OBL, FACW, of				
1				Prevalence Index worl	ksheet:			
2.				Total % Cover of:				
3.					x 1 = 0			
4.					x 2 = 0			
5.				FAC species 1	x 3 = <u>3</u>			
		= Total Co	ver	-	x 4 = 80			
Herb Stratum (Plot size: 5 ft r)					x 5 = 25			
1. Festuca idahoensis	10		FACU	Column Totals: 26	(A) <u>108</u> (B)			
2. Bromus inermis	5		UPL	Prevalence Index	= B/A = <u>4.15</u>			
3. Pascopyrum smithii	5		FACU	Hydrophytic Vegetation	on Indicators:			
4. Poa secunda	5		FACU	1 - Rapid Test for H	Hydrophytic Vegetation			
5. Agrostis stolonifera	1		FAC	2 - Dominance Tes				
6				3 - Prevalence Inde				
7					Adaptations ¹ (Provide supporting s or on a separate sheet)			
8				5 - Wetland Non-Va	• • • • • • • • • • • • • • • • • • • •			
9					phytic Vegetation ¹ (Explain)			
10					and wetland hydrology must			
11	00	= Total Cov		be present, unless distu				
Woody Vine Stratum (Plot size:)		- Total Cov	CI					
1				Hydrophytic				
2				Vegetation	. N. V			
	:		/er	Present? Yes	s No			
% Bare Ground in Herb Stratum 74 Remarks:								
Upland plant community.								

SOIL Sampling Point: DP02u

Profile Desc	ription: (Describ	e to the dep	th neede				or confirm	the absence	of indicato	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color	Redox (moist)	Features %	Type ¹	Loc ²	Texture		Remarks	
0 - 16	10YR 3/2	100		(moist)	/0	Type		Sandy Loam		Remains	
	10111 0/2										
	-										
-				_							
	-										
1Type: C=C	oncentration, D=De	nletion RM=	=Reduced	Matrix CS	=Covered	or Coate	d Sand Gr	ains ² l o	cation: PI =	Pore Lining, N	 ∕I=Matriy
	ndicators: (Appl						u Sanu Ora			lematic Hydr	
Histosol				dy Redox (S		,			m Muck (A10	•	
Histic Epipedon (A2) Stripped Matrix (S6)									d Parent Ma	,	
Black Hi			Loar	ny Mucky M	lineral (F1) (except	MLRA 1)	Ver	y Shallow D	ark Surface (T	F12)
	n Sulfide (A4)			ny Gleyed N)		Oth	er (Explain i	n Remarks)	
	Below Dark Surfa	ace (A11)		eted Matrix				31	6		
Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Pepleted Dark Surface (F7)									, ,	ohytic vegetati yy must be pre	
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8)										or problemati	
	ayer (if present):			<u> </u>	. ,						
Type:											
Depth (inc	ches):							Hydric Soi	I Present?	Yes	No
Remarks:											
	c soil indica	itors obs	serve	d. 							
HYDROLO	GY										
Wetland Hyd	drology Indicators	s:									
Primary India	ators (minimum of	one required	d; check a	all that apply	′)			<u>Seco</u>	ndary Indica	tors (2 or mor	e required)
	Water (A1)			Water-Stai	ned Leave	es (B9) (e x	xcept	\	Vater-Staine	d Leaves (B9) (MLRA 1, 2,
_	ter Table (A2)				l, 2, 4A, a	nd 4B)			4A, and 4	•	
Saturation	, ,			Salt Crust	,	(5.46)			Orainage Pat		
	arks (B1)			Aquatic Inv					-	Water Table (
	nt Deposits (B2)			Hydrogen S			Living Doo				I Imagery (C9)
	oosits (B3) It or Crust (B4)			Presence of		_	_	ts (C3) (Shallow Aqui		
	osits (B5)			Recent Iron					AC-Neutral		
	Soil Cracks (B6)			Stunted or						1001 (20) 10unds (D6) (I	LRR A)
	on Vis ble on Aeria	I Imagery (B		Other (Exp		•	., (=:::::,			Hummocks (E	
· · · · · · · · · · · · · · · · · · ·	Vegetated Conca		. —	` '		,				`	,
Field Observ		<u> </u>									
Surface Water	er Present?	Yes	No 🖊	Depth (inc	:hes):						
Water Table	Present?	Yes	No 🖊	Depth (inc	:hes):						
Saturation Pr	esent?	Yes	No 🔽	Depth (inc	:hes):		Wetla	and Hydrolog	y Present?	Yes	_ No <u> </u>
(includes cap		m aauaa ma	nitarina u	vall parial m	hataa nr	avious iss	nastiona) i	if available:			
Describe Rec	corded Data (strea	m gauge, mc	mitoring v	veii, aeriai p	motos, pre	evious irisį	pections), i	ii avaliable.			
Domarka											
Remarks:	_		_	_							
No evide	ence of wet	land hyc	drolog	y obser	ved.						

Project/Site: Silicon Mountain	(City/County:	Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	า			State: Montana	Sampling Point: DP02w
				nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Closed Depression				_	e Slope (%): 1
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologysi	-				
Are Vegetation, Soil, or Hydrology na					
SUMMARY OF FINDINGS - Attach site map s	showing	sampling	g point le	ocations, transects	, important features, etc.
Wetland Hydrology Present? Yes No			e Sampled in a Wetlan		No
Remarks:					
PEM, depressional wetland data poin	t on ea	st side	of cell	4.	
VEGETATION – Use scientific names of plant	s.				
- 30 ft r	Absolute			Dominance Test work	sheet:
		Species?		Number of Dominant Sp	
1				That Are OBL, FACW, o	or FAC: 1 (A)
3.				Total Number of Domini Species Across All Stra	4
4.					
		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	or FAC: 100.00 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r)	2		EACIA/	Prevalence Index world	
1. Salix bebbiana 2. Salix lasiandra	2 2		FACW FACW	Total % Cover of:	Multiply by:
				•	x 1 = 65
3				FACW species 11	
4 5.				FAC species 8	x 3 = <u>24</u>
0		= Total Co	vor	· ·	x 4 = <u>20</u>
Herb Stratum (Plot size: 5 ft r	<u> </u>	- Total Co	VCI		x 5 = <u>0</u>
1. Eleocharis palustris	55	~	OBL	Column Totals: 89	(A) <u>131</u> (B)
2. Potentilla anserina	10		OBL	Prevalence Index	= B/A = 1.47
3. Mentha arvensis	7		FACW	Hydrophytic Vegetation	· · · · · · · · · · · · · · · · · · ·
4. Alopecurus arundinaceus	5		FAC	✓ 1 - Rapid Test for H	Hydrophytic Vegetation
5. Sonchus arvensis	5		FACU	✓ 2 - Dominance Tes	t is >50%
6. Hordeum jubatum	2		FAC	✓ 3 - Prevalence Inde	ex is ≤3.0 ¹
7. Elymus repens	1		FAC		Adaptations ¹ (Provide supporting
8					s or on a separate sheet)
9				5 - Wetland Non-Va	
10				l 	phytic Vegetation ¹ (Explain)
11	0.5			be present, unless distu	I and wetland hydrology must urbed or problematic.
Woody Vine Stratum (Plot size:)	00	= Total Cov	er		
1				Hydrophytic	
2.				Vegetation	v
		= Total Cov		Present? Yes	s No
% Bare Ground in Herb Stratum 15					
Remarks:					
PEM wetland dominated by spikerusl	n in this	s location	on.		

SOIL Sampling Point: DP02w

Profile Desc	ription: (Describe	to the de				or confirm	the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	edox Feature %	s Type ¹	Loc ²	Texture	Remarks
0 - 16	10YR 4/1	98	N 4/0	2	D D	M	Loam	Sulfidic odor at 8 inches.
	1011(4/1		11 4/0			171	Loam	Sumaic odor at 6 menes.
								
						. ———		
						·		
	_							
-								
_						·		
¹ Type: C=Co	oncentration, D=De	oletion. RM	I=Reduced Matrix	. CS=Covere	d or Coat	ed Sand Gr	ains. ² Loc	cation: PL=Pore Lining, M=Matrix.
	ndicators: (Appli					ou curiu cir		rs for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Red	ox (S5)			2 cn	n Muck (A10)
Histic Ep	pipedon (A2)		Stripped Ma	atrix (S6)				Parent Material (TF2)
Black His	` '			ky Mineral (F		t MLRA 1)		/ Shallow Dark Surface (TF12)
	n Sulfide (A4)			ed Matrix (F2	2)		Oth	er (Explain in Remarks)
	l Below Dark Surfa ark Surface (A12)	ce (A11)	Depleted M				3Indicate	rs of hydrophytic vegetation and
	lucky Mineral (S1)			k Surface (F6) ark Surface (F				nd hydrology must be present,
-	eleyed Matrix (S4)			ressions (F8)	')			s disturbed or problematic.
	ayer (if present):			()				
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes No
Remarks:								
O 16. 1.								
Sulfiale (odor at 8 inc	nes.						
	CV							
HYDROLO								
-	drology Indicators						0	
	ators (minimum of	one require	•		(50) (ndary Indicators (2 or more required)
	Water (A1)			-Stained Leav		except	W	/ater-Stained Leaves (B9) (MLRA 1, 2,
_	ter Table (A2)			RA 1, 2, 4A, a	and 4B)		5	4A, and 4B)
✓ Saturatio	, ,		Salt C		- (D40)			rainage Patterns (B10)
	arks (B1)			c Invertebrate gen Sulfide O				ry-Season Water Table (C2) aturation Visible on Aerial Imagery (C9)
	nt Deposits (B2)			-		Living Doo		eomorphic Position (D2)
-	oosits (B3) It or Crust (B4)			nce of Reduce	-	_	· · · —	hallow Aquitard (D3)
	osits (B5)			t Iron Reducti				AC-Neutral Test (D5)
-	Soil Cracks (B6)			d or Stressed				aised Ant Mounds (D6) (LRR A)
	on Vis ble on Aerial	Imagery (F		(Explain in Re) (LIXIX A)	·	rost-Heave Hummocks (D7)
	Vegetated Concav			(Lxpiaiii iii ixe	iliaiks)		'	rost-rieave riuminocks (D1)
Field Observ		Counacc	(50)					
Surface Water		/es	No Depth	(inches)				
Water Table			No Depth			_		
Saturation Pr			No Depti				and Hydrolog	y Present? Yes No
(includes cap	oillary fringe)							, 11000iii. 100 <u></u> 110 <u></u>
Describe Red	corded Data (stream	n gauge, m	onitoring well, ae	rial photos, pr	evious in	spections), i	if available:	
Remarks:								
Saturate	d and sulfid	ic odoi	at 8 inche	S.				

Project/Site: Silicon Mountain	City	/County:	Silver Bo	w County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	1			State: Montana	Sampling Point: DP03u
Investigator(s): McEldowney	Sec	ction, Tow	nship, Rar	nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Stream Terrace				-	Slope (%): 0
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				· ·	
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrology sig	-				present? Yes No
Are Vegetation, Soil, or Hydrology na	aturally proble	matic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	howing sa	mpling	point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No					
Hydric Soil Present? Yes No			Sampled a Wetlan		No 🗸
Wetland Hydrology Present? Yes No		Within	i a wellan	ur res	NO
Remarks:					
Upland data point at north end of cell	1.				
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r		ominant		Dominance Test work	sheet:
	% Cover Sp			Number of Dominant Sport That Are OBL, FACW, or	
1					(, ,
3.				Total Number of Domin Species Across All Stra	•
4.				·	
45.64	= 7	Total Cov	er	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft r				Prevalence Index wor	ksheet:
1				Total % Cover of:	Multiply by:
2				-	x 1 = 0
3 4			-	FACW species 25	x 2 = 50
5				FAC species 0	x 3 = 0
	= 7	Total Cov	er		x 4 = 20
Herb Stratum (Plot size: 5 ft r)					x = 130
1. Bromus inermis	25		UPL	Column Totals: <u>56</u>	(A) <u>200</u> (B)
2. Juncus balticus	<u>25</u> _		FACW	Prevalence Index	
3. Pascopyrum smithii 4. Alyssum alyssoides	<u>5</u>		FACU_	Hydrophytic Vegetation	
			UPL	1 - Rapid Test for H	
5				2 - Dominance Tes	4
6				3 - Prevalence Inde	
7 8					Adaptations ¹ (Provide supporting s or on a separate sheet)
9.				5 - Wetland Non-Va	· · · · · · · · · · · · · · · · · · ·
10					phytic Vegetation¹ (Explain)
11.					l and wetland hydrology must
	F0	otal Cove	er	be present, unless distu	irbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation Present? Yes	s No <u> </u>
% Bare Ground in Herb Stratum 44	= T	otal Cove	er		
Remarks:					
Upland data point dominated by smo	oth brom	ne and	l Baltic	rush.	

SOIL Sampling Point: DP03u

Profile Desc	ription: (Describ	e to the dep	oth neede				r confirm	the absence	of indicato	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color	Redox (moist)	Features %	Type ¹	Loc ²	Texture		Remarks	
0 - 16	10YR 3/2	100		(moist)		i ype	LUC	Silt Loam	Drv	remarks	
	10111 0/2							One Louin	Diy.		
									-		
_											
_											
-											
_											
¹Type: C=Co	oncentration, D=D	enletion RM	=Reduced	I Matrix CS	=Covered	or Coated	Sand Gra	ains ² l or	cation: PI =	Pore Lining, M	 ∕I=Matrix
	ndicators: (App						d Carla Cit			lematic Hydr	
Histosol				dy Redox (S		•			n Muck (A10	-	
Histic Epipedon (A2) Stripped Matrix (S6)								l Parent Mat	*		
Black His	` '			ny Mucky M			MLRA 1)		•	ark Surface (T	F12)
	n Sulfide (A4)	(4.4.4)		ny Gleyed N)		Oth	er (Explain i	n Remarks)	
	d Below Dark Surf	ace (A11)		eted Matrix	. ,			3Indicate	ro of budror	ohytic vegetati	ion and
Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7)									y must be pre		
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8)										or problemation	
Restrictive L	ayer (if present)	:									
Type:											
Depth (inc	ches):							Hydric Soil	Present?	Yes	No 🔽
Remarks:											
No hydri	c soil indica	ators ob	serve	d. Soil i	s dry.						
HYDROLO	GY										
Wetland Hyd	drology Indicator	s:									
Primary Indic	ators (minimum o	f one require	d; check a	all that apply	<u>')</u>			Secor	ndary Indica	tors (2 or mor	e required)
Surface	Water (A1)		_	Water-Stair	ned Leave	es (B9) (ex	cept	v	Vater-Staine	d Leaves (B9)) (MLRA 1, 2,
High Wa	ter Table (A2)			MLRA 1	, 2, 4A, a	nd 4B)			4A, and 4	В)	
Saturatio	• •			Salt Crust (rainage Pat		
	arks (B1)			Aquatic Inv					-	Water Table (0	
	nt Deposits (B2)			Hydrogen S				· <u></u>			I Imagery (C9)
	posits (B3)					_	_	ts (C3) G			
	it or Crust (B4)			Presence of					hallow Aqui		
	osits (B5)			Recent Iron Stunted or					AC-Neutral		DD A\
	Soil Cracks (B6) on Vis ble on Aeria	al Imagery (B		Other (Exp		•) (LKK A)	· <u></u>		lounds (D6) (l Hummocks (D	
	Vegetated Conca			Other (Exp		marks)		'	103t-11cave	riammocks (E	,, ,
Field Observ			(20)								
Surface Water		Yes	No 🗸	Depth (inc	hes):						
Water Table		Yes									
Saturation Pr		Yes	_					and Hydrolog	v Present?	Yes	No 🗸
(includes cap	oillary fringe)				•						<u> </u>
Describe Red	corded Data (strea	ım gauge, m	onitoring v	vell, aerial p	hotos, pre	evious insp	ections), i	f available:			
Remarks:											
No evide	ence of wet	land hy	drolog	y obser	ved.						

Project/Site: Silicon Mountain	(City/County	Silver Bo	ow County Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. of Transportation				State: Montana Sampling Point: DP03w
Investigator(s): Richard Baumgarten				
Landform (hillslope, terrace, etc.): Shoulder			•	
				Long: -112.6627147 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				
Are climatic / hydrologic conditions on the site typical for this				
Are Vegetation, Soil, or Hydrology si				_
Are Vegetation, Soil, or Hydrology na				
SUMMARY OF FINDINGS – Attach site map s	showing	samplin	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No)			
Hydric Soil Present? Yes No	e Sampled in a Wetlan			
Wetland Hydrology Present? Yes No	<u> </u>	With		105 <u> </u>
Remarks:		_		
Wetland data point located near right	t bank (of cree	K.	
VEGETATION – Use scientific names of plant	s.			
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
2.				
3.				Total Number of Dominant Species Across All Strata: 3 (B)
4				
Cooling/Object Objectives (Diet sings 15 ft r		= Total Co	ver	Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)
Sapling/Shrub Stratum (Plot size: 15 ft r) 1. Salix lasiandra	10	~	FACW	Prevalence Index worksheet:
				Total % Cover of: Multiply by:
2				OBL species <u>33</u> x 1 = <u>33</u>
4				FACW species 55 $\times 2 = 110$
5				FAC species 6 x 3 = 18
	10	= Total Co	ver	FACU species $\frac{1}{x}$ $x = \frac{4}{x}$
Herb Stratum (Plot size: 5 ft r)		Total 00	VCI	UPL species 5 $x = 25$
1. Juncus balticus	40		FACW	Column Totals: <u>100</u> (A) <u>190</u> (B)
2. Carex nebrascensis	20		OBL	Prevalence Index = B/A = 1.90
3. Carex pellita	10		OBL	Hydrophytic Vegetation Indicators:
4. Cardaria Draba	5		UPL	1 - Rapid Test for Hydrophytic Vegetation
5. Mentha arvensis	5		FACW	
6. Poa pratensis	5		FAC	✓ 3 - Prevalence Index is ≤3.0 ¹
7. Scirpus microcarpus	3		OBL FAC	4 - Morphological Adaptations ¹ (Provide supporting
8. Cirsium arvense Sonchus arvensis	1		FACU	data in Remarks or on a separate sheet) 5 - Wetland Non-Vascular Plants ¹
o			FACU	Problematic Hydrophytic Vegetation¹ (Explain)
10				¹Indicators of hydric soil and wetland hydrology must
11	90	= Total Cov		be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)		- 10tal C01	CI	
1				Hydrophytic
2				Vegetation Present? Yes No
% Bare Ground in Herb Stratum 10		= Total Cov	/er	100
Remarks:				
Vogotation dominated by Politic rush				
Vegetation dominated by Baltic rush.				

SOIL Sampling Point: DP03w

Profile Desc	ription: (Describe	to the de	oth needed to docur			onfirm	the absence	of indicators.)			
Depth	Matrix	0/		x Features	S	oc²	Tauduma	Demodus			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹ L	_OC	<u>Texture</u>	Remarks			
0-4	10YR 3/2	100	10VD 4/0				Silty Clay Loam				
4 - 16	10YR 4/1	95	10YR 4/6	_ <u>5</u>	<u>c</u>		Sandy Clay Loam				
	-										
-											
1T C-C	tration D-Don	DM	I-Dadward Matrix C	- ——— 			21	etien. DI -Dave Lining M-Matrix			
			I=Reduced Matrix, CS I LRRs, unless other			and Gra		ration: PL=Pore Lining, M=Matrix. rs for Problematic Hydric Soils ³ :			
Histosol		abio to ui	Sandy Redox (ou.,			n Muck (A10)			
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)			
Black Hi			Loamy Mucky N		1) (except ML	-RA 1)		Shallow Dark Surface (TF12)			
Hydroge	n Sulfide (A4)		Loamy Gleyed	Matrix (F2	2)		Othe	er (Explain in Remarks)			
	Below Dark Surfac	e (A11)	<u>✓</u> Depleted Matrix	. ,			a				
	ark Surface (A12)		Redox Dark Su	, ,				rs of hydrophytic vegetation and			
	lucky Mineral (S1) leyed Matrix (S4)		Depleted Dark		-7)			nd hydrology must be present, s disturbed or problematic.			
	ayer (if present):		Redox Depress	10113 (1 0)			unics	s disturbed of problematic.			
Type:	, ,										
Depth (inc							Hydric Soil	Present? Yes No			
Remarks:	,										
Depleted	d matrix obse	ervea.									
	OV										
HYDROLO											
-	drology Indicators:						_				
-		one require	ed; check all that appl					idary Indicators (2 or more required)			
	Water (A1)				es (B9) (exce	pt	W	/ater-Stained Leaves (B9) (MLRA 1, 2,			
_	ter Table (A2)			1, 2, 4A, a	and 4B)			4A, and 4B)			
<u>✓</u> Saturatio	` '		Salt Crust		- (D42)		Drainage Patterns (B10)				
	arks (B1) nt Deposits (B2)		Aquatic In Hydrogen					ry-Season Water Table (C2)			
	. , ,					na Boot		aturation Visible on Aerial Imagery (C9) eomorphic Position (D2)			
	oosits (B3) It or Crust (B4)		Oxidized F		_	ng Root		hallow Aquitard (D3)			
	osits (B5)		Recent Iro			nils (C6)		AC-Neutral Test (D5)			
	Soil Cracks (B6)		Stunted or				·	aised Ant Mounds (D6) (LRR A)			
	on Vis ble on Aerial	Imagery (F						rost-Heave Hummocks (D7)			
	Vegetated Concav		· — · ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	marko)		<u> </u>	oct ricave riammoone (21)			
Field Observ			()								
Surface Water	er Present? Y	'es	No Depth (in	ches):							
Water Table			No Depth (in								
Saturation Pr			No Depth (in			Wetla	nd Hydrology	/ Present? Yes No			
(includes cap	oillary fringe)			•							
Describe Red	corded Data (stream	n gauge, m	onitoring well, aerial	photos, pro	evious inspec	tions), it	f available:				
Remarks:											
Data poi	nt on bank a	bove f	lowing water	in cre	ek.						
•			•								

Project/Site: Silicon Mountain	(City/County	: Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. of Transportation	1			State: Montana	Sampling Point: DP04u
				nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Terrace/floodplain			•		Slope (%): 0
					B Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					<u></u>
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologysi					_
Are Vegetation, Soil, or Hydrologyn	aturally prol	blematic?	(If ne	eded, explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	showing	samplin	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No)			_	
Hydric Soil Present? Yes No	· <u> </u>		ne Sampled nin a Wetlan		No
Wetland Hydrology Present? Yes No		With		165	
Remarks:					
Data point on terrace above old bank	cut.				
VEGETATION – Use scientific names of plant					
Tree Stratum (Plot size: 30 ft r	Absolute % Cover		Indicator Status	Dominance Test work	
1				Number of Dominant S That Are OBL, FACW,	
2				Total Number of Domin	nant
3				Species Across All Stra	•
4				Percent of Dominant Sp	pecies
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Co	over	That Are OBL, FACW,	
1. Dasiphora fruticosa	5	~	FAC	Prevalence Index wor	
2.					Multiply by:
3.					x 1 = 0
4				FAC species 36	$x = \frac{0}{x = 108}$
5				1 AC species	x 3 = 100 x 4 = 0
5.0	5	= Total Co	over		x 4 = 0 x 5 = 300
Herb Stratum (Plot size: 5 ft r) 1 Bromus inermis	60	V	UPL	Column Totals: 96	(A) 408 (B)
2. Poa pratensis	30		FAC		
3. Nassella viridula	1		TAC	Prevalence Index	
4 Equisetum arvense	1	(<u> </u>	FAC	Hydrophytic Vegetation	
5.				1 - Rapid Test for F	
6				✓ 2 - Dominance Tes 3 - Prevalence Inde	
7					Adaptations ¹ (Provide supporting
8.					s or on a separate sheet)
9.				5 - Wetland Non-V	ascular Plants ¹
10				Problematic Hydro	phytic Vegetation¹ (Explain)
11					il and wetland hydrology must
	92	= Total Co	ver	be present, unless distu	arbed or problematic.
Woody Vine Stratum (Plot size:)			ļ		
1				Hydrophytic Vegetation	
2				Present? Ye	s No
% Bare Ground in Herb Stratum 8		- 10tal C0	v CI		
Remarks:				•	
Vegetation dominated by smooth bro	ome an	d Kentı	ucky blu	uegrass.	

SOIL Sampling Point: DP04u

Profile Desc	ription: (Describe	e to the dept	h needed to docur	nent the i	ndicator	or confirm	the absence of	indicators.)	
Depth	Matrix		Redo	x Features					
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0 - 16	10YR 3/2	100					Sandy Clay Loam		
_									
<u> </u>									
-									
				-					
¹ Type: C=Co	oncentration, D=De	pletion, RM=	Reduced Matrix, CS	S=Covered	d or Coate	ed Sand Gr	rains. ² Location	on: PL=Pore Lining, M=Matrix.	
Hydric Soil I	Indicators: (Appli	cable to all	LRRs, unless other	wise note	ed.)		Indicators t	for Problematic Hydric Soils ³ :	
Histosol	(A1)		Sandy Redox (S	S5)			2 cm M	uck (A10)	
Histic Ep	oipedon (A2)		Stripped Matrix	(S6)			Red Pa	rent Material (TF2)	
Black Hi	stic (A3)		Loamy Mucky N	/lineral (F1	1) (excep	t MLRA 1)	Very Sh	nallow Dark Surface (TF12)	
Hydroge	n Sulfide (A4)		Loamy Gleyed		.)		Other (I	Explain in Remarks)	
	d Below Dark Surfa	ice (A11)	Depleted Matrix				•		
	ark Surface (A12)		Redox Dark Su	` ,				of hydrophytic vegetation and	
-	fucky Mineral (S1)		Depleted Dark		7)			hydrology must be present,	
	Bleyed Matrix (S4)		Redox Depress	ions (F8)			unless d	isturbed or problematic.	
	_ayer (if present):								
Type:									,
Depth (inc	ches):						Hydric Soil Pre	esent? Yes No	
Remarks:									
HYDROLO			dicators obs						
_			; check all that appl	(1)			Seconda	ry Indicators (2 or more required)
	Water (A1)	One required	Water-Sta		os (BQ) (o	vcent		er-Stained Leaves (B9) (MLRA 1	_
	iter Table (A2)			1, 2, 4A, a		xcept		A, and 4B)	, z ,
Saturation			Salt Crust		anu 46)			nage Patterns (B10)	
Water M	, ,		Aquatic In	` ′	e (B13)			Season Water Table (C2)	
	nt Deposits (B2)		Hydrogen					ration Visible on Aerial Imagery ((CQ)
	posits (B3)					Living Roo		morphic Position (D2)	(00)
-	at or Crust (B4)		Presence		-	•	· · · —	low Aquitard (D3)	
	oosits (B5)		Recent Iro		•	•		-Neutral Test (D5)	
	Soil Cracks (B6)		Stunted or					ed Ant Mounds (D6) (LRR A)	
	on Vis ble on Aeria	I Imagery (R7				(LIXIX A)		t-Heave Hummocks (D7)	
	Vegetated Conca			nani iii ike	illains)		11031	ericave ridifficions (D1)	
Field Observ		ve ourrace (E	,,,						
		Von N	lo V Donth (in	oboo):					
Surface Water			No Depth (in						
Water Table			No Depth (in						,
Saturation P		Yes N	No Depth (in	ches):		Wetla	and Hydrology P	resent? Yes No	_
(includes cap Describe Red		m gauge. mo	nitoring well, aerial ¡	photos. pro	evious ins	spections)	if available:		
		5. 235,0		, Pi		, /,			
Remarks:									
		_	_						
No wetla	and hydrolog	gy obse	rved.						

Project/Site: Silicon Mountain	(City/County:	Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	า			State: Montana	Sampling Point: DP04w
				nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Alluvial Flat					e Slope (%): 0
Subregion (LRR): E 43B					
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				-	
Are climatic / hydrologic conditions on the site typical for this					·
Are Vegetation, Soil, or Hydrology si	-				
Are Vegetation, Soil, or Hydrology na					
SUMMARY OF FINDINGS - Attach site map s	showing	sampling	g point lo	ocations, transects	, important features, etc.
Wetland Hydrology Present? Yes No Remarks:)	with	e Sampled in a Wetlan	nd? Yes <u> </u>	No
Wetland data point on a bankfull ben	ch adja	cent to	the cr	eek channel.	
VEGETATION – Use scientific names of plant	s.				
<u>Tree Stratum</u> (Plot size: <u>30 ft r</u>) 1 2		Species?	Status	Dominance Test work Number of Dominant S That Are OBL, FACW, of	pecies
3				Total Number of Domin Species Across All Stra	ta: <u>3</u> (B)
		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft r) 1. Salix exigua	25	~	FACW	Prevalence Index wor	ksheet:
	3	<u> </u>	OBL		Multiply by:
3.					x 1 = 45
4				_	x 2 = 80
5.				FAC species 5	x 3 = 15
- 6	28	= Total Co	ver		x 4 = 0
Herb Stratum (Plot size: 5 ft r	40		ODI	UPL species 0 Column Totals: 90	x = 0 (A) 140 (B)
1. Carex nebrascensis	40		OBL		
2. Juncus balticus 3. Poa pratensis	<u>15</u> 5		FACW FAC	Prevalence Index	
Typha latifolia	2		OBL	Hydrophytic Vegetation	
5 Unidentified forb	2		OBL	1 - Rapid Test for H	
6.				✓ 2 - Dominance Tes✓ 3 - Prevalence Inde	
7				l 	Adaptations ¹ (Provide supporting
8.					s or on a separate sheet)
9.				5 - Wetland Non-Va	ascular Plants ¹
10				Problematic Hydro	phytic Vegetation¹ (Explain)
11.					l and wetland hydrology must
	O 4	= Total Cov	er	be present, unless distu	irbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic	
2				Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum 36		= Total Cov	rer	10.	
Remarks:				<u> </u>	
PEM data point with some willow, do	minate	d by Ne	ebraska	ı sedge.	

SOIL Sampling Point: DP04w

Profile Descri Depth	Matrix		Red	ox Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 16	10YR 4/2	95	10YR 4/6	5	С	М	Sandy Loam	Sulfidic odor at 6 inches.
_								
			-					
			-					· -
								· -
-								
-								
				_	-			-
			-					
			=Reduced Matrix, C			ed Sand Gr		ocation: PL=Pore Lining, M=Matrix.
dric Soil In	dicators: (Applic	able to all	LRRs, unless other	erwise no	ted.)			ors for Problematic Hydric Soils ³ :
_ Histosol (A	,		Sandy Redox	. ,				m Muck (A10)
	pedon (A2)		Stripped Matrix	, ,				d Parent Material (TF2)
_ Black Histi	` '		Loamy Mucky			t MLRA 1)		ry Shallow Dark Surface (TF12)
_ Hydrogen		- (011)	Loamy Gleyed		2)		Oth	ner (Explain in Remarks)
	Below Dark Surfac Surface (A12)	æ (ATT)	✓ Depleted Matri Redox Dark Set	. ,	`		3Indias	ors of hydrophytic vegetation and
	cky Mineral (S1)		Depleted Dark	•				and hydrology must be present,
	eyed Matrix (S4)		Redox Depres					ss disturbed or problematic.
	yer (if present):			0.0.10 (1.0)	'		1	oo allaa oo problemaale.
Type:	, , ,							
	es):						Hydric So	il Present? Yes No
							i i yai io oo	110001111111111111111111111111111111111
ulfidic o			matrix obser	ved.			1	
ulfidic oo	Υ	oleted	matrix obser	ved.				
ulfidic od	Y ology Indicators:	oleted						
Ulfidic Od DROLOG etland Hydr	Y ology Indicators: tors (minimum of d	oleted	d; check all that app	oly)				ondary Indicators (2 or more required)
Ulfidic od	Y ology Indicators: tors (minimum of o	oleted	d; check all that app	oly) ained Lea	ves (B9) (є	xcept		Water-Stained Leaves (B9) (MLRA 1, 2,
DROLOG etland Hydromary Indicator Surface Working Water	Y ology Indicators: tors (minimum of clater (A1) er Table (A2)	oleted	d; check all that app Water-Sta	oly) ained Lea 1, 2, 4A,		except		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
DROLOG etland Hydr imary Indicat '_ Surface W '_ High Wate '_ Saturation	Y ology Indicators: tors (minimum of of dater (A1) ar Table (A2) (A3)	oleted	d; check all that app Water-Sta MLRA Salt Crus	oly) ained Lea 1, 2, 4A, t (B11)	and 4B)	xcept		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
DROLOG etland Hydromary Indicat Surface W High Water Saturation Water Mar	Y ology Indicators: tors (minimum of ole dater (A1) er Table (A2) (A3) eks (B1)	oleted	d; check all that app — Water-Sta MLRA — Salt Crus — Aquatic Ir	ained Lea a 1, 2, 4A, t (B11) nvertebrat	and 4B) es (B13)	except	'	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
DROLOG etland Hydroimary Indicat Surface W High Water Saturation Water Mar	ology Indicators: tors (minimum of ole) rater (A1) rater (A2) (A3) rks (B1) Deposits (B2)	oleted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir V Hydroger	oly) ained Lea a 1, 2, 4A, t (B11) nvertebrat n Sulfide C	and 4B) es (B13) Odor (C1)		' ! !	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
DROLOG etland Hydre imary Indicate '_ Surface W '_ High Water '_ Saturation	yology Indicators: tors (minimum of of dater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3)	oleted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir V Hydroger Oxidized	oly) ained Lea a 1, 2, 4A, t (B11) nvertebrat n Sulfide C Rhizosph	es (B13) Odor (C1) eres along	Living Roc		Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
DROLOG etland Hydreimary Indicate '_ Surface W '_ High Water '_ Saturation _ Water Mar _ Sediment '_ Drift Depo	ology Indicators: tors (minimum of ole) rater (A1) rater (A2) (A3) rks (B1) Deposits (B2)	oleted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir V Hydroger Oxidized	oly) ained Lea a 1, 2, 4A, t (B11) nvertebrat n Sulfide C Rhizosph	and 4B) es (B13) Odor (C1)	Living Roc	ots (C3) <u>v</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3)
DROLOG etland Hydrimary Indicat '_ Surface W '_ High Wate '_ Saturation _ Water Mar _ Sediment '_ Drift Depo	ology Indicators: tors (minimum of old tater (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5)	oleted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir	ained Lea 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizospha of Reductor	es (B13) Odor (C1) eres along ed Iron (C-	Living Roc 4) d Soils (C6	ots (C3) <u>v</u>	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
DROLOG etland Hydromary Indicat ' Surface W ' High Wate ' Saturation Water Mar Sediment ' Drift Depos Iron Depos Surface So	ology Indicators: tors (minimum of olater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	oleted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted o	ained Lea 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizospho of Reduct or Stressed	es (B13) odor (C1) eres along ed Iron (Cition in Tille d Plants (D	Living Roc 4)	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
DROLOG etland Hydromary Indicat 'Surface W 'High Water 'Saturation Water Mar Sediment 'Drift Depos Algal Mate Iron Depos Surface Se Inundation	ology Indicators: tors (minimum of or later (A1) or Table (A2) (A3) or ks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) a Vis ble on Aerial	Dieted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co	ained Lea 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizospho of Reduct or Stressed	es (B13) odor (C1) eres along ed Iron (Cition in Tille d Plants (D	Living Roc 4) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
TDROLOG Tetland Hydromary Indicat To Surface W To High Water To Saturation Water Mar Sediment To Drift Depos Algal Mater Iron Depos Surface Se Inundation	ology Indicators: tors (minimum of olater (A1) er Table (A2) (A3) eks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6)	Dieted	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co	ained Lea 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizospho of Reduct or Stressed	es (B13) odor (C1) eres along ed Iron (Cition in Tille d Plants (D	Living Roc 4) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
TDROLOG Tetland Hydremary Indicate Thigh Water Mare Sediment The Drift Deponent Surface Sediment Iron Deposed Inundation Sparsely N	yology Indicators: tors (minimum of	one require	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir V Hydroger Oxidized Presence Recent In Stunted co (7) Other (Ex	ained Lear 1, 2, 4A, t (B11) nvertebrat n Sulfide C Rhizosphe of Reduct on Reduct or Stresses	es (B13) odor (C1) eres along ed Iron (Cition in Tille d Plants (D	Living Roc 4) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
TDROLOG Tetland Hydrimary Indicat Surface W High Water Mar Sediment Drift Deporation Algal Mater Iron Deporation Surface Solution Sparsely Veld Observa	yology Indicators: tors (minimum of	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent In Stunted of Other (Ex	oly) ained Lear a 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizospho of Reduct on Reduct or Stresse cplain in R	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
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VDROLOG Vetland Hydr rimary Indicat V Surface W V High Water V Saturation Water Mar Sediment V Drift Depo Algal Mate Iron Depos Surface Se Inundation Sparsely W Vetled Observa	ology Indicators: tors (minimum of or later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Vis ble on Aerial legetated Concav litions: Present?	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent In Stunted of Other (Ex	ained Lea a 1, 2, 4A, t (B11) avertebrat a Sulfide C Rhizosphe of Reduct or Stressed cplain in R	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
/ DROLOG /etland Hydromary Indicat / Surface W / High Water / Saturation Water Mar Sediment / Drift Depos Algal Mater Iron Depos Surface So Inundation Sparsely V ield Observation //ater Table Post aturation Presencludes capill	ology Indicators: tors (minimum of of later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Vis ble on Aerial legetated Concav litions: Present? sent?	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex) No Depth (ir No Depth (ir	ained Lear 1, 2, 4A, 1 (B11) Invertebrat In Sulfide Control Rhizospher In Greduct In Stressee Inches): 1 Inches): 0	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
TOROLOG TETLANDE MATERIAL MATE	ology Indicators: tors (minimum of of later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Vis ble on Aerial legetated Concav litions: Present? sent?	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex	ained Lear 1, 2, 4A, 1 (B11) Invertebrat In Sulfide Control Rhizospher In Greduct In Stressee Inches): 1 Inches): 0	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
TOROLOG Tetland Hydrimary Indicat Surface W High Water Mar Sediment Sediment Torift Depo Algal Mate Iron Depos Surface Se Inundation Sparsely V Teld Observa aurface Water Staturation Presencludes capill Tescribe Reco	ology Indicators: tors (minimum of of later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Vis ble on Aerial legetated Concav litions: Present? sent?	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex) No Depth (ir No Depth (ir	ained Lear 1, 2, 4A, 1 (B11) Invertebrat In Sulfide Control Rhizospher In Greduct In Stressee Inches): 1 Inches): 0	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
TDROLOG TELLENT SET SET SET SET SET SET SET SET SET SE	ology Indicators: tors (minimum of of later (A1) or Table (A2) (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) oil Cracks (B6) of Vis ble on Aerial legetated Concav litions: Present? sent?	Imagery (Ee Surface	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted of Other (Ex) No Depth (ir No Depth (ir	ained Lear 1, 2, 4A, 1 (B11) Invertebrat In Sulfide Control Rhizospher In Greduct In Stressee Inches): 1 Inches): 0	es (B13) Dodor (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roc 4) d Soils (C6 1) (LRR A	ots (C3)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
TDROLOG etland Hydreimary Indicate Surface W High Water Mare Sediment Drift Deponent Iron Deponent Surface Sediment Surface Sediment Iron Deponent Sparsely Weld Observation Water Table Production Presidudes capill escribe Recommendation Emarks:	ology Indicators: tors (minimum of of later (A1) er Table (A2) (A3) erks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) bil Cracks (B6) a Vis ble on Aerial legetated Concav letions: Present? resent? sent? ary fringe) rded Data (stream	Imagery (Ee Surface (Yes Ves Ves Normal gauge, m	d; check all that app Water-Sta MLRA Salt Crus Aquatic Ir Hydroger Oxidized Presence Recent Ir Stunted co Other (Ex (B8) No Depth (ir Onitoring well, aerial	ained Lear 1, 2, 4A, t (B11) nvertebrat a Sulfide C Rhizosphe of Reduct on Reduct or Stressed cplain in R nches): 1 nches): 6 nches): 0 photos, p	es (B13) Door (C1) eres along ed Iron (C- tion in Tille d Plants (C- emarks)	Living Roo 4) d Soils (C6 1) (LRR A	ots (C3) V	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain	(City/County:	Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	1			State: Montana	Sampling Point: DP05u
Investigator(s): McEldowney		Section, Tov	wnship, Rar	nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Stream Terrace					Slope (%): 0
Subregion (LRR): E 43B	Lat: 45.	9989285		Long: -112.6628764	Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle	e, frequently	flooded comp	olex, 0 to 4 pe	rcent slopes NWI classifica	
Are climatic / hydrologic conditions on the site typical for this	time of year	ar? Yes '	No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology si	-				resent? Yes No
Are Vegetation, Soil, or Hydrology na				eded, explain any answers	
SUMMARY OF FINDINGS – Attach site map s			g point lo	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes No					
Hydric Soil Present? Yes No	·		e Sampled		No 🗸
Wetland Hydrology Present? Yes No		WILII	in a Wetlan	iu! Tes	NO
Remarks:					
Upland data point between cell 1 and	creek.				
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test works	
1				Number of Dominant Sp That Are OBL, FACW, o	
2.				Total Number of Domina	, ,
3				Species Across All Strat	•
4				Percent of Dominant Sp	ecies
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total Co	⁄er	That Are OBL, FACW, o	
1				Prevalence Index work	
2.					Multiply by:
3.					x 1 = 0
4					x 2 = 0
5				FAC species 0	x 3 = 45 x 4 = 0
Hash Otration (Distains Eft.)		= Total Co	ver	· ·	x 5 = 240
Herb Stratum (Plot size: 5 ft r) 1 Bromus inermis	45	~	UPL	Column Totals: 63	
2 Leymus cinereus	15		FAC		
3. Thlaspi arvense	2		UPL	Prevalence Index Hydrophytic Vegetation	
4. Alyssum alyssoides	1		UPL	1 - Rapid Test for H	
5				2 - Dominance Test	
6				3 - Prevalence Inde	
7					daptations ¹ (Provide supporting
8					or on a separate sheet)
9				5 - Wetland Non-Va	hytic Vegetation ¹ (Explain)
10					and wetland hydrology must
11	00			be present, unless distu	bed or problematic.
Woody Vine Stratum (Plot size:)		= Total Cov	ei		
1				Hydrophytic	
2				Vegetation	No_ 🗸
% Bare Ground in Herb Stratum 37		= Total Cov	er	rieseit: Tes	140
Remarks:					
	oth bro	mo			
Upland data point dominated by smo	סנוו טונ	nne.			

SOIL Sampling Point: DP05u

(! l \)	rix	Redox Features	2 + .	5
(inches) Color (mois		Color (moist) % Type ¹ Loc ²		Remarks
0 - 2 10YR 2/2	100		Loam	
2 - 16 10YR 3/3	100		Loam	Soil is dry.
<u> </u>				
<u> </u>			<u> </u>	
-				
1- 00				
		M=Reduced Matrix, CS=Covered or Coated Sance II LRRs, unless otherwise noted.)		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :
Histosol (A1)	opilicable to a	Sandy Redox (S5)		m Muck (A10)
Histic Epipedon (A2)		Stripped Matrix (S6)		Parent Material (TF2)
Black Histic (A3)		Loamy Mucky Mineral (F1) (except MLRA		y Shallow Dark Surface (TF12)
Hydrogen Sulfide (A4)		Loamy Gleyed Matrix (F2)	Oth	er (Explain in Remarks)
Depleted Below Dark St	, ,	Depleted Matrix (F3)	2	
Thick Dark Surface (A12	•	Redox Dark Surface (F6)		ors of hydrophytic vegetation and
Sandy Mucky Mineral (SSandy Gleyed Matrix (S		Depleted Dark Surface (F7)Redox Depressions (F8)		and hydrology must be present, as disturbed or problematic.
Restrictive Layer (if preser		Redux Depressions (F6)	unie:	ss disturbed of problematic.
Type:				
Depth (inches):			Hydric Soi	Present? Yes No
Remarks:			1.,	
YDROLOGY				
Wetland Hydrology Indicat	tors:			
Primary Indicators (minimum				ndary Indicators (2 or more required)
Primary Indicators (minimum Surface Water (A1)		Water-Stained Leaves (B9) (except		Vater-Stained Leaves (B9) (MLRA 1, 2,
Primary Indicators (minimum Surface Water (A1) High Water Table (A2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	v	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	n of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) 	t	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	n of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	\ [[Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	n of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living 	\ [[S Roots (C3) (Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	n of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4)	\ [[5] Roots (C3) 6	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	n of one requir	 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living 	V [[[[S] Roots (C3) (C6) F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5)	n of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI	— V — E — E Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6	n of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living (Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI	— V — E — E Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Vis ble on A6 Sparsely Vegetated Cor	n of one requir	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living (Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI	— V — E — E Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Vis ble on A6 Sparsely Vegetated Cor	n of one requir) erial Imagery (ncave Surface	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living (Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI	— V — E — E Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6 Inundation Vis ble on Ae Sparsely Vegetated Cor	n of one requir o) erial Imagery (ncave Surface Yes	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) (B8)	— V — E — E Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on Action Sparsely Vegetated Corfield Observations: Surface Water Present? Water Table Present?	of one required one required of one required of one required one re	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	— V — E — S Roots (C3) — C — S (C6) — F R A) — F	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on Active Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	of one required one required of one required of one required one re	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches):	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on A6 Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe)	of one required one required of one required of one required one re	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches):	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on A6 Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (str	of one required one required of one required of one required one re	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches):	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on A6 Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (sti	of one required one required of one required of one required one req	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII B7) Other (Explain in Remarks) (B8) No Depth (inches): No No Poepth (inches): No Poe	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on A6 Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (sti	of one required one required of one required of one required one req	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI B7) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches):	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Primary Indicators (minimum Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on A6 Sparsely Vegetated Cor Field Observations: Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe) Describe Recorded Data (sti	of one required one required of one required of one required one req	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII B7) Other (Explain in Remarks) (B8) No Depth (inches): No No Poepth (inches): No Poe	V	Vater-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Orainage Patterns (B10) Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain	c	ity/County:	Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. of Transportation	1			State: Montana	Sampling Point: DP05w
Investigator(s): Richard Baumgarten	S			nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Toeslope				=	e Slope (%): 5
Subregion (LRR): E 43B					
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				=	
Are climatic / hydrologic conditions on the site typical for this					
Are Vegetation, Soil, or Hydrologysi	-				
Are Vegetation, Soil, or Hydrology na					
SUMMARY OF FINDINGS - Attach site map s	showing	sampling	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Yes V No No)	Is the	e Sampled		
Wetland Hydrology Present? Yes V		withi	in a Wetlan	nd? Yes	No
Remarks:					
Wetland data point near pond edge.					
VEGETATION – Use scientific names of plant	s.				
30 ft r		Dominant		Dominance Test work	sheet:
Tree Stratum (Plot size: 30 ft r) 1	% Cover			Number of Dominant Sp That Are OBL, FACW, of	
2				Total Number of Domin	
3				Species Across All Stra	ta: <u>1</u> (B)
			ver	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft r) 1. Salix lasiandra	1		FACW	Prevalence Index wor	ksheet:
2			.,,,,,,,,	Total % Cover of:	
3.				•	x 1 = 11
4				_	x 2 = 142
5.		-		FAC species 7	x 3 = 21
		= Total Cov	ver		x 4 = 0
Herb Stratum (Plot size: 5 ft r)					x 5 = <u>30</u>
1. Juncus balticus	60		FACW	Column Totals: 95	(A) <u>204</u> (B)
2. Epilobium ciliatum	10		FACW	Prevalence Index	= B/A = <u>2.14</u>
3. Potentilla anserina	10		OBL	Hydrophytic Vegetation	on Indicators:
4. Leymus cinereus	5		FAC	✓ 1 - Rapid Test for H	lydrophytic Vegetation
5. Euphorbia esula	5		UPL	✓ 2 - Dominance Tes	t is >50%
6. Typha latifolia	1		OBL	✓ 3 - Prevalence Inde	ex is ≤3.0 ¹
7. Agrostis gigantea	1 .		FAC		Adaptations ¹ (Provide supporting
8. Cirsium arvense	1 .		FAC		s or on a separate sheet)
9. Thlaspi arvense	<u> </u>		UPL	5 - Wetland Non-Va	
10					phytic Vegetation ¹ (Explain) I and wetland hydrology must
11	94 =			be present, unless distu	
Woody Vine Stratum (Plot size:)	94 =	= Total Cov	er		· ·
1				Hydrophytic	
2.				Hydrophytic Vegetation	
			er	Present? Yes	s No
% Bare Ground in Herb Stratum 6					
Remarks:					
Data point met multiple indicators for	r hydrop	ohytic	vegetat	tion.	

SOIL Sampling Point: DP05w

Profile Desc	cription: (Describe	e to the dep	th needed to docun	nent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 3/1	100					Loam	Lots of roots.
3 - 10	10YR 3/1	96	N 3/0	2	<u>D</u>	М	Clay Loam	Greasy organic matter observed.
3 - 10			10YR 4/4	2	С	PL	Clay Loam	Greasy organic matter observed.
10 - 16	10YR 5/1	96	10YR 4/4	2	<u>C</u>		Sandy Loam	Large grain sand or small grain gravel in layer.
10 - 16			N 2.5/0	2	<u>D</u>		Sandy Loam	Large grain sand or small grain gravel in layer.
			-					
						·		
			=Reduced Matrix, CS			d Sand Gr		cation: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Appli	cable to all	LRRs, unless other	wise no	ted.)		Indicato	ors for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (S				·	n Muck (A10)
	pipedon (A2)		Stripped Matrix					Parent Material (TF2)
·	istic (A3)		Loamy Mucky N			MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4) d Below Dark Surfa	oo (A11)	Loamy Gleyed I ✓ Depleted Matrix		2)		Otn	er (Explain in Remarks)
	u Below Dark Suria ark Surface (A12)	ice (ATT)	Redox Dark Sui		`		³ Indicato	ors of hydrophytic vegetation and
	Aucky Mineral (S1)		Depleted Dark S	,	•			and hydrology must be present,
-	Gleyed Matrix (S4)		Redox Depress					ss disturbed or problematic.
	Layer (if present):		<u> </u>	. ,	<u> </u>			·
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes No
Remarks:								
Donloto	d matrix indi	ootor m	at for budria	ooil				
Debleter	ı matrıx mu	Cator II	et for hydric	SOII.				
HYDROLO	C.V.							
_	drology Indicators		d; check all that apply	٨			Seco	ndary Indicators (2 or more required)
		One require			(00 (P0) (0	voont		Vater-Stained Leaves (B9) (MLRA 1, 2,
	Water (A1)		Water-Stai			хсері	v	, , ,
✓ Saturation	ater Table (A2)		Salt Crust		and 4B)		_	4A, and 4B)
	larks (B1)			` ,	oo (P12)			Prainage Patterns (B10)
l —	nt Deposits (B2)		Aquatic Inv					Pry-Season Water Table (C2) Faturation Visible on Aerial Imagery (C9)
	. , ,		Oxidized R			Livina Doo		Geomorphic Position (D2)
	posits (B3) at or Crust (B4)				_	-		
	` ,		Presence of Recent Iro					hallow Aquitard (D3) AC-Neutral Test (D5)
	oosits (B5)					,	-	, ,
	Soil Cracks (B6)	l less sus en . (D	Stunted or			1) (LRR A		Raised Ant Mounds (D6) (LRR A)
	on Vis ble on Aeria			iain in R	emarks)		<u> </u>	rost-Heave Hummocks (D7)
	y Vegetated Conca	ve Surrace (B8)					
Field Obser			4					
Surface Wat			No Depth (inc		•	-		
Water Table			No Depth (inc			_		
Saturation P (includes car		Yes	No Depth (inc	ches): <u>10</u>)	_ Wetla	and Hydrolog	y Present? Yes V No No
		m gauge, m	onitoring well, aerial p	hotos, p	revious ins	pections),	if available:	
Remarks:								
Data poi	int 8ft from	surface	water of pon	d.				
_			-					
1								

Project/Site: Silicon Mountain	(City/County	: Silver Bo	ow County	Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. Of Transportation	า			State: Montana	Sampling Point: DP06u
		Section, To	wnship, Rar	nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Stream Terrace				=	Slope (%): 3
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle	<u> </u>				<u> </u>
Are climatic / hydrologic conditions on the site typical for this				<u></u>	<u></u>
Are Vegetation, Soil, or Hydrologysi	-				present? Yes No
Are Vegetation, Soil, or Hydrology na					
SUMMARY OF FINDINGS - Attach site map s	showing	samplin	g point lo	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No	·				
Hydric Soil Present? Yes No			ne Sampled		No 🗸
Wetland Hydrology Present? Yes No		With	nin a Wetlan	id? Yes	NO
Remarks:					
Upland data point at the south end of ce	ll 3, nor	th of ce	ell 2, rou	ghly 4 ft higher th	nan its wetland pair.
VEGETATION – Use scientific names of plant	s.				
20 ft r	Absolute		Indicator	Dominance Test work	sheet:
	% Cover			Number of Dominant S	
1				That Are OBL, FACW,	or FAC: 1 (A)
2				Total Number of Domin	
3				Species Across All Stra	ta: <u>2</u> (B)
			over	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft r)				Prevalence Index wor	(**-)
1					Multiply by:
2				OBL species 0	x 1 = 0
3			· 	FACW species 0	x 2 = 0
4 5			· ——	FAC species 25	x 3 = <u>75</u>
0		= Total Co	over		x 4 = 0
Herb Stratum (Plot size: 5 ft r)				· ·	x 5 = 110
1. Leymus cinereus	25		FAC	Column Totals: 47	(A) <u>185</u> (B)
2. Festuca ovina	20		UPL	Prevalence Index	
3. Polemonium pulcherrimum	2		UPL	Hydrophytic Vegetation	
4				1 - Rapid Test for H	
5				2 - Dominance Tes	
6				3 - Prevalence Inde	
7 8					Adaptations ¹ (Provide supporting s or on a separate sheet)
9.				5 - Wetland Non-Va	ascular Plants ¹
10				Problematic Hydro	phytic Vegetation ¹ (Explain)
11.					l and wetland hydrology must
	47	= Total Co	ver	be present, unless distu	irbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic Vegetation	
2					s No <u> </u>
% Bare Ground in Herb Stratum 53		- 10tal C0	v CI		
Remarks:					
Upland data point dominated by shee	ep fesc	ue and	basin v	wildrye.	

SOIL Sampling Point: DP06u

High Water Table (A2) Saturation (A3) Water Marks (B1) MLRA 1, 2, 4A, and 4B) Aquatic Invertebrates (B13) Aquatic Invertebrates (B13) Advantage Patterns (B10) Dry-Season Water Table (C2)	Depth	Matrix		Redox Features	2 -
2-16 10YR 3/2 100 Sandy Loam 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: 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. Third price of the concentration, D=Depletion RM=Reduced Sand Grains. Third price of the concentration, D=Depletion RM=Reduced Sand Grains. Third price of the concentration, D=Depletion RM=Reduced Sand Grains. Third price of the concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. Third price of the concentration, D=Depletion, RM=Reduced Matrix, CS=Covered Matrix, (S5) Third Dark Surface (A11) Depleted Matrix, (F2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Mineral (S1) Depth (Inches): Type: Sandy Mucky Mineral (S1) Depth (Inches): Type: Search Valve (T persent): Type: Search Valve (T persent): Type: Search Valve (T persent): Type: Matrix (S8) Third price of the concentration of the concentrat				Color (moist) % Type' Loc ²	
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. Indicators for Problematic Hydric Soils*: Histos Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histos Epipedon (A2) Stripped Matrix (S5) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Hydrogen Sulface (A1) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Sendy Mucky Matrix (S4) Redox Depressions (F8) Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic. **Remarks:** No hydric soil Indicators observed. **NPROLOGY** Wetand Hydrology Indicators: **Plimary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water Marks (B1) Salt Chast (B11) Depleted Salt (B1) Depleted Dark Surface (B1) Water Marks (B1) Salt Chast (B1) Depleted Dark Surface (B1) Salt Chast (B1) Depleted Dark Surface (B1) Depleted Dark Surface (B1) Water Marks (B1) Depleted Dark Surface (B1) Depleted Dark Surface (B1) Salt Chast (B11) Depleted Dark Surface (B1) Depleted Dark Surface (B1) Depleted Dark Surface (B1) Water Marks (B1) Depleted Dark Surface (B1) De	0 - 2				Sandy Loam
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histosol (A3) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Depleted Below Dark Surface (R12) Thick Dark Surface (A12) Sandy Mucky Mineral (F3) Sandy Mucky Mineral (F1) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (A11) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Depleted Depleted Definition (S4) Sandy Mucky Mineral (S1) Depleted Definition (S4) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Definition (S4) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F8) Wetland Hydrology must be present, unless disturbed or problematic. Restrictive Laper (if present): Type: Depth (inches): No hydric soil indicators observed. Hydric Soil Present? Yes No Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Saticrusic (B11) Water Marks (B1) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) John Sediment Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Surface Valer (Tust (B4) Presence of Reduced fron (C4) Agal Mater Crust (B4) Presence of Reduced fron (C4) Saturation (Vas) Agal Mater Crust (B4) Presence of Reduced fron (C4) Saturation (Vas) Surface Soil Cracks (B6) Hydrogen Sulfide Odor (C1) Shallow Adaptard (D3) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Hearth Hydrology Present? Yes No Depth (inches): Water Table Present? Yes No Dept	2 - 16	10YR 3/2	100		Sandy Loam
Hydric Soll Indicators: (Applicable to all LRRs, unless otherwise noted.) Histos (A1) Histos (A1) Histos (A2) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Depleted Matrix (F2) Sandy Redox (S5) Black Histic (A3) Loamy Mucky Mineral (F1) (except MLRA 1) Depleted Below Dark Surface (R11) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Sandy Mucky Mineral (S1) Sandy Mucky Mineral (S1) Depleted Deform Surface (A11) Depleted Deform Surface (A12) Sandy Mucky Mineral (S1) Depleted Deform Surface (A12) Sandy Mucky Mineral (S1) Depleted Deform Surface (F6) Sandy Mucky Mineral (S1) Depleted Deform Surface (F7) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Wetand Hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): No hydric soil indicators observed. Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Hydric Soil Present? Yes No Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Sattration (A3) Sattration (A3) Sattration (A3) Sattration (A3) Sattration (A3) Water Marks (B1) Deprisange Patterns (B10) Dry-Season Water Table (A2) Mith Pydrogen Sulfide Odor (C1) Sediment Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Adjal Mator Crust (E4) Presence of Reduced fron (C4) Sattration (C3) Saturation Visible on Aerial Imagery (C3) Surface Soil Cracks (B6) Recent Iron Reduction in Titled Soils (C6) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Wettand Hydrology Present? Yes No Depth (inches): (Includes capillary fringe) Describe Recorded Data (Stream gauge, monitoring well, aerial photos, previous inspections), if available:					
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Histosol (A1) Sandy Redox (S5) 2 cm Muck (A10) HistoEpipedon (A2) Stripped Matrix (S6) Red Parent Material (TF2) Red Parent Material (TF2) Shallow Dark Surface (TF12) Other (Explain in Remarks) Depleted Matrix (F2) 2 cm Muck (A10) Purple (Explain in Remarks) Depleted Matrix (F2) 2 cm Muck (A10) Purple (Explain in Remarks) Depleted Matrix (F2) 2 cm Muck (A10) Purple (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Dark Surface (F6) Sindicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if present): Type:					
Histic Epipedon (A2) Stripped Matrix (S6) Red Parentt Material (TF2) Usery Shallow Dark Surface (TF12) Loamy Mucky Mineral (F1) (except MLRA 1) Very Shallow Dark Surface (TF12) Usery Shallow Dark Surface (TF12)	•		cable to all L	•	-
Black Histic (A3)			_	_ , ,	
			_		
Depleted Bellow Dark Surface (A11)			_		
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) unless disturbed or problematic. Restrictive Layer (if present): Type: Depth (inches): Hydric Soil Present? Yes No Vater Alage (B9) (except Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9) Depth (inches): Saturation Visible on Aerial Imagery (B1) Incon Deposits (B3) Surface Soil Cracks (B6) Recent Iron Reduction in Tilled Soils (C6) Sparsel Vegetated Concave Surface (B8) Surface Water (Present): Deposits (B3) Surface Soil Cracks (B6) Sutured or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Incode Sparsel Vegetated Concave Surface (B8) Surface Water (Present): Present? Yes No V Depth (inches): Wetland Hydrology Present? Yes No V Depth (inches): Wetland Keral Inagery (Position (D2) Present? Yes No V Depth (inches): Wetland Hydrology Present? Yes No W D			ce (A11)		
	· 	, ,	_	_ ` '	
Restrictive Layer (if present): Type:			_		
Type:				Redox Depressions (F8)	unless disturbed or problematic.
Depth (inches):					
Remarks: No hydric soil indicators observed. IVDROLOGY	, <u> </u>				Harleta Oatt Brancousto - Mar V
Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) Surface Water (A1) Water-Stained Leaves (B9) (except High Water Table (A2) Saturation (A3) Salt Crust (B11) Water Marks (B1) Aquatic Invertebrates (B13) Porinage Patterns (B10) Sediment Deposits (B2) Prift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) For Deposits (B3) Iron Deposits (B5) Surface Soil Cracks (B6) Surface Soil Cracks (B6) Inundation Vis ble on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Remarks:		nes)			nyaric Soil Present? Tes No
Surface Water (A1)			:		
High Water Table (A2) Saturation (A3) Salt Crust (B11) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Surface Soil Cracks (B6) Inundation Vis ble on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table (A2) MLRA 1, 2, 4A, and 4B) Aq, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Primary Indic	ators (minimum of	one required;	check all that apply)	
Saturation (A3) Salt Crust (B11) Drainage Patterns (B10) Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Prost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Water Table Present? Yes No Depth (inches): No Presence of Reduced Iron (C4) Raised Ant Mounds (D6) (LRR A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Prost-Heave Hummocks (D7) Prost-Heave Hummocks (D7) Prost-Heave Hummocks (D7) Prost-Heave Hummocks (D7)		Vater (A1)			
Water Marks (B1) Aquatic Invertebrates (B13) Dry-Season Water Table (C2) Sediment Deposits (B2) Hydrogen Sulfide Odor (C1) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Oxidized Rhizospheres along Living Roots (C3) Geomorphic Position (D2) Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present?	High Wat				Water-Stained Leaves (B9) (MLRA 1, 2,
	_			MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Drift Deposits (B3)	Saturatio	n (A3)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2,4A, and 4B)Drainage Patterns (B10)
Algal Mat or Crust (B4) Presence of Reduced Iron (C4) Shallow Aquitard (D3) Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma	n (A3) arks (B1)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Iron Deposits (B5) Recent Iron Reduction in Tilled Soils (C6) FAC-Neutral Test (D5) Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Raised Ant Mounds (D6) (LRR A) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No No No No	Saturatio Water Ma	n (A3) arks (B1) t Deposits (B2)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1)	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
Surface Soil Cracks (B6) Stunted or Stressed Plants (D1) (LRR A) Raised Ant Mounds (D6) (LRR A) Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep	n (A3) arks (B1) t Deposits (B2) osits (B3)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2)
Inundation Vis ble on Aerial Imagery (B7) Other (Explain in Remarks) Frost-Heave Hummocks (D7) Sparsely Vegetated Concave Surface (B8) Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Depth (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	Saturatio Water Ma Sedimen Drift Dep Algal Ma	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Field Observations: Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depo	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5)		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5)
Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depo	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6)	Imagery (B7)	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A)
Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A)
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No Cincludes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concav		MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A)
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Depo Surface S Inundatio Sparsely	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Goil Cracks (B6) n Vis ble on Aerial Vegetated Concavations:	e Surface (B8	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concav ations:	ve Surface (B8	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A)
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	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pri	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concav ations: r Present? esent?	Yes No Yes No Yes No	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Princludes cap	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concav ations: r Present? esent?	Yes No Yes No Yes No	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
No evidence of wetland hydrology observed.	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Table I Saturation Pr (includes cap Describe Rec	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concav ations: r Present? esent?	Yes No Yes No Yes No	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRII Other (Explain in Remarks) Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pr (includes cap Describe Rec	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concavations: r Present? esent? esent? illary fringe) orded Data (strear	ye Surface (B8 Yes No Yes No Yes No n gauge, mon	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Very Depth (inches): Very Depth (inches): Very Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pr (includes cap Describe Rec	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concavations: r Present? esent? esent? illary fringe) orded Data (strear	ye Surface (B8 Yes No Yes No Yes No n gauge, mon	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Very Depth (inches): Very Depth (inches): Very Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
	Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Surface S Inundatio Sparsely Field Observ Surface Water Water Table I Saturation Pr (includes cap Describe Rec	n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) Soil Cracks (B6) n Vis ble on Aerial Vegetated Concavations: r Present? esent? esent? illary fringe) orded Data (strear	ye Surface (B8 Yes No Yes No Yes No n gauge, mon	MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living II Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils Stunted or Stressed Plants (D1) (LRI Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Very Depth (inches): Very Depth (inches): Very Depth (inches): Depth (inches):	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Roots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) (C6) FAC-Neutral Test (D5) R A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain	C	ity/County:	Silver Bo	ow County Sampling Date: 2024-07-23
Applicant/Owner: Montana Dept. of Transportation				State: Montana Sampling Point: DP06w
Investigator(s): E Reynaud	S	ection, To	wnship, Rai	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Toeslope				
Subregion (LRR): E 43B	Lat: 45.9	982541	•	Long: -112.6629237 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle				
Are climatic / hydrologic conditions on the site typical for this	time of year	r? Yes	✓ No	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology si				_
Are Vegetation, Soil, or Hydrology na				eeded, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map s				
)			
_	·		e Sampled in a Wetlan	
Wetland Hydrology Present? Yes No Remarks:)	With	iii a wellai	103 <u>103 100</u>
Data point taken within Transect 1.				
VEGETATION – Use scientific names of plant	s.			
Tree Stratum (Plot size: 30 ft r	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total Co	ver	That Are OBL, FACW, or FAC: 100.00 (A/B)
1				Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3.				OBL species $\frac{23}{70}$ $\times 1 = \frac{23}{140}$
4.				FACW species $\frac{70}{7}$ $\times 2 = \frac{140}{21}$
5				1 AC species x 3 =
		= Total Co	ver	FACU species 0 $x 4 = 0$ UPL species 0 $x 5 = 0$
Herb Stratum (Plot size: 5 ft r)	70		E 4 0)4/	
1. Juncus balticus	70		FACW	Column Totals: 100 (A) 184 (B)
2. Cicuta douglasii 3. Typha latifolia	10		OBL	Prevalence Index = B/A = 1.84
4 Alopecurus arundinaceus	4		OBL FAC	Hydrophytic Vegetation Indicators:
5. Carex aquatilis	2		OBL	1 - Rapid Test for Hydrophytic Vegetation
6. Poa pratensis	2		FAC	 ✓ 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is ≤3.0¹
7. Glyceria striata	1		OBL	4 - Morphological Adaptations ¹ (Provide supporting
8. Trifolium longipes	1		FAC	data in Remarks or on a separate sheet)
9.				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation ¹ (Explain)
11				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Mandy Vine Stratum (Diet size)	100 =	Total Cov	/er	be present, unless disturbed of problematic.
Woody Vine Stratum (Plot size:)				
1 2				Hydrophytic Vegetation
	=		/er	Present? Yes No
% Bare Ground in Herb Stratum 0				
Remarks:				
Evidence of hydrophytic vegetation inclu	ıdes a p	ositive	rapid te	est, a positive dominance test, and a
prevalence index that is less than or equ	al to 3.0).		

US Army Corps of Engineers

SOIL

Sampling Point: DP06w

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

	Matr	ix		Redox	Features	8			
Depth (inches)	Color (moist		Colo	r (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks
0-3	10YR 2/1	100				_		Sandy Loam	
3 - 10	10YR 3/1	98	10YR	4/6	2	С	М	Sandy Clay Loam	
10 - 16	2.5Y 6/3	100						Sandy Clay Loam	· -
10 10	2.01 0/0		_						
	· -		_						
									· -
-									
	-								
1Type: C=C	Concentration, D=	Doplotion D	M=Doduo	d Matrix CS	-Covered	d or Coate	d Sand C	roino ² Lo	postion: DI =Doro Lining M=Matrix
	Indicators: (Ap						u Sanu Gi		ocation: PL=Pore Lining, M=Matrix. cors for Problematic Hydric Soils ³ :
Histosol		p		ndy Redox (S		· · · · · ·			cm Muck (A10)
	pipedon (A2)			pped Matrix (,				ed Parent Material (TF2)
	listic (A3)			my Mucky M		1) (excep	t MLRA 1)		ry Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loa	my Gleyed N	/latrix (F2)		Oth	her (Explain in Remarks)
Deplete	ed Below Dark Su	rface (A11)		oleted Matrix					
	ark Surface (A12	,	·	lox Dark Sur					tors of hydrophytic vegetation and
	Mucky Mineral (S			oleted Dark S		7)			and hydrology must be present,
	Gleyed Matrix (S4		Re	dox Depressi	ons (F8)			unle	ess disturbed or problematic.
	Layer (if presen	t):							
Type:								l	
Depth (in	nches):							Hydric Soi	il Present? Yes No No
Remarks:									
_	/drology Indicate								
-	icators (minimum	of one requir	red; check						ondary Indicators (2 or more required)
	Water (A1)			Water-Stair			xcept	\	Water-Stained Leaves (B9) (MLRA 1, 2,
_	ater Table (A2)				, 2 , 4A , a	nd 4B)			4A, and 4B)
✓ Saturati	` '			Salt Crust (B11)				
	Marks (B1)		_	Aquatic Inv					Drainage Patterns (B10)
Sedime	ent Deposits (B2)			· ·		` '		!	Dry-Season Water Table (C2)
D :: 0 D	it- (DO)			Hydrogen S	Sulfide Oc	dor (C1)	Linde e D	! ;	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
	eposits (B3)		_	Oxidized R	Sulfide Od hizosphei	dor (C1) res along	-	ots (C3) <u>v</u>	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Algal Ma	lat or Crust (B4)			Oxidized R Presence of	Sulfide Oo hizosphei f Reduce	dor (C1) res along d Iron (C4	4)	; ots (C3);	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3)
Algal Ma	lat or Crust (B4) posits (B5)		_ _ _	Oxidized R Presence of Recent Iron	Sulfide Oo hizosphei f Reduce n Reductio	dor (C1) res along d Iron (C4 on in Tille	4) d Soils (C6	! ots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Algal Ma Iron Dep Surface	lat or Crust (B4) posits (B5) e Soil Cracks (B6)		——————————————————————————————————————	Oxidized R Presence of Recent Iron Stunted or	Sulfide Oo hizosphei f Reduce n Reductio Stressed	dor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	S bots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Algal Ma Iron De Surface Inundati	lat or Crust (B4) posits (B5) e Soil Cracks (B6) tion Vis ble on Ae	rial Imagery (Oxidized R Presence of Recent Iron	Sulfide Oo hizosphei f Reduce n Reductio Stressed	dor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	S bots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Algal Ma Iron Del Surface Inundati Sparsel	at or Crust (B4) posits (B5) Soil Cracks (B6) Sion Vis ble on Ae ly Vegetated Con	rial Imagery (Oxidized R Presence of Recent Iron Stunted or	Sulfide Oo hizosphei f Reduce n Reductio Stressed	dor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	S bots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Algal Ma Iron Del Surface Inundati Sparsel Field Obser	at or Crust (B4) posits (B5) e Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations:	rial Imagery (cave Surface	e (B8)	Oxidized R Presence of Recent Iron Stunted or Other (Exp	Sulfide Od hizospher f Reduce n Reduction Stressed lain in Re	dor (C1) res along d Iron (C4 on in Tille Plants (D	4) d Soils (C6	S bots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Algal M: Iron Dep Surface Inundati Sparsel Field Obser Surface Wat	at or Crust (B4) posits (B5) e Soil Cracks (B6) cion Vis ble on Ae ly Vegetated Con rvations: ter Present?	rial Imagery (cave Surface	(B8)	Oxidized R Presence of Recent Iror Stunted or Other (Exp	Sulfide Odhizospher f Reduce Reductio Stressed ain in Re	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6	S bots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Algal Ma Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table	at or Crust (B4) posits (B5) Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations: ter Present? Present?	rial Imagery (cave Surface Yes Yes	No	Oxidized R Presence of Recent Iror Stunted or Other (Exp	Sulfide Odhizospher f Reduce n Reduction Stressed lain in Re hes): 15	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A	ots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Algal M: Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca	at or Crust (B4) posits (B5) Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations: ter Present? Present?	Yes Yes Yes	No	Oxidized R Presence of Recent Iror Stunted or Other (Exp Depth (inc	Sulfide Odhizospher of Reduce of Reduction Stressed clain in Re hes): hes): hes): 0	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A	ots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Algal Magaran Iron Department Iron Department Iron Department Iron Department Iron Department Iron Department Iron Period Iron Iron Department Iron Period Iron Iron Iron Iron Iron Iron Iron Iron	at or Crust (B4) posits (B5) e Soil Cracks (B6) cion Vis ble on Ae ly Vegetated Con rvations: ter Present? e Present? pillary fringe)	Yes Yes Yes	No	Oxidized R Presence of Recent Iror Stunted or Other (Exp Depth (inc	Sulfide Odhizospher of Reduce of Reduction Stressed clain in Re hes): hes): hes): 0	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A	ots (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Algal M: Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	at or Crust (B4) posits (B5) e Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (str	rial Imagery (cave Surface Yes Yes Yes V eam gauge, I	No No No No nonitoring	Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (incomplete Iron Depth (inco	Sulfide Odhizospher of Reduce of Reduction Stressed sain in Re hes): hes): 15 hes): 0	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A Wetl	ots (C3) v (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Algal M: Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re	at or Crust (B4) posits (B5) e Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (str	rial Imagery (cave Surface Yes Yes Yes V eam gauge, I	No No No No nonitoring	Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (incomplete Iron Depth (inco	Sulfide Odhizospher of Reduce of Reduction Stressed sain in Re hes): hes): 15 hes): 0	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A Wetl	ots (C3) v (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Algal M: Iron Dep Surface Inundati Sparsel Field Obser Surface Wat Water Table Saturation P (includes ca Describe Re Remarks: Evidenc	at or Crust (B4) posits (B5) e Soil Cracks (B6) tion Vis ble on Ae ly Vegetated Con rvations: ter Present? e Present? Present? apillary fringe) ecorded Data (str	rial Imagery (cave Surface Yes Yes Yes V eam gauge, I	No No No No nonitoring	Oxidized R Presence of Recent Iron Stunted or Other (Exp Depth (incomplete Iron Depth (inco	Sulfide Odhizospher of Reduce of Reduction Stressed sain in Re hes): hes): 15 hes): 0	dor (C1) res along d Iron (C4 on in Tille Plants (D marks)	4) d Soils (C6 1) (LRR A Wetl	ots (C3) v (C3)	Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

Project/Site: Silicon Mountain		City/County	Silver Bo	ow County	Sampling Date: _	2024-07-23
Applicant/Owner: Montana Dept. of Transportatio	n			State: Montana	Sampling Point:	DP07u
Investigator(s): Richard Baumgarten						
Landform (hillslope, terrace, etc.): Terrace		Local relief	(concave,	convex, none): Convex	Slop	oe (%): 0
Subregion (LRR): E 43B	Lat: 45.	997735		Long: -112.6622415	Datur	m: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannix	lee, frequently	flooded com	plex, 0 to 4 pe	ercent slopes NWI classific	ation: PEM1A	
Are climatic / hydrologic conditions on the site typical for thi	s time of yea	ar? Yes	✓ No_	(If no, explain in R	emarks.)	
Are Vegetation, Soil, or Hydrologys						No
Are Vegetation, Soil, or Hydrologyı				eded, explain any answe		
SUMMARY OF FINDINGS – Attach site map				ocations, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes N	lo					
Hydric Soil Present? Yes N	10	Is th	No			
Wetland Hydrology Present? Yes N	lo	With	in a Wetlar	iu: 165		•
Remarks: Upland data point on terrace summi	t. 5-10 f	t above	e wetla	nd data point.		
VEGETATION – Use scientific names of plan						
VEGETATION - Use scientific flames of plan	Absolute	Dominant	Indicator	Dominance Test work	sheet:	
Tree Stratum (Plot size: 30 ft r		Species?		Number of Dominant Sp	pecies	
1				That Are OBL, FACW,	or FAC: 1	(A)
2				Total Number of Domin		
3				Species Across All Stra	ta: <u>I</u>	(B)
4.		= Total Co		Percent of Dominant Sp) (A/D)
Sapling/Shrub Stratum (Plot size: 15 ft r)		10tai 00	VCI	That Are OBL, FACW, or Prevalence Index work) (A/B)
1. Salix lasiandra	_ 1		FACW	Total % Cover of:		y by:
2					x 1 = 0	
3				FACW species 6		
4				FAC species 75	x 3 = 225	<u> </u>
5	1	= Total Co	Wer		x 4 = <u>4</u>	
Herb Stratum (Plot size: 5 ft r)	<u></u>	10tai 00	VCI		x 5 = <u>30</u>	
1 Leymus cinereus	<u>75</u>		FAC	Column Totals: 88	(A) <u>271</u>	(B)
2. Festuca ovina	_ <u>5</u>		UPL	Prevalence Index	= B/A = 3.07	
3. Juncus balticus	_ 5		FACW	Hydrophytic Vegetation		
4. Descurainia incana 5. Thlaspi arvense	- <u>1</u>		FACU	1 - Rapid Test for F		ation
			UPL	∠ 2 - Dominance Tes		
6				3 - Prevalence Inde		
7				4 - Morphological A data in Remarks	daptations* (Provi s or on a separate	de supporting sheet)
9.				5 - Wetland Non-Va	ascular Plants ¹	,
10.				Problematic Hydro	phytic Vegetation ¹	(Explain)
11.				¹ Indicators of hydric soi		
	87	= Total Cov	/er	be present, unless distu	irbed or problemat	tiC.
Woody Vine Stratum (Plot size:)						
1			-	Hydrophytic Vegetation		
2		= Total Cov	·or	Present? Yes	s No	
% Bare Ground in Herb Stratum 13		_ 10tal C0\	√CI			
Remarks:				•		
Positive dominance test is not represen	tative of	f hvdror	hvtic ve	egetation, Domina	ant vegetation	n was

Positive dominance test is not representative of hydrophytic vegetation. Dominant vegetation was FAC basin wildrye, which has deep root systems capable of reaching much lower water tables.

SOIL Sampling Point: DP07u

Profile Desc Depth	cription: (Descri Matri		=	cument the indic edox Features	ator or confirn	n the absence o	of indicators.)			
(inches)	Color (moist)		Color (moist)		rpe ¹ Loc ²	Texture	Remark	S		
0 - 15	10YR 3/3	100				Loam				
_										
			· 							
			· 							
-										
¹ Type: C=C	oncentration D=I	Denletion PA	/=Peduced Matrix	, CS=Covered or (Coated Sand G	raine ² l oca	ation: PL=Pore Lining	M=Matrix		
•			II LRRs, unless o		Soated Sand G		s for Problematic Hy			
Histosol			Sandy Red	•			Muck (A10)			
	pipedon (A2)		Stripped Ma	, ,			Parent Material (TF2)			
	istic (A3)			ky Mineral (F1) (ex	xcept MLRA 1)		Shallow Dark Surface	(TF12)		
	en Sulfide (A4)			ved Matrix (F2)	. ,	-	(Explain in Remarks)			
Deplete	d Below Dark Sur	, ,	Depleted M				,			
_	ark Surface (A12)			Surface (F6)			s of hydrophytic veget			
-	Mucky Mineral (S1			ark Surface (F7)		wetland hydrology must be present,				
	Bleyed Matrix (S4		Redox Dep	ressions (F8)		unless	disturbed or problema	atic.		
	Layer (if present	•								
Type:								🗸		
Depth (in Remarks:	ches):					Hydric Soil F	Present? Yes	No		
•	drology Indicato									
-	*	of one require	ed; check all that a				dary Indicators (2 or m			
	Water (A1)			Stained Leaves (E		Wa	ater-Stained Leaves (E	39) (MLRA 1, 2,		
_	ater Table (A2)			RA 1, 2, 4A, and 4	4B)	_	4A, and 4B)			
Saturati	` '		Salt Ci				ainage Patterns (B10)			
	larks (B1)			c Invertebrates (B			y-Season Water Table			
	nt Deposits (B2)			gen Sulfide Odor (•		turation Visible on Aer			
	posits (B3)						comorphic Position (D2	2)		
	at or Crust (B4)			nce of Reduced Iro			allow Aquitard (D3)			
	oosits (B5)			t Iron Reduction in			C-Neutral Test (D5)	(LDD A)		
	Soil Cracks (B6)	! - I I I //		d or Stressed Plan			ised Ant Mounds (D6)			
	on Vis ble on Aer			(Explain in Remark	KS)	Fro	ost-Heave Hummocks	(D7)		
	y Vegetated Cond	ave Surface	(D0)		<u> </u>					
Field Obser		Voc	No. V Dest	(inches):						
Surface Wat				(inches):						
Water Table				(inches):						
Saturation P (includes cap		Yes	No <u> </u>	(inches):	Wetl	land Hydrology	Present? Yes	No		
		am gauge, n	nonitoring well, ae	rial photos, previou	us inspections),	, if available:				
Remarks:										
No evide	ence of hyd	drologic	indicators	observed.						
	,	3								

Project/Site: Silicon Mountain	Silver Bo	ow County	Sampling Date: 2024-07-23			
Applicant/Owner: Montana Dept. of Transportation		State: Montana	Sampling Point: DP07w			
Investigator(s): E Reynaud Section, Township, Range: S24 T3N R9W						
Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave Slope (
Subregion (LRR): E 43B	_ Lat: <u>45.</u>	9977967		Long: -112.6622238	Datum: NAD 83	
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle	ee, frequently	flooded com	plex, 0 to 4 pe	ercent slopes NWI classifica	ation: PEM1A	
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Yes	✓ No _	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrologys	ignificantly	disturbed?	Are "	Normal Circumstances" pr	resent? Yes No	
Are Vegetation, Soil, or Hydrologyn	aturally pro	blematic?	(If ne	eded, explain any answer	s in Remarks.)	
SUMMARY OF FINDINGS - Attach site map	showing	samplin	g point le	ocations, transects,	important features, etc.	
Hydrophytic Vegetation Present? Yes No						
	o		e Sampled		No	
Wetland Hydrology Present? Yes No	D	with	in a Wetlar	id? fes	NO	
Remarks:						
Data point taken near south border o	f site.					
VEGETATION – Use scientific names of plant	ts.					
20.65 **	Absolute			Dominance Test works	sheet:	
	% Cover			Number of Dominant Sp		
1				That Are OBL, FACW, o	r FAC: 1 (A)	
2				Total Number of Domina		
3				Species Across All Strat	a: <u>1</u> (B)	
4		= Total Co	ver	Percent of Dominant Spe That Are OBL, FACW, o	ecies r FAC: 100.00 (A/B)	
Sapling/Shrub Stratum (Plot size: 15 ft r)		-	•••	Prevalence Index work		
1. Salix geyeriana	1		FACW	Total % Cover of:		
2					x 1 = 30	
3					x 2 = 120	
4					x 3 = 33	
5	_			FACU species 0	x 4 = 0	
Herb Stratum (Plot size: 5 ft r)	1	= Total Co	ver	UPL species 0	x 5 = 0	
1. Juncus balticus	55	~	FACW	Column Totals: 101	(A) <u>183</u> (B)	
2. Scirpus microcarpus	15		OBL	Prevalence Index	= R/A = 1.81	
3. Alopecurus arundinaceus	10		FAC	Hydrophytic Vegetation		
4. Carex nebrascensis	5		OBL	✓ 1 - Rapid Test for H		
5. Cicuta douglasii	5		OBL	✓ 2 - Dominance Test	is >50%	
6. Potentilla anserina	5		OBL	✓ 3 - Prevalence Index	x is ≤3.0 ¹	
7. Mentha arvensis	4		FACW	4 - Morphological Ad	daptations ¹ (Provide supporting	
8. Cirsium arvense	1		FAC		or on a separate sheet)	
9				5 - Wetland Non-Va		
10					hytic Vegetation ¹ (Explain) and wetland hydrology must	
11	100			be present, unless distu		
Woody Vine Stratum (Plot size:)	100	= Total Cov	/er			
1				Hydrophytic		
2				Vegetation	✓ N-	
W Date Convent in Hart Observer 0		= Total Cov	/er	Present? Yes	. No	
% Bare Ground in Herb Stratum 0 Remarks:						
		!!!				
Evidence of hydrophytic vegetation included in the control of the	•	oositive	rapid te	est, a positive dom	linance test, and a	
prevalence index less than or equal to 3	.0.					

US Army Corps of Engineers

SOIL Sampling Point: DP07w

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix			ox Features				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	e Remarks
0-6	10YR 3/2	100					Loam	
6 - 16	10YR 5/1	100					Sandy Clay Lo	oam
_							-	
							-	
							-	
-								
-								
¹Tyne: C=C	oncentration D=De	enletion RM=	Reduced Matrix, C	S=Covered	or Coate	d Sand Gr	rains 2	² Location: PL=Pore Lining, M=Matrix.
			LRRs, unless othe			a cana ch		cators for Problematic Hydric Soils ³ :
Histosol			Sandy Redox (,			2 cm Muck (A10)
	pipedon (A2)		Stripped Matrix					Red Parent Material (TF2)
-	istic (A3)		Loamy Mucky) (except	MLRA 1)		Very Shallow Dark Surface (TF12)
Hydroge	en Sulfide (A4)		Loamy Gleyed	Matrix (F2)		(Other (Explain in Remarks)
	d Below Dark Surfa	ace (A11)	Depleted Matri	. ,			2	
	ark Surface (A12)		Redox Dark Su		_\			cators of hydrophytic vegetation and
-	Mucky Mineral (S1)		Depleted Dark	`	7)			retland hydrology must be present,
	Gleyed Matrix (S4) Layer (if present):		Redox Depres	SIONS (FO)			T ui	nless disturbed or problematic.
Type:	Layer (ii present).							
· · ·	ohoo):						Uvdria (Soil Present? Yes V No No
Remarks:	ches):						Hyunc	Soli Fresent: Tes NO
Remarks.								
Presence	e of a deple	ted mat	rix indicates	hydric	soils.			
	-							
HYDROLO	GY							
Wetland Hy	drology Indicator	s:						
Primary India	cators (minimum of	one required	d; check all that app	ly)			Se	econdary Indicators (2 or more required)
Surface	Water (A1)		Water-Sta	ined Leave	es (B9) (e x	xcept		_ Water-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ater Table (A2)			1, 2, 4A, a		•		4A, and 4B)
<u>✓</u> Saturation	on (A3)		Salt Crust	(B11)				_ Drainage Patterns (B10)
Water M	larks (B1)		Aquatic Ir	vertebrates	s (B13)			_ Dry-Season Water Table (C2)
Sedimer	nt Deposits (B2)		Hydrogen	Sulfide Oc	lor (C1)			_ Saturation Visible on Aerial Imagery (C9)
Drift Dep	posits (B3)		Oxidized	Rhizospher	es along l	Living Roo	ots (C3) 🔽	Ceomorphic Position (D2)
Algal Ma	at or Crust (B4)		Presence	of Reduce	d Iron (C4	.)		_ Shallow Aquitard (D3)
Iron Dep	oosits (B5)		Recent Ire	on Reduction	on in Tilled	d Soils (C6	6) <u>~</u>	FAC-Neutral Test (D5)
Surface	Soil Cracks (B6)		Stunted o	r Stressed	Plants (D	1) (LRR A))	_ Raised Ant Mounds (D6) (LRR A)
Inundati	on Vis ble on Aeria	I Imagery (B	7) Other (Ex	plain in Re	marks)		_	_ Frost-Heave Hummocks (D7)
Sparsely	y Vegetated Conca	ve Surface (I	38)					
Field Obser			j					
Surface Wat	er Present?	· · · · · · · · · · · · · · · · · · ·	No Depth (ir			_		
Water Table	Present?		No Depth (ir			_		
Saturation P		Yes	No Depth (ir	iches): 0		_ Wetla	and Hydro	ology Present? Yes No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:								
200520 . 100020 22								
Remarks:								
				••				
Evidence	e of wetland	a nydrol	ogy includes	soll sa	ituratio	on, ged	omorph	hic position, and a positive
FAC-Ne	utral test.							

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

Project/Site: Silicon Mountain		City/County	Silver Bo	ow County	Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. of Transportatio	n			State: Montana	Sampling Point: DP08u
Investigator(s): E Reynaud		Section, To	wnship, Ra	nge: S24 T3N R9W	
					Slope (%): 3
Subregion (LRR): E 43B	Lat: 46.	0019343		Long: -112.6565517	Datum: NAD 83
Soil Map Unit Name: 11A - Mannixlee-Bonebasin comple	x, 0 to 4 pe	rcent slope	s, frequent	tly flooded NWI classifica	ation: Not mapped
Are climatic / hydrologic conditions on the site typical for thi	s time of vea	ar? Yes	No	(If no. explain in Re	emarks.)
Are Vegetation, Soil, or Hydrologys	-				resent? Yes No
Are Vegetation, Soil, or Hydrologyı				eeded, explain any answer	
SUMMARY OF FINDINGS – Attach site map					
Hydrophytic Vegetation Present? Yes N	lo 🗸				
Hydric Soil Present? Yes N	lo 🗸		e Sampled		🗸
Wetland Hydrology Present? Yes N	lo	with	in a Wetlan	nd? Yes	No
Remarks:					
Upland data point taken 25 feet upg	radient	of wetl	and da	ta point.	
└ VEGETATION – Use scientific names of plar	ıte				
VEGETATION OSC SCIENTING HAMES OF Plan	Absolute	Dominant	Indicator	Dominance Test works	sheet:
Tree Stratum (Plot size: 30 ft r	% Cover			Number of Dominant Sp	
1				That Are OBL, FACW, o	
2				Total Number of Domina	ant _
3				Species Across All Strat	a: <u>2</u> (B)
4				Percent of Dominant Sp	
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total Co	ver	That Are OBL, FACW, o	\ , ,
1				Prevalence Index work	
2				Total % Cover of: OBL species 0	Multiply by: x 1 = 0
3					x 2 = 0
4				FAC species 60	x 3 = 180
5				FACU species 25	x 4 = 100
Herb Stratum (Plot size: 5 ft r)		= Total Co	ver	UPL species 8	x 5 = 40
1. Poa pratensis	60		FAC	Column Totals: 93	(A) <u>320</u> (B)
2. Pascopyrum smithii	25	V	FACU	Prevalence Index	= R/A = 3.44
3. Ericameria nauseosa	8		UPL	Hydrophytic Vegetatio	
4				1 - Rapid Test for H	ydrophytic Vegetation
5				2 - Dominance Test	is >50%
6				3 - Prevalence Inde	
7					daptations ¹ (Provide supporting or on a separate sheet)
8				5 - Wetland Non-Va	· · · · · · · · · · · · · · · · · · ·
9					hytic Vegetation ¹ (Explain)
10 11		-			and wetland hydrology must
···	00	= Total Cov	/er	be present, unless distu	
Woody Vine Stratum (Plot size:)	_		o .		
1				Hydrophytic	
2				Vegetation Present? Yes	s No
% Bare Ground in Herb Stratum _7		= Total Cov	er/		-
Remarks:				l	
No evidence of hydrophytic vegetat	ion obs	erved.			

SOIL Sampling Point: DP08u

Depth	Matrix		Redox Features	
(inches)	Color (moist)	%	Color (moist) % Type ¹ Loc ²	Texture Remarks
0 - 8	10YR 3/3	100		Loam
-				
_	-			
	-			·
				·
-				
¹Type: C=C	Concentration, D=De	pletion, RM=F	Reduced Matrix, CS=Covered or Coated Sand G	Grains. ² Location: PL=Pore Lining, M=Matrix.
			RRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
Histoso	ol (A1)	_	_ Sandy Redox (S5)	2 cm Muck (A10)
Histic E	Epipedon (A2)	_	Stripped Matrix (S6)	Red Parent Material (TF2)
	Histic (A3)	_	Loamy Mucky Mineral (F1) (except MLRA 1	· · · · · · · · · · · · · · · · · · ·
	en Sulfide (A4)	<u>-</u>	Loamy Gleyed Matrix (F2)	Other (Explain in Remarks)
	ed Below Dark Surfa	ce (A11) _	Depleted Matrix (F3)	3
	Dark Surface (A12)	-	Redox Dark Surface (F6)	³ Indicators of hydrophytic vegetation and
	Mucky Mineral (S1) Gleyed Matrix (S4)	-	Depleted Dark Surface (F7) Redox Depressions (F8)	wetland hydrology must be present, unless disturbed or problematic.
	Layer (if present):	_	Nedox Depressions (1 0)	unless distarbed of problematic.
Type:				
,, <u> </u>	nches):		_	Hydric Soil Present? Yes No
Remarks:				1.yan.e con 1.coom 1.co 1.co
HYDROLC Wetland Hy				
D:	ydrology Indicators			
	licators (minimum of		check all that apply)	Secondary Indicators (2 or more required)
Surface	licators (minimum of e Water (A1)		Water-Stained Leaves (B9) (except	Water-Stained Leaves (B9) (MLRA 1, 2,
Surface High W	ilicators (minimum of e Water (A1) /ater Table (A2)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B)
Surface High W Saturat	ilicators (minimum of e Water (A1) /ater Table (A2) tion (A3)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10)
Surface High W Saturat Water M	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2)
Surface High W Saturati Water M Sedime	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2)		 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) 	 Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9
Surface High W Saturat Water N Sedime Drift De	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3)		 Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro 	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2)
Surface High W Saturati Water N Sedime Drift De Algal M	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3)
Surface High W Saturat Water M Sedime Drift De Algal M Iron De	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5)		Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface	clicators (minimum of e Water (A1) Vater Table (A2) Vation (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6)	one required;	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial	one required;	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat	clicators (minimum of the Water (A1) Vater Table (A2) Ition (A3) Marks (B1) Pent Deposits (B2) Peposits (B3) Plat or Crust (B4) Peposits (B5) Peposits (B5) Peposits (B6) Peposits (B6) Peposits (B6) Peposits (B6) Peposits (B6)	one required;	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Surface High W Saturat Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel	clicators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar irvations:	one required; Imagery (B7) ve Surface (B8	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Surface High W Saturat Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel	cicators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial cirvations: ater Present?	one required; Imagery (B7) ve Surface (Bi	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A)
Surface High W Saturat Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Surface Wa	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar revations: ater Present? e Present?	Imagery (B7) ve Surface (B8 Yes N Yes N	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obset Surface Wa Water Table Saturation F (includes ca	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? epillary fringe)	Imagery (B7) ve Surface (Bi Yes N Yes N Yes N	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? epillary fringe)	Imagery (B7) ve Surface (Bi Yes N Yes N Yes N	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? epillary fringe)	Imagery (B7) ve Surface (Bi Yes N Yes N Yes N	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obser Surface Wa Water Table Saturation F (includes ca	licators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? epillary fringe)	Imagery (B7) ve Surface (Bi Yes N Yes N Yes N	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9 oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) Shallow Aquitard (D5) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obsel Surface Wa Water Table Saturation F (includes ca Describe Re	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? Present? apillary fringe) ecorded Data (strean	Imagery (B7) ve Surface (B8 Yes N Yes N Yes N T gauge, mon	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Ro Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C Stunted or Stressed Plants (D1) (LRR A Other (Explain in Remarks)	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water N Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obsel Surface Wa Water Table Saturation F (includes ca Describe Re	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? Present? apillary fringe) ecorded Data (strean	Imagery (B7) ve Surface (B8 Yes N Yes N Yes N T gauge, mon	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Wet	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)
Surface High W Saturati Water M Sedime Drift De Algal M Iron De Surface Inundat Sparsel Field Obset Surface Wa Water Table Saturation F (includes ca Describe Re	icators (minimum of e Water (A1) /ater Table (A2) tion (A3) Marks (B1) ent Deposits (B2) eposits (B3) flat or Crust (B4) eposits (B5) e Soil Cracks (B6) tion Vis ble on Aerial ely Vegetated Concar ervations: ater Present? e Present? Present? apillary fringe) ecorded Data (strean	Imagery (B7) ve Surface (B8 Yes N Yes N Yes N T gauge, mon	Water-Stained Leaves (B9) (except MLRA 1, 2, 4A, and 4B) Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres along Living Roman Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soils (C4) Stunted or Stressed Plants (D1) (LRR 4) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): Wet	Water-Stained Leaves (B9) (MLRA 1, 2, 4A, and 4B) Drainage Patterns (B10) Dry-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9) Oots (C3) Geomorphic Position (D2) Shallow Aquitard (D3) FAC-Neutral Test (D5) A) Raised Ant Mounds (D6) (LRR A) Frost-Heave Hummocks (D7)

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

Project/Site: Silicon Mountain	C	ity/County:	Silver Bo	w County	Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. of Transportation	1			State: Montana	Sampling Point: DP08w
Investigator(s): E Reynaud	S	Section, Tov	vnship, Rar	nge: S24 T3N R9W	
					Slope (%): 0
Subregion (LRR): E 43B	Lat: 46.0	019897		Long: -112.6565024	Datum: NAD 83
Soil Map Unit Name: 11A - Mannixlee-Bonebasin complex	, 0 to 4 per	cent slopes	s, frequent	ly flooded NWI classifica	ation: Not mapped
Are climatic / hydrologic conditions on the site typical for this	time of year	r? Yes	/ No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology si	-				resent? Yes No
Are Vegetation, Soil, or Hydrologyna	aturally prob	lematic?	(If ne	eded, explain any answer	s in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	showing	sampling	g point lo	ocations, transects,	important features, etc.
Hydrophytic Vegetation Present? Yes No					
Hydric Soil Present? Yes No			e Sampled n a Wetlan		No
Wetland Hydrology Present? Yes No	·	Within	ii a wellali	u: 163	
Remarks:					
Data point taken in expanding wetlar	ıd.				
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r		Dominant		Dominance Test works	heet:
1. Juniperus scopulorum	% Cover 5		UPL	Number of Dominant Sp That Are OBL, FACW, o	
2.				, ,	
3.				Total Number of Domina Species Across All Strat	•
4				Percent of Dominant Sp	ocios
Cooling/Charle Charles (Diet circ. 15 ft r	5	= Total Cov	/er	That Are OBL, FACW, o	
Sapling/Shrub Stratum (Plot size: 15 ft r)				Prevalence Index work	sheet:
1 2					Multiply by:
3					x 1 = 0
4				FAC species 0	_
5					x 3 = 0
5.0	:	= Total Cov	/er	•	x = 0 x = 5 = 25
Herb Stratum (Plot size: 5 ft r) 1. Juncus balticus	90	~	FACW		(A) 205 (B)
2				Prevalence Index	
4				Hydrophytic Vegetatio 1 - Rapid Test for H	
5				2 - Dominance Test	
6.				✓ 3 - Prevalence Inde	
7.					daptations ¹ (Provide supporting
8				data in Remarks	or on a separate sheet)
9				5 - Wetland Non-Va	
10					hytic Vegetation ¹ (Explain)
11				'Indicators of hydric soil be present, unless distur	and wetland hydrology must
Woody Vine Stratum (Plot size:)	90 =	Total Cov	er		
1				Hydrophytic	
2.				Hydrophytic Vegetation	
		Total Cov	er	Present? Yes	No
% Bare Ground in Herb Stratum 10	_ _				
Remarks:		_			
Evidence of hydrophytic vegetation inclu	udes a p	revalen	ce inde	x less than or equ	al to 3.0.

SOIL Sampling Point: DP08w

Profile Desc	ription: (Describe	to the de	oth needed to docur	nent the	indicator	or confirm	the absence	of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	<u>Texture</u>	Remarks
0 - 2	5Y 3/3	100					Loam	Many roots.
2 - 10	10YR 4/2	98	7.5YR 4/6	2	С	М	Clay Loam	
_								
	-		-					·
				·	-			
-								
1Tuno: C=C	neentration D=De	nlation DM	- Doduced Metrix CG		d or Coots			cation: PL=Pore Lining, M=Matrix.
			=Reduced Matrix, CS LRRs, unless other			eu Sanu Gr		ors for Problematic Hydric Soils ³ :
Histosol		cable to al	Sandy Redox (cu.,			m Muck (A10)
	oipedon (A2)		Stripped Matrix	,				Parent Material (TF2)
Black Hi			Loamy Mucky N		1) (excep	t MLRA 1)		y Shallow Dark Surface (TF12)
_	n Sulfide (A4)		Loamy Gleyed					er (Explain in Remarks)
	d Below Dark Surfa	ce (A11)	✓ Depleted Matrix		-,			(=
	ark Surface (A12)	` ,	Redox Dark Su)		³ Indicato	ors of hydrophytic vegetation and
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (I	- 7)		wetla	and hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress	ions (F8)			unles	ss disturbed or problematic.
	_ayer (if present):							
Type: Co	obbles							
Depth (inc	ches): 10						Hydric Soil	Present? Yes No
Remarks:							I.	
HYDROLO	GY drology Indicators							
-			ed; check all that appl)			Conn	ndary Indicators (2 or more required)
		one require			(DO) (a	waant		ndary Indicators (2 or more required)
	Water (A1)		Water-Sta			except	v	Vater-Stained Leaves (B9) (MLRA 1, 2,
Saturatio	iter Table (A2)		Salt Crust	1, 2, 4A,	and 46)		r	4A, and 4B) Prainage Patterns (B10)
	` ,		Aquatic In	` '	oc (B13)			-
	arks (B1) nt Deposits (B2)		Hydrogen					Ory-Season Water Table (C2) Saturation Visible on Aerial Imagery (C9)
	oosits (B3)					Living Roo	_	Geomorphic Position (D2)
	at or Crust (B4)		Oxidized P		_	_	—	Shallow Aquitard (D3)
_	oosits (B5)					ed Soils (C6		AC-Neutral Test (D5)
	Soil Cracks (B6)					01) (LRR A)		Raised Ant Mounds (D6) (LRR A)
	on Vis ble on Aerial	Imagery (F				/ I / (LIXIX A)		rost-Heave Hummocks (D7)
·	Vegetated Conca	• • •	, <u>—</u>	Jani III IX	omanto)		'	rost-ricave riaminocks (D1)
Field Observ		5 Carrage	()					
Surface Water		Yes	No Depth (inc	ches).				
			No Depth (in					
Water Table			No Depth (in				and Uvdeels	y Present? Yes 🗸 No
Saturation Projection (includes cap		res	No _ • Depth (in	cnes):		wetia	ana Hyarolog	y Present? Yes No
		n gauge, m	onitoring well, aerial p	ohotos, pi	revious ins	spections),	if available:	
Domarks								
Remarks:								
Evidence	e of wetland	hydro	logy includes	geom	orphic	c positi	on and a	positive FAC-Neutral
test.								

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

Project/Site: Silicon Mountain		City/Coun	ty: Silver Bo	ow County	Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. Of Transportation	า			State: Montana	Sampling Point: DP09u
Investigator(s): McEldowney	:			nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Closed Depression				=	e Slope (%): 0
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
Are climatic / hydrologic conditions on the site typical for this				<u>-</u>	
Are Vegetation, Soil, or Hydrologysi	-				present? Yes No
Are Vegetation, Soil, or Hydrology na				·	<u> </u>
SUMMARY OF FINDINGS – Attach site map s	showing	sampli	ng point le	ocations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes No					
Hydric Soil Present? Yes No) <u> </u>		the Sampled thin a Wetlar		No
Wetland Hydrology Present? Yes No		•	umi a weda	163	
Remarks:		_			
Upland data point in cell 6 near the ra	ailroad	tracks	6.		
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r	Absolute % Cover		nt Indicator ? Status	Dominance Test work	
1				Number of Dominant Sp That Are OBL, FACW, of	
2.					
3				Total Number of Domin Species Across All Stra	^
4				Percent of Dominant Sp	necies
Sapling/Shrub Stratum (Plot size: 15 ft r)		= Total C	Cover	That Are OBL, FACW, of	
				Prevalence Index wor	ksheet:
1 2					Multiply by:
3.					x 1 = 0
4.				40	$x = \frac{0}{30}$
5.				FAC species 13	x 3 = 39
- 6		= Total C	Cover		x 4 = 180
Herb Stratum (Plot size: 5 ft r	00		E4011	UPL species 0 Column Totals: 58	x = 0 (A) 219 (B)
1. Melilotus officinalis	20		FACU	Column Totals. 30	(A) <u>219</u> (B)
2. Pascopyrum smithii 3 Leymus cinereus	15 10		FACU FAC	Prevalence Index	
Sonchus arvensis	10		FACU	Hydrophytic Vegetation	
5 Alopecurus arundinaceus	3	-	FAC	1 - Rapid Test for H	
6.		-		2 - Dominance Tes 3 - Prevalence Inde	
7.					Adaptations ¹ (Provide supporting
8.				data in Remarks	s or on a separate sheet)
9.				5 - Wetland Non-Va	ascular Plants ¹
10				Problematic Hydro	phytic Vegetation ¹ (Explain)
11					il and wetland hydrology must
	58	= Total C	over	be present, unless distu	arbed or problematic.
Woody Vine Stratum (Plot size:)					
1				Hydrophytic Vegetation	
2					s No
% Bare Ground in Herb Stratum 42		TOTAL	O V C I		
Remarks:				•	
Upland data point dominated by wes	tern wh	neatgr	ass and	yellow sweetcle	over.

SOIL Sampling Point: DP09u

Profile Desc	ription: (Descr	ibe to the de	pth needed to	docun	nent the i	ndicator	or confire	m the absence	of indicate	ors.)	
Depth	Matri				x Features			_		_	
(inches)	Color (moist)) %	Color (mo	oist)	%	Type ¹	Loc ²	<u>Texture</u>		Remarks	
0 - 12	10YR 4/3		_					Sandy Loam	Dry.		
-			-								
									-		
									-		
			_								
-											
									-		
1				00				. 21		D 1111	
	oncentration, D=I						ed Sand G			Pore Lining, N	_
_	Indicators: (Ap	plicable to a				ea.)				blematic Hydr	ic soils :
Histosol	, ,		Sandy F	•				·	m Muck (A1	,	
Black Hi	oipedon (A2)		Stripped			1) (ovcon	t MLRA 1	· 		iterial (TF2) Dark Surface (1	ΓΕ12\
	en Sulfide (A4)		-	-	Matrix (F2		LIVILKAI		•	in Remarks)	. [12)
	d Below Dark Su	rface (A11)	Deplete	-		,		0111	ei (Expiaiii	iii iteiliaiks)	
	ark Surface (A12)	, ,			face (F6)			3Indicate	ors of hydro	phytic vegetat	ion and
	lucky Mineral (S	•			Surface (F	7)				gy must be pre	
-	Gleyed Matrix (S4				ions (F8)	,			•	l or problemati	
	Layer (if present				(- /						
Type:											
· · ·	ches):							Hydric Soil	Present?	Yes	No_ 🗸
Remarks:								1.1,4			
HYDROLO Wetland Hy	GY drology Indicato	ors:									
_	cators (minimum		ed: check all th	nat apply	/)			Seco	ndary Indica	ators (2 or mor	e required)
	Water (A1)	<u> </u>			ned Leav	es (R9) (e	xcent			ed Leaves (B9	
' 	iter Table (A2)				1, 2, 4A, a		хоорг	<u> </u>	4A, and) (WENA 1, 2,
Saturation	, ,			It Crust		iiiu 40)		г		itterns (B10)	
Water M	` '		_		ertebrate	c (P13)		·	•	Water Table (C2)
	nt Deposits (B2)				Sulfide O						l Imagery (C9)
							Living Do				i illagery (C9)
	oosits (B3)					_	_	ots (C3) G			
	at or Crust (B4)				of Reduce				Shallow Aqu		
	oosits (B5)						d Soils (C		AC-Neutra		. DD A\
	Soil Cracks (B6)						1) (LRR A			Mounds (D6) (I	
	on Vis ble on Aer			ner (Exp	lain in Re	marks)		⊦	rost-Heave	Hummocks ([)/)
	/ Vegetated Cond	cave Surface	(B8)								
Field Obser	vations:										
Surface Wat	er Present?		No De								
Water Table	Present?		No De								
Saturation P		Yes	No <u>′</u> De	epth (inc	ches):		Wet	land Hydrolog	y Present?	Yes	No
(includes cap	oillary fringe) corded Data (stre	am gaugo r	monitoring wall	aorial r	hotos pr	ovious ins	noctions)	if available:			
Describe Re	corded Data (Sire	ani gauge, i	nonitoring wen,	aenai p	motos, pr	evious iris	spections)	, ii avallable.			
Remarks:											
No evide	ence of we	tland hy	droloav a	bser	ved.						
			5.597 \	5 51	•.•						

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

Project/Site: Silicon Mountain	(City/County	: Silver Bo	ow County Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. of Transportation	n			State: Montana Sampling Point: DP09w
Investigator(s): Richard Baumgarten	;	Section, To	wnship, Ra	nge: S24 T3N R9W
Landform (hillslope, terrace, etc.): Floodplain		Local relief	(concave,	convex, none): Concave Slope (%): 1
Subregion (LRR): E 43B	Lat: 45.	9978126		Long: -112.6634828 Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannix				
Are climatic / hydrologic conditions on the site typical for this	s time of yea	ar? Yes	✓ No _	(If no, explain in Remarks.)
Are Vegetation, Soil, or Hydrologys	ignificantly	disturbed?	Are "	Normal Circumstances" present? Yes No
Are Vegetation, Soil r				
SUMMARY OF FINDINGS – Attach site map	showing	samplin	g point le	ocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes N	0	1- 4	. 011	
Hydric Soil Present? Yes N	o <u> </u>		ne Sampled nin a Wetlan	. /
Wetland Hydrology Present? Yes N Remarks:	0			
Wetland data point located 40 feet from train tracks. P appears to be struggling to remain wet and is very small VEGETATION – Use scientific names of plan	all.	soil obser	ved, vegeta	ation is clearly dominated by Baltic rush. Wetland
VEGETATION OSC SOICHMIO HUMOS OF Plan	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30 ft r) 1	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3		-		Species Across All Strata: 2 (B)
4				Percent of Dominant Species
Sapling/Shrub Stratum (Plot size: 15 ft r		= Total Co	ver	That Are OBL, FACW, or FAC: 100.00 (A/B)
1. Salix lasiandra	5		FACW	Prevalence Index worksheet:
2.				Total % Cover of: Multiply by:
3				OBL species $\frac{1}{80}$ $x 1 = \frac{1}{160}$ FACW species $\frac{1}{80}$ $x 2 = \frac{1}{160}$
4				FAC species 1
5				FACU species 1 x 4 = 4
Herb Stratum (Plot size: 5 ft r)	5	= Total Co	ver	UPL species 1 x 5 = 5
1. Juncus balticus	75	~	FACW	Column Totals: <u>84</u> (A) <u>173</u> (B)
2. Cirsium arvense	1		FAC	
3. Potentilla anserina	1		OBL	Prevalence Index = B/A = 2.05 Hydrophytic Vegetation Indicators:
4. Descurainia incana	1		FACU	✓ 1 - Rapid Test for Hydrophytic Vegetation
5. Thlaspi arvense	1		UPL	✓ 2 - Dominance Test is >50%
6	<u> </u>			3 - Prevalence Index is ≤3.0 ¹
7				4 - Morphological Adaptations ¹ (Provide supporting
8				data in Remarks or on a separate sheet)
9				5 - Wetland Non-Vascular Plants ¹
10				Problematic Hydrophytic Vegetation¹ (Explain)
11	70			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size:)	79	= Total Cov	ver	
1				Hydrophytic
2.				Vegetation
		= Total Cov	ver	Present? Yes No
% Bare Ground in Herb Stratum 21 Remarks:				
Dominance indicator met for hydrop	nytic ve	egetation	on.	

SOIL Sampling Point: DP09w

Profile Desc	cription: (Describe	e to the dept	th needed to docun	nent the i	ndicator	or confirn	n the absence	e of indicators.)
Depth	Matrix			x Feature				,
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0 - 14	10YR 3/2	100					Sandy Loam	
-								
-								
	_		_					
	_							
-								
_								
¹Type: C=Ce	oncentration, D=De	pletion, RM=	Reduced Matrix, CS	=Covered	d or Coate	d Sand G	rains. ² Lo	cation: PL=Pore Lining, M=Matrix.
			LRRs, unless other					ors for Problematic Hydric Soils ³ :
Histosol	(A1)		Sandy Redox (S	S5)			2 cr	m Muck (A10)
Histic Ep	pipedon (A2)		Stripped Matrix	(S6)			Red	d Parent Material (TF2)
	istic (A3)		Loamy Mucky N			MLRA 1)		y Shallow Dark Surface (TF12)
	en Sulfide (A4)		Loamy Gleyed I		()		<u><a>C Oth</u>	er (Explain in Remarks)
	d Below Dark Surfa	ice (A11)	Depleted Matrix				31	and after all and the second attendance and
	ark Surface (A12) Mucky Mineral (S1)		Redox Dark Suit Depleted Dark S	. ,				ors of hydrophytic vegetation and and hydrology must be present,
	Gleyed Matrix (S4)		Redox Depress		.,			ss disturbed or problematic.
	Layer (if present):			(- /				р
Type:								
Depth (in	ches):						Hydric Soi	I Present? Yes No
Remarks:								
								ot bone dry, somewhere in determination.
HYDROLO	GY							
Wetland Hy	drology Indicators	s:						
Primary India	cators (minimum of	one required	l; check all that apply	/)			<u>Seco</u>	ndary Indicators (2 or more required)
Surface	Water (A1)		Water-Stai	ned Leav	es (B9) (e :	xcept	V	Vater-Stained Leaves (B9) (MLRA 1, 2,
High Wa	ater Table (A2)		MLRA	1, 2, 4A, a	and 4B)			4A, and 4B)
Saturation	on (A3)		Salt Crust	(B11)			[Orainage Patterns (B10)
	larks (B1)		Aquatic Inv		. ,			Ory-Season Water Table (C2)
	nt Deposits (B2)		Hydrogen					Saturation Visible on Aerial Imagery (C9)
	posits (B3)		Oxidized R		_	-		Geomorphic Position (D2)
_	at or Crust (B4)		Presence		•	,		Shallow Aquitard (D3)
	posits (B5)		Recent Iro			•		FAC-Neutral Test (D5)
	Soil Cracks (B6)	l less services (D	Stunted or			1) (LRR A		Raised Ant Mounds (D6) (LRR A)
	on Vis ble on Aeria y Vegetated Conca			iain in Re	emarks)		r	Frost-Heave Hummocks (D7)
Field Obser		`	•					
Surface Wat	er Present?	Yes 1	No Depth (ind	ches):				
Water Table			No Pepth (inc					
Saturation P	resent?		No Popth (inc				and Hydrolog	y Present? Yes No
(includes cap Describe Re		m gauge, mo	nitoring well, aerial p	hotos, pr	evious ins	pections),	if available:	
Remarks:								
Wetland	hydrology	met thro	ough geomor	phic p	ositior	n and F	FAC neut	ral test.

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

Project/Site: Silicon Mountain	C	ity/County:	Silver Bo	w County	Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. Of Transportation	n			State: Montana	Sampling Point: DP10u
Investigator(s): McEldowney	S	Section, To	wnship, Rar	nge: S24 T3N R9W	
Landform (hillslope, terrace, etc.): Stream Terrace				=	Slope (%): 0
					Datum: NAD 83
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
Are climatic / hydrologic conditions on the site typical for this					·
Are Vegetation, Soil, or Hydrologysi	-				present? Yes No
Are Vegetation, Soil, or Hydrologyna	-			eded, explain any answer	
SUMMARY OF FINDINGS – Attach site map s			•		•
Hydrophytic Vegetation Present? Yes No				<u> </u>	
Hydric Soil Present? Yes No			e Sampled		•
Wetland Hydrology Present? Yes No		withi	in a Wetlan	d? Yes	No
Remarks:					
Upland data point on a terrace at the southern en	d of the p	roject are	ea. It is ro	oughly 4 ft higher tha	n its wetland pair.
VEGETATION – Use scientific names of plant	s.				
Tree Stratum (Plot size: 30 ft r	Absolute			Dominance Test work	sheet:
·	% Cover			Number of Dominant Sp That Are OBL, FACW, of	
1 2					(//)
3.				Total Number of Domina Species Across All Stra	4
4.				·	
45.6		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft r)				Prevalence Index worl	ksheet:
1	· ·			Total % Cover of:	Multiply by:
2					x 1 = 0
3				FACW species 0	x 2 = 0
5.				FAC species 6	x 3 = 18
		= Total Co	ver	-	x 4 = 0
Herb Stratum (Plot size: 5 ft r	0=				x 5 = 195
1. Bromus inermis	35		UPL	Column Totals: 45	(A) <u>213</u> (B)
2. Leymus cinereus 3. Alyssum alyssoides	<u>5</u>		FAC UPL	Prevalence Index	
4. Centaurs stoebe	1		UPL	Hydrophytic Vegetation	
5. Cirsium arvense	1		FAC	1 - Rapid Test for F 2 - Dominance Tes	
6. Euphorbia esula	1		UPL	3 - Prevalence Inde	
7. Thlaspi arvense	1		UPL		Adaptations ¹ (Provide supporting
8					s or on a separate sheet)
9				5 - Wetland Non-Va	
10					ohytic Vegetation ¹ (Explain)
11				Indicators of hydric soil be present, unless distu	l and wetland hydrology must
Woody Vine Stratum (Plot size:)	<u>45</u> =	Total Cov	er	be present, amess dista	noca of problematio.
1				Usadra mbastia	
2.				Hydrophytic Vegetation	
			er	Present? Yes	s No
% Bare Ground in Herb Stratum 55					
Remarks:					
Upland data point dominated by smo	oth bro	me.			

SOIL Sampling Point: DP10u

Profile Desc	ription: (Describ	e to the dep	th neede				confirm	the absence	of indicato	rs.)	
Depth (inches)	Matrix Color (moist)	%	Color	Redox (moist)	Features %	Type ¹	Loc ²	Texture		Remarks	
0 - 16	10YR 4/2	100		moist		i ypc _	200	Loam	Dry.	ROMAINS	
	10111 4/2	_ 100						Louin	Біў.		
	-										
-											
	-		_				-				
¹Type: C=Co	oncentration, D=De	enletion RM	=Reduced	I Matrix CS	=Covered	or Coated	Sand Gra	ains ² l or	ration: PI =I	Pore Lining, M	1=Matrix
	ndicators: (Appl						Odrid Ore			lematic Hydr	
Histosol				dy Redox (S		,			n Muck (A10	-	
Histic Epipedon (A2) Stripped Matrix (S6)									Parent Mat	*	
Black Hi	stic (A3)			ny Mucky M			/ILRA 1)			ark Surface (T	F12)
	n Sulfide (A4)			ny Gleyed N)		Othe	er (Explain i	n Remarks)	
	d Below Dark Surfa ark Surface (A12)	ace (A11)		leted Matrix ox Dark Sur	. ,			3Indicate	ro of budror	hytic vegetati	on and
	lucky Mineral (S1)			eted Dark S	. ,	7)			, ,	y must be pre	
	leyed Matrix (S4)			ox Depressi	•	.,				or problemation	
Restrictive I	ayer (if present):				. ,						
Type:											
Depth (inc	ches):							Hydric Soil	Present?	Yes	No 🔽
Remarks:											
No hydri	c soil indica	itors ob	serve	d. 							
HYDROLO	GY										
Wetland Hyd	drology Indicator	s:									
Primary Indic	cators (minimum of	fone require	d; check a	all that apply	')			Secor	ndary Indica	tors (2 or mor	<u>e required)</u>
Surface	Water (A1)			Water-Stair	ned Leave	es (B9) (exc	cept	W	/ater-Staine	d Leaves (B9)	(MLRA 1, 2,
_	ter Table (A2)				, 2, 4A, a	nd 4B)			4A, and 4	•	
Saturation	, ,			Salt Crust (rainage Pat		
	arks (B1)			Aquatic Inv					-	Water Table (0	
	nt Deposits (B2)			Hydrogen S				· · · · · · · · · · · · · · · · · · ·			I Imagery (C9)
	oosits (B3)					_	ving Root	ts (C3) G			
	et or Crust (B4) Hosits (B5)			Presence of Recent Iron			Soils (C6)		hallow Aqui AC-Neutral		
	Soil Cracks (B6)			Stunted or			, ,			lounds (D6) (L	RR A)
	on Vis ble on Aeria	ıl Imagery (B		Other (Exp			(LITTA)			Hummocks (E	
· · · · · · · · · · · · · · · · · · ·	Vegetated Conca		. —	0 ti 101 (2/1p		,					.,
Field Observ			,								
Surface Water	er Present?	Yes	No 🗸	Depth (inc	hes):						
Water Table	Present?	Yes									
Saturation Pr	resent?	Yes	_					nd Hydrolog	y Present?	Yes	No 🖍
(includes cap											
Describe Red	corded Data (strea	ım gauge, m	onitoring v	vell, aerial p	notos, pre	evious inspe	ections), ii	f available:			
Damania											
Remarks:											
No evide	ence of wet	land hy	drolog	y obser	ved.						

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

Project/Site: Silicon Mountain	(City/County	Silver Bo	ow County	Sampling Date: 2024-07-24
Applicant/Owner: Montana Dept. Of Transportation	1			State: Montana	Sampling Point: DP10w
				nge: S24 T3N R9W	
					Slope (%): 2
Subregion (LRR): E 43B					
Soil Map Unit Name: 12A - Riverrun, occasionally flooded-Mannixle					
Are climatic / hydrologic conditions on the site typical for this					<u>- </u>
Are Vegetation, Soil, or Hydrology signs of the state typical for this	-				
Are Vegetation, Soil, or Hydrology na	aturally prol	blematic?	(If ne	eded, explain any answer	rs in Remarks.)
SUMMARY OF FINDINGS - Attach site map s	howing	samplin	g point lo	ocations, transects	, important features, etc.
Wetland Hydrology Present? Yes No Remarks:		with	e Sampled in a Wetlan		No
PSS, riverine data point at south end		ect are	a. ———		
VEGETATION – Use scientific names of plant					
1			Status	Number of Dominant Sp That Are OBL, FACW, o	pecies
2				Total Number of Domina Species Across All Stra	•
4		= Total Co	ver	Percent of Dominant Sp That Are OBL, FACW, of	
Sapling/Shrub Stratum (Plot size: 15 ft 1. Salix lutea	70	~	OBL	Prevalence Index worl	rsheet:
2. Salix lasiandra	10		FACW	Total % Cover of:	
3					x 1 = 115
4					x 2 = 24
5.				FAC species 0	x 3 = 0
	80	= Total Co	ver		x 4 = 4
Herb Stratum (Plot size: 5 ft)	4-		0.01		x = 5 (A) 148 (B)
1. Carex pellita	45		OBL	Column Totals. 123	(A) <u>148</u> (B)
2. Mentha arvensis 3. Centaurs stoebe	2		FACW	Prevalence Index	
Taraxacum officinale	1		UPL	Hydrophytic Vegetation	
5 Unidentified forb	1		FACU	1 - Rapid Test for H	
° .				<u>✓</u> 2 - Dominance Tes	
6				✓ 3 - Prevalence Inde	
7					daptations ¹ (Provide supporting s or on a separate sheet)
8				5 - Wetland Non-Va	· · · · · · · · · · · · · · · · · · ·
9 10					phytic Vegetation ¹ (Explain)
11				l 	and wetland hydrology must
	F0	= Total Cov	/er	be present, unless distu	
Woody Vine Stratum (Plot size:)		10101 001	Ci .		
1				Hydrophytic	
2				Vegetation	s No
0/ Poro Cround in Heath Charles 50		= Total Cov	er er	Present? Yes	, NU
% Bare Ground in Herb Stratum 50 Remarks:					
	• - •				
PSS wetland. Yellow willow overstor	y with a	a wooll	y sedge	e understory.	

SOIL

Sampling Point: DP10w

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

Depth	Matrix		Redox	x Feature	:S					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0 - 16	10YR 4/2	98	10YR 4/6	2	С	М	Sand			
			-	-	-					
-					-					
			-							
-										
				-						
		-	_							
			I=Reduced Matrix, CS I LRRs, unless other			ed Sand Gr		cation: PL=Pore Lining, M=Matrix. prs for Problematic Hydric Soils ³ :		
Histosol		abic to ai	✓ Sandy Redox (S		.cu.,			m Muck (A10)		
	oipedon (A2)		Stripped Matrix					Parent Material (TF2)		
Black His			Loamy Mucky M		1) (excep	t MLRA 1)		y Shallow Dark Surface (TF12)		
	n Sulfide (A4)		Loamy Gleyed I			·		er (Explain in Remarks)		
	Below Dark Surfac	e (A11)	Depleted Matrix		,			- (
	ark Surface (A12)	` ,	Redox Dark Sur)		³ Indicate	ors of hydrophytic vegetation and		
Sandy M	lucky Mineral (S1)		Depleted Dark S	Surface (F	- 7)		wetla	and hydrology must be present,		
Sandy G	leyed Matrix (S4)		Redox Depress	ions (F8)			unles	ss disturbed or problematic.		
Restrictive L	ayer (if present):									
Type:										
Depth (inc	ches):						Hydric Soil	Present? Yes No		
Remarks:							I			
							•			
Redox in	the sandy s	oils fu	fills the Sand	у кеа	ox ind	ıcator ı	requirem	ent.		
HYDROLO (GY									
Wetland Hyd	drology Indicators:									
_			ed; check all that apply	/)			Seco	ndary Indicators (2 or more required)		
✓ Surface	•		Water-Stai		res (R9) (excent		Vater-Stained Leaves (B9) (MLRA 1, 2,		
	ter Table (A2)			1, 2, 4A,		жоорг	'	4A, and 4B)		
Saturatio			Salt Crust		and 4b)		г			
	arks (B1)		Aguatic Inv	` ,	oc (P13)		Drainage Patterns (B10) Dry-Season Water Table (C2)			
	at Deposits (B2)		Hydrogen		,			Saturation Visible on Aerial Imagery (C9)		
			Oxidized R			Living Dog		Secomorphic Position (D2)		
	oosits (B3)			•	_	-				
_	t or Crust (B4)		Presence o		•	•		Shallow Aquitard (D3)		
-	osits (B5)		Recent Iron			•		AC-Neutral Test (D5)		
	Soil Cracks (B6)		Stunted or)1) (LRR A		Raised Ant Mounds (D6) (LRR A)		
	on Vis ble on Aerial			ilain in Re	emarks)		⊦	rost-Heave Hummocks (D7)		
	Vegetated Concave	e Surface	(B8)			1				
Field Observ		./		0						
Surface Water			No Depth (inc							
Water Table			No Depth (inc					_		
Saturation Pr	resent? Y	'es	No Depth (inc	ches):		Wetl	and Hydrolog	y Present? Yes No		
(includes cap		aguae m	onitoring well, aerial p	hotos n	rovious in	enactions)	if available:			
Describe Net	Corded Data (Stream	i gauge, ii	ioriitoring well, aeriai p	niotos, pi	Evious iii	speciions),	ii avaliable.			
Remarks:										
Water flo	owing south	to nor	th in stream c	hanne	el.					
	3									

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 2. MDT Project #: STPX 47(024)56 1. Project Name: Control #: 50340000

3. Evaluation Date: 09/23/2024 4. Evaluator(s): R. McEldowney 5. Wetlands/Site #(s): AA1 - Created Cells 2,3,4

Latitude/Longitude: 45.998062, -112.662144 : Centroid of Cell 2 6. Wetland Location(s): i. Legal: T3N,R9W,24 45.998721. -112.663225 : Centroid of Cell 3 ii. Approx. Stationing or Mileposts:

iii. Watershed:

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project

8. Wetland size: 3.740 acres (measured) Mitigation wetlands; pre-construction 3. X Mitigation wetlands; post-construction 9. Assessment area (AA): 3.740 acres (measured)

Other:

10. Classification of Wetland and Aquatic Habitats in AA

	HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
	D	AB	E	PP	3.00
	D	EM	E	SI	92.00
	D	SS	E	SI	4.00
ĺ	D	UB	E	PP	1.00

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF); Cowardin Classes: Rock Bottom (RB). Unconsolidated bottom (UB). Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

46.001174, -112.661948: Centroid of Cell 4

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

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): The site is stable since construction in 2015. Wetland habitat is well developed and continues to expand. The area surrounding the site is primarily rural with railroad tracks adjacent to cells 2 and 3. Cell 4 is adjacent to the bike path, a home, and a public access parking area.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Euphorbia esula, Centaurea stoebe, Cirsium arvense, and Linaria vulgaris

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of three constructed wetland cells that are supported by groundwater. Cell 4 contained 0.04-acre of perennial open water/aguatic bed habitat in 2024. Sand Creek is excluded from this AA due to the berms surrounding the wetland cells prohibiting the creek from accessing the wetlands. The surrounding area is comprised of low rolling hills dominated by a sagebrush ecosystem.

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

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management existence of additional		Modified Rating
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	М	NA	NA	NA
1 class, but not a monoculture	М	< NO	YES>	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	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 (circle one based on definitions contained in instructions):

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

Monarch Butterfly(S)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2024; MTNHP 2024). However, the wetland habitat may be used occasionally by the Monarch Butterfly.

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

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

Primary or critical habitat (list species) Secondary habitat (list species)

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of the mitigation site in 2024 (MTNHP 2024).

14C. General Wildlife Habitat Rating:

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

Substantial (based on any of the following [check]):	Minimal (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	few or no wildlife observations during peak use periods little to no wildlife sign sparse adjacent upland food sources interviews with local biologists with knowledge of the AA
Moderate (based on any of the following [check]): observations of scattered wildlife groups or individuals or relatively few species during	u poak poriode
	•
X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails,	etc.
X adequate adjacent upland food sources	
interviews with local biologists with knowledge of the AA	

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

Structural diversity (see #13)				Hi	gh							Mod	erate					Lo)W	
Class cover distribution (all vegetated classes)		Ev	en			Une	even			Ev	en			Une	even			Ev	en	
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	Е	E	Е	Н	Е	E	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 at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

				07						
Evidence of wildlife use (i)	Wildlife habitat features rating (ii)									
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate						
Substantial	1E	.9H	.8H	.7M						
Moderate	.9Н	.7M	.5M	.3L						
Minimal	.6M	.4M	.2L	.1L						

Comments: The site demonstrates moderate wildlife use and exceptional wildlife habitat features ratings.

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

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

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

Duration of surface water in AA		Peri	manent	/ Perei	nnial			Sea	sonal /	Intermi	ttent			Tem	porary	/ Epher	neral	
Aquatic hiding / resting / escape cover	Opt	imal	Adeo	quate	Po	oor	Opt	imal	Adeo	quate	Po	oor	Opt	imal	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	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

- ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)
- a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? If yes, reduce score in i above by 0.1.
- b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? If yes, add 0.1 to the adjusted score in i or iia.
- iii. Final Score and Rating: NA Comments: No fish habitat within AA. Cell 4 has open water but no inlet or outlet.

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

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

	,	entrenche stream typ			ely entrend stream type		Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

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

1	=		***************************************	<i>#</i>
Flood-prone width	Bankfull width	Entrenchment ratio (ER)	2 x Bankfull Derth	Flood-prone Width Bankfull Width
			Bankfull Depth	, d

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2	Entrenched ER = 1.0 – 1.4						
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type				
	****			4						

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?

Comments: The AA is less than 10 acres and berms act as barriers around the wetland cells preventing flooding via in-channel or overbank flow.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>.	5 acre fe	et	1.11	to 5 acre	feet	<=	1 acre fo	oot
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond >= 5 out of 10 years	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: The wetland cells intercept groundwater seasonally and demonstrate between 1.1 and 5 acres of periodic flooding. Additionally, wetland cell 4 contains 0.04-acre of perennial ponded water.

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients contication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA of tential to deliver of r compounds so of impaired. Major	waterbodies in reauses" related receives or sure high levels of uch that other for sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.9H .7M .6M .4M				.3L	.2L	.1L

Comments: Cells have the potential to receive compounds from the adjacent railroad, roads, and residential area through groundwater and overland flow.

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

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

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

Comments: Wave action is possible during seasonal flooding events and in the perennial open water habitat in cell 4. Shoreline vegetation includes species with root stability ratings of 6 or greater. Dominant species includes Juncus balticus, Typha latifolia, Eleocharis palustris, and Salix spp.

14I. Production Export/Food Chain Support:

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

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

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

Α		Vegetat	ed com	onent >	5 acres		Vegetated component 1-5 acres						Vegeta	ted com	ponent <	nent < 1 acre					
В	Hi	gh	Mod	erate	Lo)W	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lo	W			
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No			
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L			
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L			
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L			

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

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii

iv. Final Score and Rating: 0.90H Comments: Wetland cells contain a subsurface outlet and have vegetated buffers.

i. Discharge Indicators The AA is a slope wetland Springs or seeps are known of the Vegetation growing during do the Wetland occurs at the toe of a AA permanently flooded during the Wetland contains an outlet, but Shallow water table and the southers.	ormant seaso a natural slo ng drought p ut no inlet	pe eriods	face	P v s	Vetland conta	bstrate prese ains inlet but	no outlet	nderlying imp	
ii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE GROUNDWATER SYSTEM									
Criteria		P/P		S/I	Т		None	†	
Groundwater Discharge or Recharge	ge	1H		.7M	.4M		.1L]	
Insufficient Data/Information				N/A	Α	-		7	
Replacement potential	or mature wetland or	ains fen, bog, warm springs ture (>80 yr-old) forested or plant association listed s "S1" by the MTNHP		AA does not contain previously cited rare types and structural diversity (#13) is high or contains plant association listed as "S2" by the MTNHP			AA does not contain previously cite rare types or associations and structural diversity (#13) is low-moderate		tions and
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L
High disturbance at AA (#12i) Comments: The relative abundance of	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L
4L. Recreation/Education Potential. Is the AA a known or potential rec. overall summary and rating pa Check categories that apply to the	ded. site: (cage)	ircle) X (i	f 'Yes' contin	ue with the e	valuation; if '		onsumptive	1	o the
Known or Potential Recreation or Edu					o accine al\		Known .2H	Potential	4
Public ownership or public easeme Private ownership with general pul					equirea)		.15H	.15H .1M	\dashv
Private ownership with general pur					n for public	access	.13H .1M	.05L	┥
Comments: This AA is at a mitigation The site is used for educ	site that is	known to be	used for edu	cational purp	oses, has pu	blic ownersh			blic access.
General Site Notes AA-1 includes 3.99 acres of wetland I									

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA1 - Created Cells 2,3,4

Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
L	0.10	1	0.37	
M	0.50	1	1.87	
Н	0.90	1	3.37	*
NA				
NA				
M	0.60	1	2.24	
Н	1.00	1	3.74	*
M	0.60	1	2.24	
Н	0.90	1	3.37	*
M	0.70	1	2.62	*
M	0.50	1	1.87	
Н	0.20	1	0.75	
	6.00	9.00	22.31	
	L M H NA NA M H M M M M M	Functional Points L 0.10 M 0.50 H 0.90 M 0.60 H 0.90 M 0.70 M 0.50 H 0.20 M 0.20 H 0.20 M 0.20	Rating Functional Points Functional Points L 0.10 1 M 0.50 1 H 0.90 1 NA 1 NA 1 M 0.60 1 H 1.00 1 M 0.60 1 H 0.90 1 M 0.70 1 M 0.50 1 H 0.20 1	Rating Functional Points Functional Points Points x Wetland Acreage) L 0.10 1 0.37 M 0.50 1 1.87 H 0.90 1 3.37 NA NA NA NA M 0.60 1 2.24 H 1.00 1 3.74 M 0.60 1 2.24 H 0.90 1 3.37 M 0.70 1 2.62 M 0.50 1 1.87 H 0.20 1 0.75 6.00 9.00 22.31

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; andVegetated wetland component 1 acre (do not include upland vegetated buffer); andPercent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-1 is comprised of excavated wetland cells which rate as Category II.

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 2. MDT Project #: 1. Project Name: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 09/23/2024 4. Evaluator(s): R. McEldowney 5. Wetlands/Site #(s): AA2 - Created Cells 1 and 5

Latitude/Longitude: 45.999417, -112.661816 : Centroid of Cell 1 6. Wetland Location(s): i. Legal: T3N,R9W,24 46.00231. -112.660885 : Centroid of Cell 5 ii. Approx. Stationing or Mileposts:

8. Wetland size:

9. Assessment area (AA):

iii. Watershed:

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project

Mitigation wetlands; pre-construction

3. X Mitigation wetlands; post-construction

Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	E	PP	5.00
D	EM	E	SI	15.00
D	SS	E	SI	5.00
D	UB	E	PP	75.00

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF); Cowardin Classes: Rock Bottom (RB). Unconsolidated bottom (UB). Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

5.340 acres (measured)

5.340 acres (measured)

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

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): In year 10 post-construction, wetland cells 1 and 5 have established desirable perennial grass, forb, and shrub cover with minimal weeds present. The level of disturbance has declined and the site has stabilized with increasing cover provided by perennial species.

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Linaria vulgaris, Euphorbia esula, Cirsium arvense, and Centaurea stoebe

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA is composed of wetland cells 1 and 5 which are designed to intercept groundwater and include 2.45 acres of open water habitat. The cells 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 scrubshrub wetland that has developed around the excavated cells.

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

Existing # of "Cowardin" Vegetated Classes in AA	Rating exis		Is current management preventing (passive) existence of additional vegetated classes?				
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA			
2 (or 1 if forested) classes	М	NA	NA	NA			
1 class, but not a monoculture	М	< NO	YES>	L			
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	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 (circle one based on definitions contained in instructions):

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

Monarch Butterfly(S)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2024; MTNHP 2024). However, the Monarch Butterfly could occasionally use the wetland habitat.

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

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

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional species have been confirmed in the vicinity of the

14C. General Wildlife Habitat Rating:

mitigation site in 2024 (MTNHP 2024).

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

Substantial (based on any of the following [check]):	Minimal (based on any of the following [check]):
 X observations of abundant wildlife #s or high species diversity (during any period) abundant wildlife sign such as scat, tracks, nest structures, game trails, etc. X presence of extremely limiting habitat features not available in the surrounding area interviews with local biologists with knowledge of the AA 	few or no wildlife observations during peak use periods little to no wildlife sign sparse adjacent upland food sources interviews with local biologists with knowledge of the AA
Moderate (based on any of the following [check]): observations of scattered wildlife groups or individuals or relatively few species during common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, adequate adjacent upland food sources interviews with local biologists with knowledge of the AA	••
	

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

Structural diversity (see #13)				Hi	gh							Mod	erate				Low			
Class cover distribution (all vegetated classes)		Even				Une	even			Ev	en			Une	even		Even			
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	E	Е	Е	Н	E	E	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 at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

				07
Fuidance of wildlife use (i)		Wildlife habitat f	eatures rating (ii)	
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate
Substantial	1E	.9H	.8H	.7M
Moderate	.9H	.7M	.5M	.3L
Minimal	.6M	.4M	.2L	.1L

Comments: The site demonstrates substantial wildlife use, especially during migration periods, has substantial open water features that are a limiting habitat feature in this part of the valley, and has other exceptional wildlife habitat features.

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

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

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

Duration of surface water in AA		Perr	nanent	/ Perer	nnial			Sea	sonal /	Intermi	ttent		Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Opt	Optimal		quate	Po	or	Opt	imal	Adeo	quate	Po	or	Opt	imal	Adeo	quate	Po	oor
Thermal cover optimal / suboptimal	0	S	0	S	0	S	0	S	0	S	0	Ø	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	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	5M .5M		.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

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

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

If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: NA

Comments: Fish have not been observed in and are not suspected in the AA; Cell 1 drains to Sand Creek, but is upslope and outside of Sand Creek's active floodplain.

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	, ,	entrenche stream typ			ely entrend stream type		Entrenched-A, F, G stream types			
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%	
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet		.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L	

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

/ =

Flood-prone Bankfull Entrenchment ratio width width (ER)

1 x Bankfull Depth Bankfull Depth

Bankfull Depth

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 - 2.2		Entrenched ER = 1.0 – 1.4	
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
					<u> </u>	

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?

Comments: Cells 1 and 5 are upslope/outside of Sand Creek's active floodplain area and not subject to overbank flooding. Cell 1 allows groundwater to outlet to Sand Creek and perpetuate flows in the stream during low water years.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>:	5 acre fe	et	1.11	to 5 acre	feet	<=1 acre foot			
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E	
Wetlands in AA flood or pond >= 5 out of 10 years	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L	
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L	

Comments: Cell 1 and cell 5 support 2.45 acres of open water habitat with an estimated average depth of 2.5 feet. (2.45-acres x 2.5 ft = 6.13 acre feet).

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are n sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients contication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in recauses" related receives or surrer high levels of uch that other fuor sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%
Evidence of flooding / ponding in AA	Yes No Yes No				Yes	No	Yes	No
AA contains no or restricted outlet	1H	.8H	.7M	. 7M .5M		.4M	.3L	.2L
AA contains unrestricted outlet	.9H .7M .6M .4M				.4M	.3L	.2L	.1L

Comments: Does not achieve 70% wetland vegetation threshold due to the majority of the AA comprising of aquatic bed/open water habitat.

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

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

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

Comments: Vegetation with a rating of 6 or greater include Typha latifolia, Juncus balticus, Carex nebrascensis, and Salix spp., which surrounds aquatic beds as emergent/scrub-shrub wetland.

14I. Production Export/Food Chain Support:

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

		_ • ` •		• • • • • • • • • • • • • • • • • • • •
	General Fish Habitat	General V	Vildlife Habitat Rating	j (14C.iii.)
	Rating (14D.iii.)	E/H	M	L
ĺ	E/H	Н	Н	M
ĺ	M	Н	M	M
	L	M	M	L
	N/A	Н	M	L

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

Α		Vegetat	ed comp	onent >	5 acres		,	Vegetat	ed comp	onent 1	-5 acres	3	Vegetated component < 1 acre					
В	B High Moderate Low		High Mode		erate	Lo)W	High		Moderate		Low						
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii above.

iv. Final Score and Rating: 1.00H
Comments: The vegetated wetland component is 3.28 acres in 2024. The AA is surrounded by a 50 foot-wide vegetated upland buffer.

14J. Groundwater Discharge/Recha	irge: (check	the appropria	ite indicators	in i & ii belov	w)					
i. Discharge Indicators					i. Recharge					
The AA is a slope wetland							ent without u	nderlying imp	eding layer	
Springs or seeps are known					Netland conta					
Vegetation growing during d		-				nown 'losing	' stream; disc	harge volume	e decreases	
Wetland occurs at the toe of		•		(Other:					
X AA permanently flooded duri		periods								
Wetland contains an outlet, I			,							
X Shallow water table and the	site is satura	ated to the sur	face							
Other:										
iii. Rating (use the information from i	and ii above	and the table	below to arr	ive at [circle]	the function	al points and	l rating)	_		
					tlands <i>FROI</i> R <i>THAT IS RI</i>					
		<u> </u>			TER SYSTEM		<u>G INE</u>			
Criteria	H	P/P		S/I	Т		None	+		
Groundwater Discharge or Recha	rge	1H		.7M	.4M		.1L	†		
Insufficient Data/Information	3-			N/	A			7		
Comments: Wetland cells 1 and 5 a	re designed	to intercept g	roundwater.					_		
14K. Uniqueness:										
i. Rating (working from top to bottom,	use the mat	trix below to a	rrive at [circle	e] the functio	nal points an	d rating)				
			_	1	ot contain pre		1			
		ns fen, bog, w re (>80 yr-old			and structur		AA does no	ot contain pre es or associa		
Replacement potential		r plant associ			high or conta			al diversity (#		
		S1" by the MT		associati	on listed as " MTNHP	S2" by the	moderate			
Estimated relative abundance (#11)	rare	common	abundant	rare	common	abundant	rare	common	abundant	
Low disturbance at AA (#12i)	1H	.9H	.8H	.8H	.6M	.5M	.5M	.4M	.3L	
Moderate disturbance at AA (#12i)	.9H	.8H	.7M	.7M	.5M	.4M	.4M	.3L	.2L	
High disturbance at AA (#12i)	.8H	.7M	.6M	.6M	.4M	.3L	.3L	.2L	.1L	
Comments: The relative abundance	of these we	tland types in	the watersh	ed basin is c	ommon and s	structural div	ersity is high.			
44.5	. / 66	,								
14L. Recreation/Education Potential								nd proceed to	o tha	
i. Is the AA a known or potential recoverall summary and rating p		(incle) <u> </u>	ii res contin	iue with the t	evaluation, ii	No then ma	NA a	nd proceed to	o trie	
	• .	Educational/	ociontific stu	tu: Con	aumntiva raa	· Y Non	oonoumntivo	roo:		
ii. Check categories that apply to the	ie AA	_	Scientific Stud		sumptive rec	., <u>X</u> INOII-	consumptive	iec.,		
III. Badlaras		Other :								
iii. Rating:							17	Detection	_	
Known or Potential Recreation or Ed			22222 (22		wa musiwa d\		Known .2H	Potential	4	
Public ownership or public easem Private ownership with general pu					requireu)		.15H	.15H .1M	-	
Private ownership with general pu		<u> </u>		,	on for nublic	200000	.15H	.11VI .05L	┥	
Comments: This AA is at a mitigation									_ ⊥ Гhe site is	
used for educational stu										
waterfowl and other bird	d species val	uable for non	-consumptive	e recreationa	ıl activities (i.e	e. bird watch	ning).		•	
General Site Notes										
AA-2 includes 3.28 acres of wetland	habitat and	2.45 acres of	aquatic bed	open water l	habitat in 202	4.				
				.,						

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 Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.10	1	0.53	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	2.67	
C. General Wildlife Habitat	E	1.00	1	5.34	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	1.00	1	5.34	
G. Sediment/Nutrient/Toxicant Removal	М	0.70	1	3.74	
H. Sediment/Shoreline Stabilization	Н	1.00	1	5.34	*
I. Production Export/Food Chain Support	Н	1.00	1	5.34	*
J. Groundwater Discharge/Recharge	Н	1.00	1	5.34	*
K. Uniqueness	М	0.60	1	3.20	
L. Recreation/Education Potential (bonus points)	Н	0.20	1	1.07	
Totals: Percent of Possible Score		7.10	9.00 79%	40.69	

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 X Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III) "Low" rating for Uniqueness; andVegetated wetland component 1 acre (do not include upland vegetated buffer); andPercent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-2 is comprised of excavated wetland cells which rate as Category II.

MDT Montana Wetland Assessment Form (revised March 2008)

Silicon Mountain Wetland Mitigation Site 2. MDT Project #: 1. Project Name: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 09/23/2024 4. Evaluator(s): R. McEldowney 5. Wetlands/Site #(s): AA3 - Preservation

Latitude/Longitude: 45.999026, -112.661162 : Centroid of 6. Wetland Location(s): i. Legal: T3N,R9W,24 45.998304. -112.663249: Centroid of

ii. Approx. Stationing or Mileposts:

46.002752, -112.659714: Centroid of iii. Watershed: 46.002921, -112.657097: Centroid of Watershed Name, County: Upper Clark Fork, Silver Bow

8. Wetland size:

9. Assessment area (AA):

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

Wetlands potentially affected by MDT project

Mitigation wetlands; pre-construction

3. X Mitigation wetlands; post-construction

Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	AB	NA	PP	0.60
D	EM	NA	SI	44.00
D	EM	NA	PP	52.00
D	SS	NA	SI	3.00

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF); Cowardin Classes: Rock Bottom (RB). Unconsolidated bottom (UB). Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

10.400 acres (measured)

10.400 acres (measured)

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

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Construction of the wetland mitigation site in 2014 included substantial excavation to create new wetlands as well as channel realignment/restoration. In 2016, the area surrounding the preserved wetlands was disturbed as a result of the new trail and bridge. Disturbed areas surrounding the preserved wetland areas are stable and well vegetated with desirable species in 2024. ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Centaurea stoebe, Linaria vulgaris, and Euphorbia

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA includes pre-existing depressional wetlands adjacent to Sand Creek and south of Silver Bow Creek, and 0.068 acre of open water habitat. Land use surrounding the AA includes commercial developments, agriculture (grazing/pasture), transportation (railroad and highway) and private residences.

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

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management existence of additiona	Modified Rating	
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	М	NA	NA	NA
1 class, but not a monoculture		< NO	YES>	L
1 class, monoculture (1 species comprises >= 90% of total cover)	L	NA	NA	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 (circle one based on definitions contained in instructions):

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

Monarch Butterfly(S)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation site (USFWS 2024; MTNHP 2024). However, the wetland habitat may occasionally be used by the Monarch Butterfly.

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

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

Primary or critical habitat (list species)

Secondary habitat (list species)

Incidental habitat (list species)

Hoary bat (S3), Preble's shrew (S3),

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of the mitigation site in 2024 (MTNHP 2024).

14C. General Wildlife Habitat Rating:

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

Substantial (based on any of the following [check]):	Minimal (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	few or no wildlife observations during peak use periods little to no wildlife sign sparse adjacent upland food sources interviews with local biologists with knowledge of the AA
Moderate (based on any of the following [check]):	n nada nadada
X observations of scattered wildlife groups or individuals or relatively few species during	5

common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, etc

X adequate adjacent upland food sources

interviews with local biologists with knowledge of the AA

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

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

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

				07								
Evidence of wildlife use (i)	Wildlife habitat features rating (ii)											
Eviderice of wildlife use (i)	Exceptional	High	Moderate	Moderate								
Substantial	1E	.9H	.8H	.7M								
Moderate	.9Н	.7M	.5M	.3L								
Minimal	.6M	.4M	.2L	.1L								

Comments: The site demonstrates moderate use by wildlife.

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

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

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

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

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

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

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

If yes, reduce score in i above by 0.1.

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

iii. Final Score and Rating: NA Comments: No fish habitat within AA.

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	0 ,	entrenche stream typ			ely entrend stream type		Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

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

1	=		***	<i></i>
Flood-prone width	Bankfull width	Entrenchment ratio (ER)	2 x Bankfull Depth	Flood-prone Width Bankfull Width
			Bankfull Depth	4

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2		Entrenched ER = 1.0 - 1.4	
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
	****			4		

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)?
 Comments: The AA is not subject to flooding via in-channel or overbank flow.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

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

Comments: Some of the preservation wetlands in this AA have a permanent/perennial water regime and demonstrate an estimated average depth of 0.75 feet of water during high water events.

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

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

Sediment, nutrient, and toxicant input levels within AA	potential to or compour are no sedimentat	deliver levels nds at levels ot substantia ion, sources	unding land of sof sediment such that oth lly impaired. of nutrients othication pres	s, nutrients, er functions Minor or toxicants,	developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive r compounds so impaired. Majo	waterbodies in reauses" related receives or surrer high levels of uch that other fuor sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 70%	
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: Evidence of flooding and ponding is present in the preservation wetlands.

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

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

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

Comments: Preservation wetlands in the far eastern portion of the site include a shoreline with standing water. Vegetation includes a mix of Typha latifolia, Carex utriculata and Juncus balticus.

14I. Production Export/Food Chain Support:

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

		_ • ` •		• • • • • • • • • • • • • • • • • • • •					
	General Fish Habitat	General Wildlife Habitat Rating (14C.iii.)							
	Rating (14D.iii.)	E/H	M	L					
	E/H	Н	Н	M					
ĺ	M	Н	M	M					
	L	M	M	L					
	N/A	Н	M	L					

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

Α		Vegetated component >5 acres						Vegetated component 1-5 acres				Vegetated component < 1 acre						
В	B High		Mode	erate	Lo	w	High		Mode	erate	Low		High		Moderate		Low	
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii above.

iv. Final Score and Rating: 0.80H Comments: Well-vegetated upland buffer around greater than 75 percent of the AA's perimeter.

i. Discharge Indicators				ii	. Recharge	Indicators			
The AA is a slope wetland					•		ent without u	nderlying imp	eding layer
X Springs or seeps are known of	or observed			v	Vetland conta	ains inlet but	no outlet	, , ,	o ,
X Vegetation growing during do		on/drought		s	stream is a kr	nown 'losing'	stream; disc	harge volume	e decreases
Wetland occurs at the toe of	a natural slo	ре			Other:			-	
X AA permanently flooded during	ng drought p	eriods							
Wetland contains an outlet, b	out no inlet								
X Shallow water table and the s	site is saturat	ted to the sur	face						
Other:									
ii. Rating (use the information from i a	and ii above a							7	
			of saturation ARGE OR W						
		<u> </u>			ER SYSTEM		<u> </u>		
Outhorite		P/P		S/I	Т	_	None	4	
Criteria		1H		.7M	.4M		.1L	┪	
Groundwater Discharge or Rechar	rge	•••		N//			.16	┪	
Insufficient Data/Information Comments: Most of the preserved w	etlands inter	cent shallow	subsurface c		-	tland in the N	JF corner into	_l ercents shalld	DW/
groundwater and is fed b							TE COITION III	or copie orian	
4K Unimumana	•	,	. 0						
4K. Uniqueness: . Rating (working from top to bottom,	use the metr								
			rrive at lairele	ol tha function	nal nainta an	d ratina)			
Tating (Working from top to bottom,	use the mati	ix below to a	rrive at [circle	r i			Ī		
rating (working from top to bottom,		s fen, bog, w		AA does no	t contain pre	viously cited	AA does no	ot contain pre	viously cited
	AA contains or mature	s fen, bog, w e (>80 yr-old	arm springs) forested	AA does no rare types	t contain pre and structur	viously cited al diversity	rare type	es or associa	tions and
Replacement potential	AA contains or mature wetland or	s fen, bog, w e (>80 yr-old plant associ	arm springs) forested ation listed	AA does no rare types (#13) is	t contain pre	viously cited al diversity ains plant	rare type	es or associat Il diversity (#1	tions and
	AA contains or mature wetland or	s fen, bog, w e (>80 yr-old	arm springs) forested ation listed	AA does no rare types (#13) is	t contain pre and structur high or conta	viously cited al diversity ains plant	rare type	es or associa	tions and
	AA contains or mature wetland or	s fen, bog, w e (>80 yr-old plant associ	arm springs) forested ation listed	AA does no rare types (#13) is	t contain pre and structur high or conta on listed as "	viously cited al diversity ains plant	rare type	es or associat Il diversity (#1	tions and
Replacement potential	AA contains or mature wetland or as "S	s fen, bog, w e (>80 yr-old plant associ 61" by the MT	arm springs) forested ation listed NHP	AA does no rare types (#13) is association	t contain pre and structur high or conta on listed as "s MTNHP	viously cited al diversity ains plant S2" by the	rare type structura	es or associated as or as o	tions and 13) is low-
Replacement potential Estimated relative abundance (#11)	AA contains or mature wetland or as "S	s fen, bog, w e (>80 yr-old r plant associ 61" by the MT common	arm springs) forested iation listed NHP abundant	AA does no rare types (#13) is association	t contain pre and structur high or conta on listed as " MTNHP common	viously cited al diversity ains plant S2" by the	rare type structura rare	es or associa al diversity (#1 moderate	tions and (3) is low- abundant
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i)	AA contains or mature wetland or as "S rare	s fen, bog, w e (>80 yr-old plant associ s1" by the MT common .9H	arm springs) forested ation listed TNHP abundant	AA does no rare types (#13) is association rare	t contain pre and structur high or conta on listed as " MTNHP common .6M	viously cited al diversity ains plant S2" by the abundant .5M	rare type structura rare .5M	es or associa al diversity (#1 moderate common .4M	tions and (3) is low- abundant .3L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i)	AA contains or mature wetland or as "S rare 1H .9H .8H	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H	arm springs) forested ation listed TNHP abundant .8H .7M	AA does no rare types (#13) is association rare .8H .7M	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L	rare type structura rare .5M .4M	es or associa il diversity (#1 moderate common .4M .3L	tions and (3) is low- abundant .3L .2L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H .7M land types in	arm springs) forested ation listed TNHP abundant .8H .7M .6M the watershe	AA does no rare types (#13) is associated rare .8H .7M .6M	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M .4M ommon. Structure	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit	rare type structura rare .5M .4M	es or associa il diversity (#1 moderate common .4M .3L	tions and (3) is low- abundant .3L .2L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 4L. Recreation/Education Potential	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet!	s fen, bog, we (>80 yr-old plant associat" by the MT common .9H .8H .7M land types in onus" points	arm springs) forested ation listed TNHP abundant .8H .7M .6M the watershe	AA does no rare types (#13) is associated rare .8H .7M .6M ed basin is constructed as recreation of street recreation of the street recreation of	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M .4M ommon. Structor education	viously cited al diversity sins plant S2" by the abundant .5M .4M .3L ctural diversity	rare type structura rare .5M .4M .3L y at the site	es or associated diversity (#1 moderate common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet	s fen, bog, we (>80 yr-old plant associat" by the MT common .9H .8H .7M land types in onus" points	arm springs) forested ation listed TNHP abundant .8H .7M .6M the watershe	AA does no rare types (#13) is associated rare .8H .7M .6M ed basin is constructed as recreation of street recreation of the street recreation of	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M .4M ommon. Structor education	viously cited al diversity sins plant S2" by the abundant .5M .4M .3L ctural diversity	rare type structura rare .5M .4M .3L y at the site	es or associa il diversity (#1 moderate common .4M .3L	abundant .3L .2L .1L
Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential recoverall summary and rating page	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet ./ed. site: (crage)	s fen, bog, we (>80 yr-old plant associated plant associa	arm springs) forested ation listed TMHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by the second s	t contain pre and structur high or conta on listed as "(MTNHP common .6M .5M .4M ommon. Structor evaluation; if "	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site	common .4M .3L .2L is high.	abundant .3L .2L .1L
Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec overall summary and rating pa	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet ./ed. site: (crage)	s fen, bog, we (>80 yr-old plant associated plant associa	arm springs) forested ation listed TNHP abundant .8H .7M .6M the watershe	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by the second s	t contain pre and structur high or conta on listed as " MTNHP common .6M .5M .4M ommon. Structor education	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site	common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) Comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet I: (affords "bo/ed. site: (ciage) ne AA: X	s fen, bog, we (>80 yr-old plant associated plant associa	arm springs) forested ation listed TMHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by the second s	t contain pre and structur high or conta on listed as "(MTNHP common .6M .5M .4M ommon. Structor evaluation; if "	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site	common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec overall summary and rating pa	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet I: (affords "bo/ed. site: (ciage) ne AA: X	s fen, bog, we (>80 yr-old plant associated plant associa	arm springs) forested ation listed TMHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by the second s	t contain pre and structur high or conta on listed as "(MTNHP common .6M .5M .4M ommon. Structor evaluation; if "	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site	common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) omments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec overall summary and rating pa	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet l: (affords "bot./ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old r plant associent by the MT common .9H .8H .7M land types in conus" points ircle) X (i	arm springs) forested ation listed TMHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated. rare .8H .7M .6M ed basin is constructed by the second s	t contain pre and structur high or conta on listed as "(MTNHP common .6M .5M .4M ommon. Structor evaluation; if "	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site	common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec overall summary and rating pa	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet l: (affords "bot./ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old r plant associat" by the MT common .9H .8H .7M land types in conus" points ircle) X (incleding the control of the	arm springs) forested ation listed NHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated rare .8H .7M .6M ed basin is constructed as recreation of the with the edity;Cons	t contain pre and structur high or contain on listed as " MTNHP common .6M .5M .4M ommon. Structor evaluation; if	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site rk NA a	es or associal diversity (#1 moderate common .4M .3L .2L is high.	abundant .3L .2L .1L
Replacement potential Estimated relative abundance (#11) Low disturbance at AA (#12i) Moderate disturbance at AA (#12i) High disturbance at AA (#12i) comments: The relative abundance 4L. Recreation/Education Potential Is the AA a known or potential rec overall summary and rating pa . Check categories that apply to the i. Rating: Known or Potential Recreation or Ed	AA contains or mature wetland or as "S rare 1H .9H .8H of these wet. It (affords "bo/ed. site: (cage) ne AA: X	s fen, bog, we (>80 yr-old plant associated by the MT common .9H .8H .7M land types in conus" points ircle) X (included by the meral public	arm springs) forested ation listed NHP abundant .8H .7M .6M the watershe if AA provide: f 'Yes' contin	AA does no rare types (#13) is associated rare .8H .7M .6M ed basin is constructed with the eddy;Construction of the construction of the cons	t contain pre and structur high or contain on listed as " MTNHP common .6M .5M .4M ommon. Structor evaluation; if	viously cited al diversity ains plant S2" by the abundant .5M .4M .3L ctural diversit opportunity)	rare type structura rare .5M .4M .3L y at the site rk NA a consumptive	es or associal diversity (#1 moderate common .4M .3L .2L is high. nd proceed to rec.;	abundant .3L .2L .1L

used for educational studies by students at Montana State University and Montana Tech.

General Site Notes	
AA-3 includes 10.39 acres of wetland habitat and 0.068 acre of aquatic bed/open water habitat in 2024.	

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 Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.10	1	1.04	
B. MT Natural Heritage Program Species Habitat	М	0.50	1	5.20	
C. General Wildlife Habitat	Н	0.90	1	9.36	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	Н	0.90	1	9.36	*
G. Sediment/Nutrient/Toxicant Removal	Н	1.00	1	10.40	
H. Sediment/Shoreline Stabilization	Н	1.00	1	10.40	
I. Production Export/Food Chain Support	Н	0.80	1	8.32	*
J. Groundwater Discharge/Recharge	Н	1.00	1	10.40	
K. Uniqueness	М	0.60	1	6.24	*
L. Recreation/Education Potential (bonus points)	Н	0.20	1	2.08	
Totals: Percent of Possible Score		7.00	9.00 78%	72.73	

OVERALL ANALYSIS AREA RATING: II

Summary Comments: AA-3 is comprised of preservation wetlands across the mitigation site.

MDT Montana Wetland Assessment Form (revised March 2008)

8. Wetland size:

9. Assessment area (AA):

Project Name: Silicon Mountain Wetland Mitigation Site
 MDT Project #: STPX 47(024)56
 Control #: 50340000
 Evaluation Date: 09/23/2024
 Evaluator(s): R. McEldowney
 MDT Project #: STPX 47(024)56
 Control #: 50340000
 AA4 - Created Cell 6

6. Wetland Location(s): i. Legal: T3N,R9W,24 Latitude/Longitude: 45.997832, -112.66348 : Centroid of Wetland

ii. Approx. Stationing or Mileposts: NA

iii. Watershed: 2

Watershed Name, County: Upper Clark Fork, Silver Bow

7. a. Evaluating Agency: CCI for MDT

b. Purpose of Evaluation:

1. Wetlands potentially affected by MDT project

2. Mitigation wetlands; pre-construction

3. X Mitigation wetlands; post-construction

4. Other:

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
D	EM	E	SI	100

Abbreviations: (see manual for definitions)

HGM Classes: Riverine (R), Depressional (D), Slope (S), Mineral Soil Flats (MSF), Organic Soil Flats (OSF), Lacustrine Fringe (LF); Cowardin Classes: Rock Bottom (RB), Unconsolidated bottom (UB), Aquatic Bed (AB), Unconsolidated Shore (US), Moss-lichen Wetland (ML), Emergent Wetland (EM), Scrub-Shrub Wetland (SS), Forested Wetland (FO)

0.020 acres (measured)

0.020 acres (measured)

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

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

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

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Wetland Cell 6 is within the old road alignment. Construction of the wetland included excavation, regrading, and revegetation. Water has not been observed in the excavated portion of the wetland cell during monitoring events since 2020. ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Cirsium arvense, Euphorbia esula, and Centaurea stoebe. iii. Provide brief descriptive summary of AA and surrounding land use/habitat: The AA consists of a depressional wetland and upland buffer at the bottom of a gentle hillslope. Land use surrounding the AA includes commercial developments and transportation (railroad tracks and highway).

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

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

Comments: 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 (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): No threatened or endangered species have been reported in the assessment area or the mitigation area (USFWS 2023; MTNHP 2023).

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

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

Primary or critical habitat (list species) Secondary habitat (list species) Ir

Incidental habitat (list species)

Preble's shrew (S3), Hoary bat (S3),

Minimal (hannel on any of the fellowing felecate).

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

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

Sources for documented use (e.g. observations, records, etc): Observation of the Preble's shrew was confirmed in the vicinity of the mitigation site in 2018. Observations of the additional S3 species have been confirmed in the vicinity of the mitigation site in 2023 (MTNHP 2023).

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

Cubetestial (beard on any of the fellowing Johnstol).

Substantial (based on any of the following [check]).	winimal (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	X few or no wildlife observations during peak use periods X little to no wildlife sign sparse adjacent upland food sources
interviews with local biologists with knowledge of the AA	interviews with local biologists with knowledge of the A
Moderate (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	

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

Structural diversity (see #13)				Hi	gh							Mod	erate					Lo	w	
Class cover distribution (all vegetated classes)		Ev	en			Une	even			Ev	en			Une	ven			Ev	en	
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	Е	Е	Ε	Н	Е	Е	Н	Н	Е	Н	Н	М	Ε	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 at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

	_		•	0,						
Evidence of wildlife use (i)	Wildlife habitat features rating (ii)									
Evidence of wildlife use (i)	Exceptional	High	Moderate	Moderate						
Substantial	1E	.9H	.8H	.7M						
Moderate	.9H	.7M	.5M	.3L						
Minimal	.6M	.4M	.2L	.1L						

Comments: Small wetland with limited value to wildlife. Surface water may be present temporarily during precipitation events.

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

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

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

Duration of surface water in AA		Peri	manent	/ Perei	nnial			Sea	sonal /	Intermi	ttent			Tem	porary	/ Epher	neral	
Aquatic hiding / resting / escape cover	Opt	imal	Adeo	quate	Po	oor	Opt	imal	Adeo	quate	Po	oor	Opt	imal	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	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

- ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)
- a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat?

 If yes, reduce score in i above by 0.1.
- b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? If yes, add 0.1 to the adjusted score in i or iia.
- iii. Final Score and Rating: NA Comments: No fish habitat within AA.

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

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

Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	,	entrenche stream typ			ely entrend stream type		Entrench	ned-A, F, 0 types	3 stream
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet		.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

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

1	=		***	<i>#</i>
Flood-prone width	Bankfull width	Entrenchment ratio (ER)	2 x Bankfull Dertis	Flood-prone Width Bankfull Width
			Bankfull Depth	A.

SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2		Entrenched ER = 1.0 - 1.4	
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type
	****	1		•		•

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? ____ Comments: Depressional wetland restricts discharge or drainage to the east toward the railroad

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>:	5 acre fe	et	1.11	to 5 acre	feet	\	1 acre fo	oot
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond >= 5 out of 10 years	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

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

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

NA and proceed to 14H.)

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

3 \					•	0.		
Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.				developmen nutrients, or t use with po nutrients, o substantially	t for "probable of coxicants or AA otential to delive or compounds so or impaired. Majo	waterbodies in reauses" related receives or surrer high levels of uch that other fuor sedimentations of eutrophical	to sediment, rounding land sediments, unctions are n, sources of
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%
Evidence of flooding / ponding in AA	Yes	No	Yes	No	Yes	No	Yes	No
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L

Comments: No evidence of flooding or ponding was observed in the wetland cell during the monitoring event.

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

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

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

Comments: This section is no longer applicable due to the lack of evidence or observations of surface water retention.

14I. Production Export/Food Chain Support:

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

General Fish Habitat	General V	Vildlife Habitat Rating	j (14C.iii.)
Rating (14D.iii.)	E/H	M	L
E/H	Н	Н	M
M	Н	M	M
L	M	M	L
N/A	Н	M	L

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

Α		Vegetat	ed com	onent >	5 acres		Vegetated component 1-5 acres				Vegetated component < 1 acre							
В	Hi	gh	Mod	erate	Lo	w	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lo	W
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii

iv. Final Score and Rating: 0.20L Comments: There is a 50-foot buffer around the wetland.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators The AA is a slope wetland Permeable substrate present without underlying impeding layer 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: 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 [circle] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE **GROUNDWATER SYSTEM** P/P S/I None Criteria 1H .7M .4M .1L **Groundwater Discharge or Recharge** N/A **Insufficient Data/Information** Comments: Wetland with seasonal surface water supported by groundwater, as well as runoff and precipitation. i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA does not contain previously cited AA contains fen, bog, warm springs AA does not contain previously cited rare types and structural diversity or mature (>80 yr-old) forested rare types or associations and (#13) is high or contains plant Replacement potential wetland or plant association listed structural diversity (#13) is lowassociation listed as "S2" by the as "S1" by the MTNHP moderate **MTNHP**

High disturbance at AA (#12i) .8H .7M

Comments: Wetlands of this type are abundant in the area.

Estimated relative abundance (#11)

Moderate disturbance at AA (#12i)

Low disturbance at AA (#12i)

14L. Recreation/Education Potential: (affords "bonus" points if AA provides recreation or education opportunity)					
i. Is the AA a known or potential rec./ed. site: (circle) (if 'Yes' continue with the evaluation; if 'No' then mark X NA and proceed to the					
overall summary and rating page)	<u> </u>				
ii. Check categories that apply to the AA:	Educational/scientific study; Consumptive rec.;Non-consumptive rec.;				
_	Other:				

abundant

.8H

.7M

.6M

rare

.8H

.7M

.6M

common

.6M

.5M

4M

abundant

.5M

.4M

3L

rare

.5M

.4M

3L

common

4M

3L

2L

abundant

3L

.2L

.1L

common

.9H

.8H

rare

1H

.9H

iii. Rating:

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

Comments: The site is very close to active railroad tracks and difficult to access. This site has limited potential to 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 significantly decreased. This observation is consistent with reports in 2022 and 2023, and is trending toward being eliminated from the site.

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA4 - Created Cell 6

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	L	0.10	1	0.00	*
C. General Wildlife Habitat	L	0.20	1	0.00	*
D. General Fish Habitat	NA				
E. Flood Attenuation	NA				
F. Short and Long Term Surface Water Storage	L	0.20	1	0.00	
G. Sediment/Nutrient/Toxicant Removal	М	0.50	1	0.01	*
H. Sediment/Shoreline Stabilization	NA				
I. Production Export/Food Chain Support	L	0.20	1	0.00	
J. Groundwater Discharge/Recharge	М	0.70	1	0.01	*
K. Uniqueness	L	0.20	1	0.00	
L. Recreation/Education Potential (bonus points)	NA				
Totals:		2.10	8.00	0.02	
Percent of Possible Score			26%		

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

OVERALL ANALYSIS AREA RATING: IV

Summary Comments: AA-4 is comprised of a small excavated wetland cell.

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project Name: Silicon Mountain Wetland Mitigation Site 2. MDT Project #: STPX 47(024)56 Control #: 50340000

3. Evaluation Date: 09/23/2024 4. Evaluator(s): R. McEldowney 5. Wetlands/Site #(s): AA5 - Establishment along

6. Wetland Location(s): i. Legal: T3N,R9W,24 Latitude/Longitude: Sand Creek

Upper Clark Fork, Silver Bow

 ii. Approx. Stationing or Mileposts:
 NA

 iii. Watershed:
 2

45.994964, -112.661128: Upstream Sand
45.996343, -112.661762: Downstream Sand
45.997197, -112.662137: Upstream Sand

7. a. Evaluating Agency: CCI for MDT

Watershed Name, County:

b. Purpose of Evaluation:

1. __ Wetlands potentially affected by MDT project

Mitigation wetlands; pre-construction
 Mitigation wetlands; post-construction
 Mitigation wetlands; post-construction
 Mitigation wetlands; post-construction
 Assessment area (AA):
 3.430 acres (measured)
 4.40 acres (measured)

4. Other:

10. Classification of Wetland and Aquatic Habitats in AA

	HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
	R	EM	NA	SI	2.00
	R	SS	NA	SI	50.00
Ī	R	UB	NA	PP	48.00

Abbreviations: (see manual for definitions)

46.002869, -112.661537: Downstream Sand

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

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

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

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

COMMON

12. General condition of AA:

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

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

Comments: (types of disturbance, intensity, season, etc.): Railroad, bike path, roadways and driveways, parking area. Sand Creek comprises approximately 48% of the AA (1.47 acres).

ii. Prominent noxious, aquatic nuisance, & other exotic vegetation species: Centaurea stoebe

iii. Provide brief descriptive summary of AA and surrounding land use/habitat: Land use surrounding the AA includes commercial developments, agriculture (grazing/pasture), transportation (railroad and highway) and private residences.

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

Existing # of "Cowardin" Vegetated Classes in AA	Initial Rating	Is current management existence of additiona		Modified Rating
>= 3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	M	NA	NA	NA
1 class, but not a monoculture	М	< NO	YES>	L
1 class, monoculture (1 species comprises >= 90% of total cover)	Ĺ	NA	NA	NA

Comments: AA includes 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 (circle one based on definitions contained in instructions): No usable habitat

Primary or critical habitat (list species) Secondary habitat (list species) Incidental habitat (list species)

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

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

Sources for documented use (e.g. observations, records, etc): USFWS IPaC

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

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

Primary or critical habitat (list species) Secondary hab

Westslope cuthroat trout (S2)(S) - S2S3

Secondary habitat (list species) Hoary bat (S3)(S) - S2S3 Incidental habitat (list species)

Hoary bat (S3)(S) - S2S3

Large flowered beardtongue (S1)(S) - S1

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

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

Sources for documented use (e.g. observations, records, etc): MTNHP Montana Species of Concern Report

14C. General Wildlife Habitat Rating:

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

Substantial (based on any of the following [check]):	Minimal (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	few or no wildlife observations during peak use periods little to no wildlife sign sparse adjacent upland food sources interviews with local biologists with knowledge of the AA
Moderate (based on any of the following [check]):	
X observations of scattered wildlife groups or individuals or relatively few species during	peak periods
X common occurrence of wildlife sign such as scat, tracks, nest structures, game trails, e	etc.
X adequate adjacent upland food sources	
interviews with local biologists with knowledge of the AA	

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

Structural diversity (see #13)				Hi	igh							Mod	erate			_		Lo)W	
Class cover distribution (all vegetated classes)		Even			Uneven		Even		Uneven				Even							
Duration of surface water in >=10% of AA	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α	P/P	S/I	T/E	Α
Low disturbance at AA (see #12i)	E	Е	Е	Н	Е	Е	Н	Н	Е	Н	Н	М	E	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 at AA (see #12i)	М	М	М	L	М	М	L	L	М	М	L	L	М	L	L	L	L	L	L	L

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

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

Comments: Excellent neotropical migrant habitat.

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

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

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

Duration of surface water in AA		Permanent / Perennial						Sea	sonal /	Intermi	ttent		Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	resting / Optimal Adequate		Poor		Optimal		Optimal Adequate		Poor		Optimal		Adequate		Poor			
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	.2L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

Sources used for identifying fish sp. potentially found in AA: MTNHP 2024.

- ii. Modified Rating (NOTE: Modified score cannot exceed 1 or be less than 0.1)
- a) Is fish use of the AA significantly reduced by a culvert, dike, or other man-made structure or activity or is the waterbody included on the current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including cold or warm water fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat? If yes, reduce score in i above by 0.1.
- b) Does the AA contain a documented spawning area or other critical habitat feature (i.e., sanctuary pool, upwelling area, etc.- specify in comments) for native fish or introduced game fish? If yes, add 0.1 to the adjusted score in i or iia.
- iii. Final Score and Rating: 0.6M

Comments: Potential habitat for Westslope Cutthroat Trout. Channel is very well shaded by willows, however the depth of water in the channel limits aquatic habitat for fish

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

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

		-			٠,				
Estimated or Calculated Entrenchment (Rosgen 1994, 1996)	, ,	entrenche stream typ			ely entrend tream type		Entrenched-A, F, G stream types		
% of flooded wetland classified as forested and/or scrub/shrub	75%	25-75%	<25%	75%	25-75%	<25%	75%	25-75%	<25%
AA contains no outlet or restricted outlet	1H	.9H	.6M	.8H	.7M	.5M	.4M	.3L	.2L
AA contains unrestricted outlet	.9H	.8H	.5M	.7M	.6M	.4M	.3L	.2L	.1L

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

17 /	12 =	1.42
Flood-prone	Bankfull	Entrenchment ratio
width	width	(ER)



SI	ightly Entrenche ER = >2.2	d	Moderately Entrenched ER = 1.41 – 2.2		Entrenched ER = 1.0 – 1.4						
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type					

ii. Are ≥10 acres of wetland in the AA subject to flooding AND are man-made features which may be significantly damaged by floods located within 0.5 mile downstream of the AA (circle)? Comments: The Sand Creek channel is more entrenched in some places than in others and is dominated by scrub-shrub habitat.

- **14F. Short and Long Term Surface Water Storage:** (Applies to wetlands that flood or pond from overbank or in-channel flow, precipitation, upland surface flow, or groundwater flow. If no wetlands in the AA are subject to flooding or ponding, **NA** and proceed to 14G.)
- i. Rating (Working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating. Abbreviations for surface water durations are as follows: P/P = permanent/perennial; S/I = seasonal/intermittent; and T/E = temporary/ephemeral [see instructions for further definitions of these terms].)

Estimated maximum acre feet of water contained in wetlands within the AA that are subject to periodic flooding or ponding	>5 acre feet		1.11	to 5 acre	feet	<=1 acre foot			
Duration of surface water at wetlands within the AA	P/P	S/I	T/E	P/P	S/I	T/E	P/P	S/I	T/E
Wetlands in AA flood or pond >= 5 out of 10 years	1H	.9H	.8H	.8H	.6M	.5M	.4M	.3L	.2L
Wetlands in AA flood or pond < 5 out of 10 years	.9H	.8H	.7M	.7M	.5M	.4M	.3L	.2L	.1L

Comments: Overbank flow is more likely in the middle section of the Sand Creek channel, where water overtops the bank and inundates a broad floodplain to the west of the channel.

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

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

Sediment, nutrient, and toxicant input levels within AA	AA receives or surrounding land use with potential to deliver levels of sediments, nutrients, or compounds at levels such that other functions are not substantially impaired. Minor sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.			Waterbody on MDEQ list of waterbodies in need of TMDL development for "probable causes" related to sediment, nutrients, or toxicants or AA receives or surrounding land use with potential to deliver high levels of sediments, nutrients, or compounds such that other functions are substantially impaired. Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.					
% cover of wetland vegetation in AA	>= 7	70%	< 7	0%	>= 7	70%	< 7	0%	
Evidence of flooding / ponding in AA	Yes No		Yes	No	Yes	No	Yes	No	
AA contains no or restricted outlet	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L	
AA contains unrestricted outlet	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L	

Comments: Railroad and roadways have high potential to contribute contaminants.

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

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

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

Comments: AA dominated by Salix, Juncus, and Carex species with high stability index ratings.

14I. Production Export/Food Chain Support:

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

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

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

Α	Vegetated component >5 acres					Vegetated component 1-5 acres				Vegetated component < 1 acre								
В	Hi	gh	Mod	erate	Lo	W	Hi	gh	Mode	erate	Lo)W	Hi	gh	Mode	erate	Lo	W
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1H	.7M	.8H	.5M	.6M	.4M	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7M	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7M	.4M	.5M	.2L	.3L	.1L	.6M	.4M	.4M	.2L	.2L	.1L

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

a) Is there an average >= 50 foot-wide vegetated upland buffer around >= 75% of the AA circumference?

X If yes, add 0.1 to the score in ii above.

iv. Final Score and Rating: 1.00H Comments: AA contains surface outlet, and the upland buffer contains high amounts of non-noxious weed vegetation cover.

14J. Groundwater Discharge/Recharge: (check the appropriate indicators in i & ii below) i. Discharge Indicators ii. Recharge Indicators The AA is a slope wetland Permeable substrate present without underlying impeding layer 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: AA permanently flooded during drought periods Wetland contains an outlet, but no inlet Χ Shallow water table and the site is saturated to the surface iii. Rating (use the information from i and ii above and the table below to arrive at [circle] the functional points and rating) Duration of saturation at AA Wetlands FROM GROUNDWATER DISCHARGE OR WITH WATER THAT IS RECHARGING THE **GROUNDWATER SYSTEM** P/P S/I None Criteria 1H .7M 4M .1L **Groundwater Discharge or Recharge** N/A **Insufficient Data/Information** Comments: High water table present. 14K. Uniqueness: i. Rating (working from top to bottom, use the matrix below to arrive at [circle] the functional points and rating) AA does not contain previously cited AA contains fen, bog, warm springs AA does not contain previously cited rare types and structural diversity or mature (>80 yr-old) forested rare types or associations and Replacement potential (#13) is high **or** contains plant wetland or plant association listed structural diversity (#13) is lowassociation listed as "S2" by the as "S1" by the MTNHP moderate **MTNHP** Estimated relative abundance (#11) rare common abundant common abundant common abundant rare rare .4M Low disturbance at AA (#12i) 1H .9H .8H .8H .6M .5M .5M 3L Moderate disturbance at AA (#12i) .9H .8H .7M .7M .5M .4M .4M 31 2L High disturbance at AA (#12i) .8H .7M .6M .6M 4M 3L 3L 2L .1L Comments: Habitat types range from a perennial riverine system to emergent wetlands to shrub-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: (circle) X (if 'Yes' continue with the evaluation; if 'No' then mark NA and proceed to the overall summary and rating page) ii. Check categories that apply to the AA: X Educational/scientific study; Consumptive rec.; X Non-consumptive rec.; Other: iii. Rating: Known or Potential Recreation or Education Area Known Potential .2H .15H Public ownership or public easement with general public access (no permission required) Private ownership with general public access (no permission required) .15H .1M Private or public ownership without general public access, or requiring permission for public access .1M .05L 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 SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): AA5 - Establishment along Sand Creek

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Wetland Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0.00	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	0.70	1	2.40	
C. General Wildlife Habitat	Н	0.90	1	3.09	*
D. General Fish Habitat	М	0.60	1	2.06	
E. Flood Attenuation	Н	0.80	1	2.74	*
F. Short and Long Term Surface Water Storage	М	0.70	1	2.40	
G. Sediment/Nutrient/Toxicant Removal	Н	0.90	1	3.09	
H. Sediment/Shoreline Stabilization	Н	1.00	1	3.43	
I. Production Export/Food Chain Support	Н	1.00	1	3.43	*
J. Groundwater Discharge/Recharge	Н	1.00	1	3.43	*
K. Uniqueness	М	0.40	1	1.37	
L. Recreation/Education Potential (bonus points)	Н	0.20	1	0.69	
Totals: Percent of Possible Score		8.20	11.00 75%	24.76	

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 X Percent of possible score > 65% (round to nearest whole #).
Category III Wetland: (Criteria for Categories I, II, or IV not satisfied)
Category IV Wetland: (Criteria for Categories I or II are not satisfied and all of the following criteria are met; otherwise go to Category III)
"Low" rating for Uniqueness; and Vegetated wetland component 1 acre (do not include upland vegetated buffer); and Percent of possible score 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING: II

Summary Comments: Healthy, robust riparian zone with dense willow cover for much of its length. The AA includes 1.55 acres of wetland habitat and 1.47 acres of the active Sand Creek channel.

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2024.

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 gigantea	Black Bent	FAC
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 athrostachya	Slender-Beak Sedge	FACW
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
Chrysothamnus viscidiflorus	Yellow Rabbitbrush	UPL

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Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾		
Cicuta douglasii	Western Water-Hemlock	OBL		
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		
Koeleria macrantha	Prairie Junegrass	UPL		
Lemna minor	Common Duckweed	OBL		

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2024.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
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
Nassella viridula	Green Needle Grass	UPL
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 longifolia	Longleaf Phlox	UPL
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
Ranunculus sceleratus	Cursed Buttercup	OBL
Ranunculus sp.	Buttercup	N/A

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2024.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
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 pungens	Three-Square	OBL
Schoenoplectus tabernaernaemontani	Soft-Stem Club-Rush	OBL
Schoenoplectus acutus	Hard-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 aureum	Golden Clover	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
Veronica anagallis-aquatica	Blue Water Speedwell	OBL

Table B1. Silicon Mountain Wetland Mitigation Site. Comprehensive vegetation species list 2015-2024.

Scientific Name	Common Name	WMVC Indicator Status ⁽¹⁾
Veronica arvensis	Corm Speedwell	FACU
Veronica scutellata	Marsh Speedwell	OBL

¹ 2020 NWPL (USACE 2020)

New species identified in 2024 are bolded. NL indicator changed to UPL for species.

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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



Photo Point: 2. east.

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



Photo Point: 2. east.

Point: 2. Photo 2: View outside cell 1 looking Bearing: 86 degrees Year: 2024



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: 2024



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: 2024



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: 2024



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: 2024

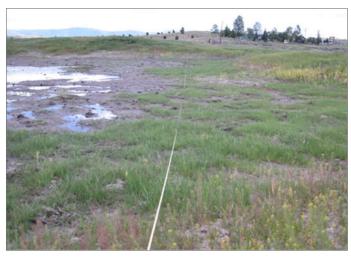


Photo Point: 3. looking SE.

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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024

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: 2024



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: 2024



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: 2024



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: 2024

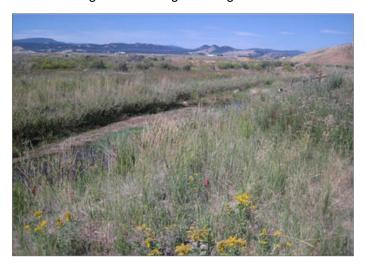


Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2015



Photo Point: 9. Photo 2: View of Sand Creek downstream of PP-9 looking N. Bearing: 220 degrees Year: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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: 2024



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



Photo Point: 16. Photo 1: View of western headcut looking west. Bearing: 210 degrees Year: 2024



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: 2024



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

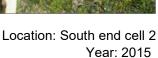


Photo Point: 17. Photo 2: View of Sand Creek channel looking N. Bearing: 356 degrees Year: 2024

Silicon Mountain: Transect Photographs



Transect 1: Start Bearing: 305 degrees





Transect 1: Start Bearing: 305 degrees

Location: South end cell 2 Year: 2024



Transect 1: End 3 looking S/SE Year: 2015

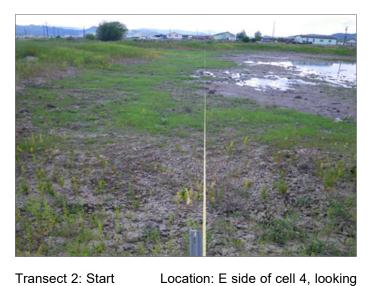
Location: North end of cell Bearing: 177 degrees



Transect 1: End 3 looking S/SE Year: 2024

Location: North end of cell Bearing: 177 degrees

Silicon Mountain: Transect Photographs



Transect 2: Start west Year: 2015



Transect 2: Start looking west Year: 2024

Location: East side of cell 4, Bearing: 285 degrees



Transect 2: End looking east/southeast Year: 2015

Location: W/NW side of cell 4, Bearing:106 degrees

Bearing: 285 degrees



Transect 2: End 4, looking east/southeast Year: 2024

Location: W/NW side of cell Bearing: 106 degrees



Data Point: DP01w in Wetland Cell 5

Location: Veg Comm. 8 Year: 2024



Data Point: DP01u near Wetland Cell 5

Location: Veg Comm. 13 Year: 2024



Data Point: DP02w Year: 2024

Location: Wetland cell 4



Data Point: DP02u Year: 2024

Location: Veg Comm. 15



Data Point: DP03w corridor near Wetland Cell 1

Location: Sandy Creek Year: 2024



Data Point: DP03u Year: 2024

Location: Veg Comm. 11



Data Point: DP04w channel, Veg Comm. 8



Year: 2024



Data Point: DP04u Location: Veg Comm. 3 Year: 2024



Data Point: DP05w Year: 2024



Location: Wetland Cell 1



Data Point: DP05u Location: Veg Comm. 9 Year: 2024



Data Point: DP06w Cell 3 Year: 2024



Location: Constructed wetland



Data Point: DP06u

Location: Veg Comm. 13. Year: 2024



Data Point: DP07w Year: 2024



Location: Wetland Cell 2



Data Point: DP07u Year: 2024



Location: Veg Comm. 13



Data Point: DP08w wetland cell 13.



Location: Constructed Year: 2024



Data Point: DP08u 10.

Location: Veg Comm. Year: 2024



Data Point: DP09w wetland cell 6

Location: Eastern edge of Year: 2024

Data Point: DP09u 13

Location: Veg Comm Year: 2024



Data Point: DP10w Location: Along Sand Creek Channel, at south end of project area Year: 2024



Data Point: DP10u Location: Veg Comm. 5 Year: 2024

Silicon Mountain: Cross-Section Photographs



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: Left bank



Cross-section 1: Right Bank Year: 2024



Cross-section 2: At center looking upstream. Year: 2024

Silicon Mountain: Cross-Section Photographs



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



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



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



Cross-section 2: At center looking downstream. Year: 2024



Cross-section 3: At center looking upstream. Year: 2024



Cross-section 3: At center looking downstream. Year: 2024



Cross-section 4: At center looking upstream.



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



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



Cross-section 4: At center looking upstream. Year: 2024



Cross-section 4: At center looking downstream. Year: 2024



Cross-section 5: At center looking upstream. Year: 2024



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: 2024



Cross-section 6: At center looking upstream. Year: 2024



Cross-section 6: At center looking downstream. Year: 2024



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: 2024



Cross-section 7: At center looking downstream. Year: 2024



Cross-section 8: At center looking upstream. Year: 2024



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



Cross-section 8: At center looking downstream. Year: 2024

APPENDIX D Surveyed Stream Cross Sections

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

