Montana Department of Transportation Wetland Mitigation Monitoring Report

JTX – TUNNICLIFF RANCH MITIGATION SITE

Project Overview

MDT Project Number: STPX-STWD (056) UPN# 7286

Watershed: Watershed #14 - Middle Yellowstone

Monitoring Year: 2022

Years Monitored: 7th year of monitoring

Corps Permit Number: NWO-2010-01938-MTH

Monitoring Conducted By: Confluence Consulting Inc

Dates Monitoring Was Conducted: June 15-17, 2022

Purpose of the Approved Project:

The site was constructed to provide 29.63 acres of compensatory wetland mitigation credits for wetland impacts associated with future transportation project-related projects in Watershed #14 – Middle Yellowstone. Construction consisted of excavating a series of 13 cells ranging in size from 0.33 to 1.50 acres. Eight woody planting enclosures, with 1,650 containerized woody plantings, were constructed around the periphery of excavated cells to establish scrub/shrub wetland and riparian habitat.

Site Location:

Latitude: 45.83953 Longitude: - 107.59887

County: Big Horn Nearest Town: Hardin, MT

Map Included: Figure 1 on page #8.

Mitigation Site Construction Started: Fall/2015 Construction Ended: Winter/2016

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

Activity: None Date: N/A

Specific recommendations for any additional corrective actions: MDT will continue to work with the landowner, Montana Fish, Wildlife and Parks (MFWP) on weed control so that noxious weed cover remains below the 5% threshold. Four enclosure fences need repair. Three fences were damaged in the lightning-sparked fire that occurred in July 2020 and another fence has a hole and is sagging (See Figure A-3). MDT could consider adaptive management to meet the woody plant performance standard. Two of the bird boxes are no longer present at the site and MDT may want to replace them.

Anticipated Wetland Credit Acres: 29.63

Wetland Credit Acres Generated to Date: 15.78

Previous Monitoring Reports:

https://www.mdt.mt.gov/publications/brochures/wetland_mitigation.shtml

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

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

Performance Standards: A summary of performance standards established for the JTX – Tunnicliff Ranch site and whether they are being achieved is provided in Table 1.

Performance Standards	Success Criteria	Criteria Achieved Y/N	Discussion
Wetland Characteristics	The three parameter criteria for hydrology, vegetation, and soils are met as outlined in the 1987 Wetland Manual and 2010 Great Plains Regional Supplement.	Y	All 13 excavated cells contain wetlands and meet the wetland hydrology, vegetation, and soil requirements. Wetlands had developed across 11.24 acres of the site in 2022.
Wetland Hydrology	Soil saturation is present for at least 12.5 percent of the growing season.	Y	All 13 excavated cells were saturated near the surface and some contained standing water during the 2022 monitoring event.
	Hydric soil conditions are present or appear to be forming.	Y	All excavated cells within the mitigation site exhibit hydric soil indicators (e.g., sulfidic odor, depleted matrix, redox dark surface).
Hydric Soil	Soil is sufficiently stable to prevent erosion.	Y	Disturbed soil is stable and does not exhibit signs of erosion.
	Soil is able to support plant cover.	Y	Vegetative cover was estimated as 85% across disturbed upland areas and 70-90% across various wetland areas in 2022. Soils on the site are supporting plant cover.
	Wetland plant communities are delineated as hydrophytic by using technical guidelines.	Y	All 13 excavated cells had developed wetland plant communities as of the 2022 monitoring event.
Hydrophytic Vegetation	Noxious weeds do not exceed 5 percent cover.	Y	Noxious weeds were identified in eleven upland locations across the site and noxious weed cover was estimated at 4% in 2022. No noxious weeds were detected within the wetland vegetation communities.
	Hydrophytic vegetation success will include achieving a minimum overall vegetation cover of 70 percent in created wetland areas within 5 years after site construction.	Y	Vegetative cover within the excavated cells ranged from 70-90% and all wetland cells achieved success for this standard in 2022.
Woody Plants	Plantings exceed 50 percent survival after 5 years.	N	Less than 1 percent of the woody plants installed at the site were alive in 2022.

Table 1. Summary of Performance Standards

Summary Data

Wetland Delineation – The JXT Tunnicliff mitigation site received higher than average precipitation in the spring of 2022. This increase in water availability following two years of drought resulted in wetland expansion across the site. The shallower water table caused the boundaries at each wetland cell to move outward. A total of 11.24 emergent wetland acres were delineated within 13 wetland cells, which is an increase of 3.06 acres since the 2021 monitoring event.

Before construction, MDT identified two small palustrine emergent wetlands in the southeastern corner of the site and a smaller palustrine emergent wetland along the eastern boundary, which altogether totaled 0.03 acre. These small wetlands were preserved during construction and were identified and mapped during the 2022 monitoring event. No changes were noted from previous years (Figure A-3, Appendix A).

Functional Assessment – The JTX Tunnicliff mitigation site has developed into a Montana Wetland Assessment Method (MWAM) Category III wetland that generated that scored 5.7 points MWAM in 2022 (Table 2; Appendix B). This score corresponds to 64.07 functional Units which is an increase of 19.08 functional units since 2021, owing to the increased wetland acreage observed in 2022 and an increase in T&E species habitat score (Table 6; Appendix B).

MWAM Function and Value Parameters	2017	2018	2019	2020	2021	2022
Listed/Proposed T&E Species Habitat	Low (0.0)	Low (0.1)				
MTNHP Species Habitat	Low (0.1)	Mod (0.6)				
General Wildlife Habitat	Mod (0.4)	Mod (0.7)				
General Fish/Aquatic Habitat	N/A	N/A	N/A	N/A	N/A	N/A
Flood Attenuation	Mod (0.5)	Mod (0.6)				
Short- and Long-Term Surface Water Storage	Mod (0.6)	High (0.9)				
Sediment/Nutrient/Toxicant Removal	Mod (0.7)	Mod (0.7)	Mod (0.7)	Mod (0.7)	High (1)	High (1)
Sediment/Shoreline Stabilization	N/A	Mod (0.6)	Mod (0.6)	Mod (0.6)	N/A	N/A
Production Export/Food Chain Support	Mod (0.4)	Mod (0.5)				
Groundwater Discharge/Recharge	Mod (0.7)					
Uniqueness	Mod (0.4)					
Recreation/Education Potential	High (0.2)					
Actual Points/Possible Points	4.0/9	5.9/10	5.9/10	5.9/10	5.6/9	5.7/9
% of Possible Score Achieved	44%	59%	59%	59%	62.22%	63.33%
Overall Category	III	Ш	III	111		

Table 2. MWAM Summary for the JTX – Tunnicliff Ranch Site

Vegetation - All desirable vegetation communities observed within the mitigation site appeared healthy in 2022, and the effects of the previous two years' drought were less noticeable. Wetland plant communities exhibited increased coverage from obligate and FAC-wet species, and the upland plant communities appeared to be growing vigorously. The wet, cloudy spring delayed vegetation growth across the site. Plant height was less than typical for mid-June and reproductive structures had not yet developed on many plants. A total of 72 plant species have been identified at the site over the last 7 years, with two species observed for the first time in 2022 (Table B-1; Appendix B).

Four upland community types and two wetland community types were identified and mapped at the site in 2022 (Figure A-3, Appendix A). Dominant plant species observed within each community are listed on the Wetland Mitigation Site Monitoring form (Appendix B). The majority of the excavated cells have developed wetland communities dominated by *Schoenoplectus spp./Typha latifolia* (i.e. Wetland Type 9). For the past few years, the wetland plant communities in cells 1, 2, 3, and 10 were still becoming established and thus the community type named "transitional wetland". In 2021, the vegetation this community was renamed as Wetland Type 13 (*Hordeum jubatum/Elymus repens*), which reflected the increase in hydrophytic vegetation that has been observed between 2019 and 2021. This trend continued in 2022, and the amount of cover from FAC-wet and obligate species increased

throughout Wetland Type 13 (Appendix B). Additionally, the majority of wetland cell 1 and a portion of cell 10/11 transitioned from Wetland Type 13 to Wetland Type 9 which contains more cover from obligate species (Figure A-3, Appendix A).

The vegetation community types identified on the site in 2022 are as follows:

- Upland Type 6 Pascopyrum smithii/Poa pratensis
- Upland Type 7 Schedonorus pratensis
- Upland Type 8 Thinopyrum intermedium
- Upland Type 12 Elaeagnus angustifolia/Thinopyrum intermedium
- Wetland Type 9 Schoenoplectus spp./Typha latifolia
- Wetland Type 13 Hordeum jubatum/Elymus repens

Vegetation cover was measured along two transects (T-1 and T-2) in 2022 (Figure A-2, Appendix A). T-1 is 792 feet long and intersects plant communities consisting of Upland Type 8 – *Thinopyrum intermedium* and Wetland Type 9 – *Schoenoplectus* spp./*Typha latifolia*. Seventy-seven percent of the transect crossed wetland habitat, which is a 20 percent increase since 2021. Total vegetative cover was 5% less than in 2022, likely due to the late start of the growing season (Table 3).

Monitoring Year 2016 2017 2018 2019 2020 2021 2021							
Monitoring Year		-				-	2022
Transect Length (feet)	792	792	792	792	792	792	792
Vegetation Community Transitions Along Transect	1	6	6	5	5	6	4
Vegetation Communities Along Transect	2	2	2	2	2	2	2
Hydrophytic Vegetation Communities Along Transect	0	1	1	1	1	1	1
Total Vegetative Species	10	21	21	21	26	21	27
Total Hydrophytic Species	2	8	9	9	8	9	12
Total Upland Species	8	13	12	12	18	12	15
Estimated % Total Vegetative Cover	75	60	75	95	95	95	90
Estimated % Unvegetated	25	40	25	5	5	5	10
% Transect Length Comprising Hydrophytic Vegetation Communities	0	47	53	56	58	57	77
% Transect Length Comprising Upland Vegetation Communities	100	53	47	44	42	43	23
% Transect Length Comprising Open Water Transitional Wetland	0	0	0	0	0	0	0

Table 3. Data Summary for T-1 from 2016 Through 2022 at the JTX – Tunnicliff Ranch Site.

T-2 is 900 feet long and intersects Upland Type 8 and Wetland Types 9 and 13. eighty-four percent of the transect crossed wetland habitat in 2022, which is a 30% increase since 2021. The transect contained small amounts standing water along the transect within the wetland cells that it crosses. Total vegetative cover was 5% less in 2022 than in 2021, again likely due to the late start of the growing season (Table 4).

The three small preservation wetlands identified within the monitoring area before site development were not assigned a community type because of their small size (total 0.03 acre). Wetland species associated with these small wetland pockets include creeping meadow foxtail (*Alopecurus arundinaceus*), Baltic rush (*Juncus balticus*), and sedges (*Carex* spp.).

Monitoring Year	2016	2017	2018	2019	2020	2021	2022
Transect Length (feet)	900	900	900	900	900	900	900
Vegetation Community Transitions Along Transect	1	6	5	5	5	7	8
Vegetation Communities Along Transect	2	3	3	3	3	3	3
Hydrophytic Vegetation Communities Along Transect	0	1	2	2	2	2	2
Total Vegetative Species	12	11	11	11	21	20	21
Total Hydrophytic Species	0	5	6	6	10	11	11
Total Upland Species	12	6	5	5	11	9	10
Estimated % Total Vegetative Cover	60	60	65	85	85	85	80
Estimated % Unvegetated	40	40	35	15	15	15	20
% Transect Length Comprising Hydrophytic Vegetation Communities	0	12	14	14	68	54	84
% Transect Length Comprising Upland Vegetation Communities	100	88	33	33	32	46	16
% Transect Length Comprising Open Water Transitional Wetland	0	0	53	53	0	0	0

Table 4. Data Summary for T-2 from 2016 Through 2022 at the JTX – Tunnicliff Ranch Site.

Eleven areas containing state-listed Priority 2B noxious weeds were mapped at the JTX – Tunnicliff mitigation site in 2022. All noxious weed infestations were located in the upland buffer areas, however one new population of Russian knapweed (*Acroptilon repens*) in encroaching on the southern end of wetland cell 2 (Figure A-3, Appendix A). Five instances of Russian knapweed (*Acroptilon repens*) were observed and assigned "trace" and "low" cover classes (less than 1% and 1-5% cover respectively), one "low" cover occurrence of houndstongue (*Cynoglossum officinale*), two "trace" and two "low" cover patches of Canada thistle (*Cirsium arvense*), and one "low" cover occurrence of field bindweed (*Convolvulus arvensis*) were also observed (Figure A-3, Appendix A). Noxious weed cover was estimated at 4% across the site. The increase in noxious weed cover is likely a result of isolated occurrences expanding during the recent drought. MDT's ongoing weed control program at the JTX Tunnicliff site has historically been effectively at reducing noxious weed infestations and in subsequent years will continue in cooperation with Montana Fish Wildlife and Parks (MFWP) to prevent increases in noxious weed cover.

Eight woody plant enclosures (PE-1 through PE-8) were monitored for woody plant survival in 2022 by walking and recording live woody stems (Figure A-3 Appendix A). A total of 1,650 containerized woody plants were installed in the eight plant enclosures in 2016. Woody species planted at the site include silver buffalo-berry (*Sheperdia argentea*), Douglas hawthorne (*Crataegus douglasii*), silverberry (*Elaeaganus commutata*), common chokecherry (*Prunus virginiana*), plains cottonwood (*Populus deltoides*), box elder (*Acer negundo*), and bur oak (*Quercus macrocarpa*). Planted woody vegetation survival was estimated at 1% in 2022, with a total of 13 live individuals observed, all contained within PE-6. In July 2020, a lightening sparked grassfire burned approximately 4.5 acres, including approximately half of PE-01 and three quarters of PE-03 (Figure A-3, Appendix A). Any live woody vegetation remaining within PE-01 and PE-03 were destroyed by the fire. Within PE-06, PE-07, and PE-08, numerous volunteer Russian Olive (*Elaeagnus angustifolia*) were observed. Intact wildlife fencing around enclosures was effective in keeping wildlife away from plantings, as no signs of browse were noted in those enclosures.

Hydrology – Groundwater is the primary hydrologic source for wetland development at the JTX-Tunnicliff site, with precipitation as a secondary hydrologic source. Three groundwater monitoring wells are located within the site, with one of the wells monitored continuously by the US Geologic Survey (USGS, well #455029107355601, and #455016107360402). The 2022 data for these wells indicates that groundwater depths ranged from approximately 4-6.6 feet below the ground surface elevation of 2,835.4 feet between May and September. These wells are located in upland areas, where the ground surface elevation is approximately 3.4 and 5.6 feet above the wetland cell design elevation of 2832.0 feet, for MW-1 and MW-7A respectively. Therefore, the groundwater depths recorded in the monitoring well likely correspond with groundwater depths ranging from approximately 0.78 feet above ground surface to 3.2 feet below the ground surface elevation in the excavated wetland cells (Table 5; USGS 2022a, USGS 2022b).

Date	Mountain Time	Depth to water level, feet below land surface	Approximate depth to groundwater below wetland cell design elevation
2022	discrete water-lev	vel measurements for	well #1
5/4/2022	5:37 pm	3.94	0.54
6/10/2022	7:34 pm	4.40	1.00
7/8/2022	8:10 pm	5.20	1.80
8/4/2022	6:00 pm	6.10	2.70
8/19/2022	6:24 pm	6.61	3.21
2022 0	liscrete water-lev	el measurements for	Well #7A
5/4/2022	5:45 pm	4.82	+0.78
6/10/2022	7:43 pm	5.15	+0.45
7/8/2022	8:24 pm	5.85	0.25
8/19/2022	6:06 pm	7.25	1.65

Table 5. 2022 USGS Groundwater Well Data for the JTX – Tunnicliff Ranch Site.

Small pools of shallow surface water were observed at the site in 2022 but all contained emergent vegetation and thus were not mapped as open water. Hydrologic indicators encountered within excavated wetland cells across the site included water-stained leaves, geomorphic position, a positive FAC-neutral test, salt crust, near surface soil saturation, oxidized rhizospheres on living roots, and a high water table.

Soils – Soil pits were excavated at paired sample plots were for all 10 wetland cells (Figure A-2 – Appendix A). Wetland soil pits were located inside the excavated depressions and upland soil pits were located upslope of and outside of the wetland boundaries. Soil textures within the wetland soil pits ranged from sandy clay to clay. The depleted matrix (F3) hydric soil indicator was observed within every wetland soil pit. Soil textures within upland soil pits ranged from sandy loam to clay. No hydric soil indicators were observed in any of the upland soil pits. Additional field observations for the 20 sample plots are provided in the wetland determination data forms in Appendix B.

A few upland soil pits exhibited redoximorphic features. It is unclear when these features developed, but their presence may indicate that the wetlands are continuing to expand.

Photographs – Photographs were taken at photo points 1–4 (PP1 to PP4), transect endpoints, and data points and are provided in Appendix C, with comparisons between 2022 and the first year of monitoring. Please refer to previous years' monitoring reports for all previous annual photographs (https://www.mdt.mt.gov/publications/brochures/wetland-mitigation.aspx).

Compensatory Mitigation Type	Mitigation Area Description	Wetland Type ^(a)	Anticipated Mitigation Surface Area (acres)	USACE- Approved Mitigation Ratios	Anticipated Mitigation Credit (acres)	2016 Mitigation Credit (acres)	2017 Mitigation Credit (acres)	2018 Mitigation Credit (acres)	2019 Mitigation Credit (acres)	2020 Mitigation Credit (acres)	2021 Mitigation Credit (acres)	2022 Mitigation Credit (acres)	2022 Functional Units
Creation (Establishment)	Depressional wetlands	Palustrine emergent and palustrine scrub/shrub	26.85	1:1	26.85	0	3.86	8.31	8.35	8.62	8.18	11.24	64.07
Creation (Reestablishment)	Woody plant enclosures	Palustrine scrub/shrub	2.73	5:1	0.55	0.5	0.47	0	0	0	0	0	0
Preservation	Pre-project Wetlands	Palustrine Emergent	0.03	1:1	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0
Upland Buffer	100-foot wide upland perimeter	N/A	10.98	5:1	2.2	0	2.66*	2.66*	2.66*	2.66*	2.66*	4.51	0
		Totals	40.6		29.63	0.5	7.02	11.00	11.04	11.31	10.87	15.78	64.07

 Table 6. Wetland Mitigation Credits Estimated for the JTX – Tunnicliff Ranch Site (2016–2020)

* Upland buffer credits for 2017-2022 were based on the expected number of credits and not calculated based on actual acreages.

Credit Summary – As of June 2022, the JTX – Tunnicliff Ranch site had developed 15.78 mitigation credit acres (Table 6). The site received 11.24 credit-acres for wetland development, which is a 3.06 credit-acre increase from 2021.

The original mitigation credit strategy called for the eight woody plant enclosures to be credited at 5:1 if the enclosures were successful in producing scrub/shrub habitat across the site. With less than 1 percent of the woody plants surviving in 2022, the woody planting credit metric is not being met and no credits have been achieved for these areas. Additional credits from the site include 0.03 acre for preservation of existing wetlands on the site before construction and 4.51 acres of upland buffer credit. Table 6 summarizes the current estimated wetland credits based on the USACE-approved credit ratios (USACE 2005) and the wetland delineation that was completed in June 2022.

Wildlife – Eight bird species were identified at the site in 2022. Six of the eight bird boxes installed at the site are functional and were full of nesting material. Two birdboxes were absent from the site. Two deer and several deer beds were observed at the site.

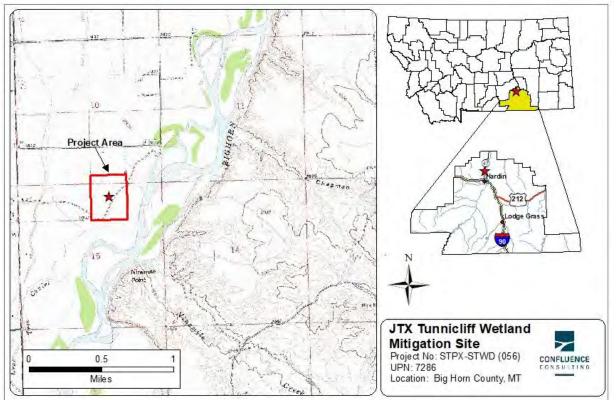
Conclusions

In the seventh year of monitoring, the JTX-Tunnicliff mitigation site met all but one of the established performance standards. Overall, vegetation communities have high amounts of cover, and the wetland areas are becoming well developed. Wetland development is expected to continue without any active management. Noxious weed cover increased 1% between 2021 and 2022 with 2 new infestations and higher cover in a couple pre-existing patches. The total cover is still less than 5% across the site and continues to meet performance standards. As spraying has historically been successful at reducing infestations at the site, it is recommended that MDT continues noxious weed management in subsequent years. The standard which requires that woody plant survival exceeds 50 percent after 5 years has not been met and is unlikely to do so without adaptive management.

While the site is meeting all of the performance standards, the wetlands need to expand by an additional 13.85 acres to meet the anticipated wetland acreage for the project. Under normal climatic circumstances, the wetlands will likely continue to expand across the site and the site may eventually hit goal for the anticipated number of acres.

Maps, Plans, Photos

Figure 1. Site Location Map



Project Area Maps/Figures: See Appendix A (Monitoring Activity Locations; Mapped Site Features; and Wetland Delineation)

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

Photos: See Appendix C (Photo Points, Paired Sampling Point Photos, and Transect Photos)

Plans: See Appendix D of 2016 Monitoring Report

https://www.mdt.mt.gov/other/webdata/external/planning/wetlands/2016_REPORTS/JTX_Tunnicliff.P DF

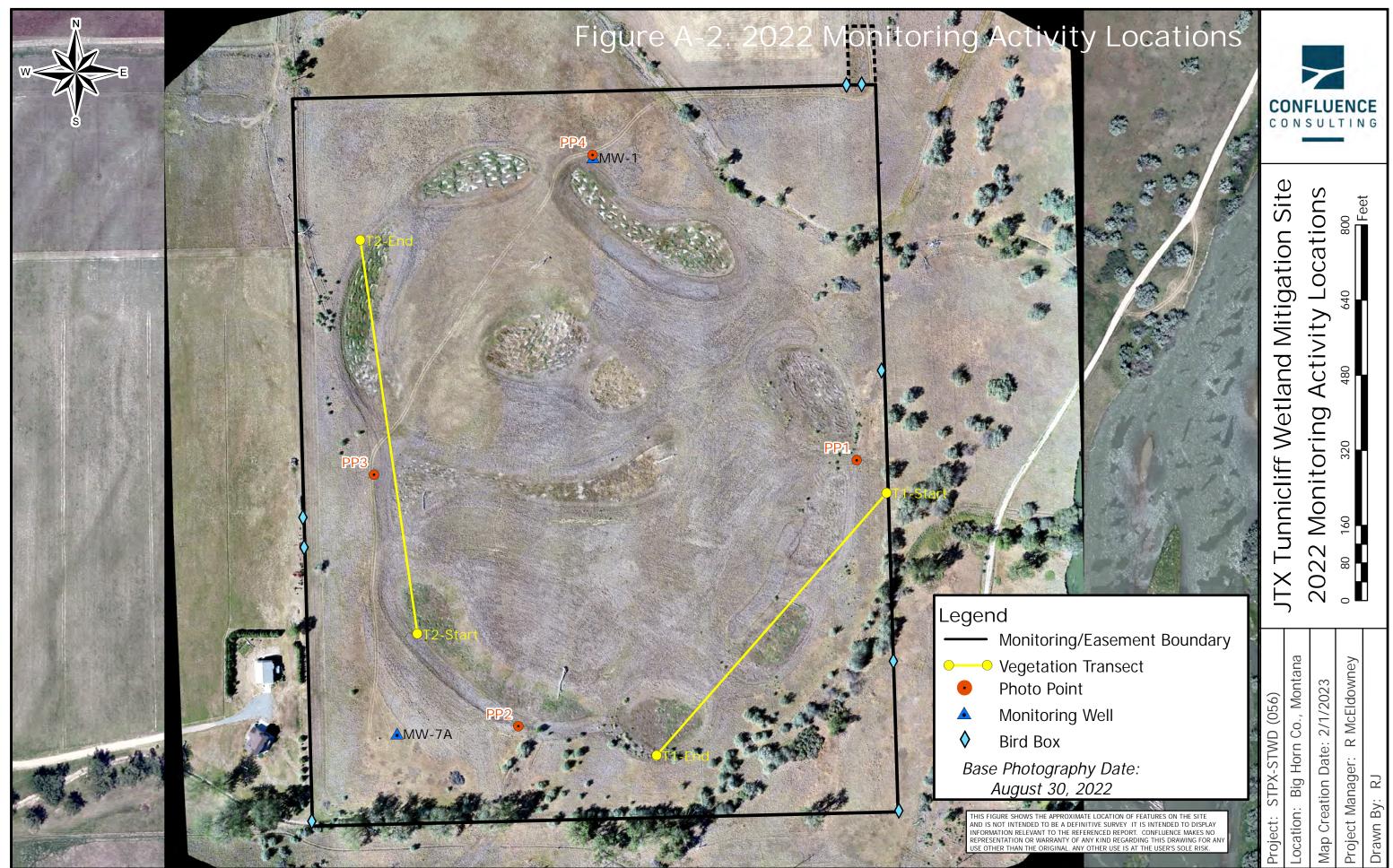
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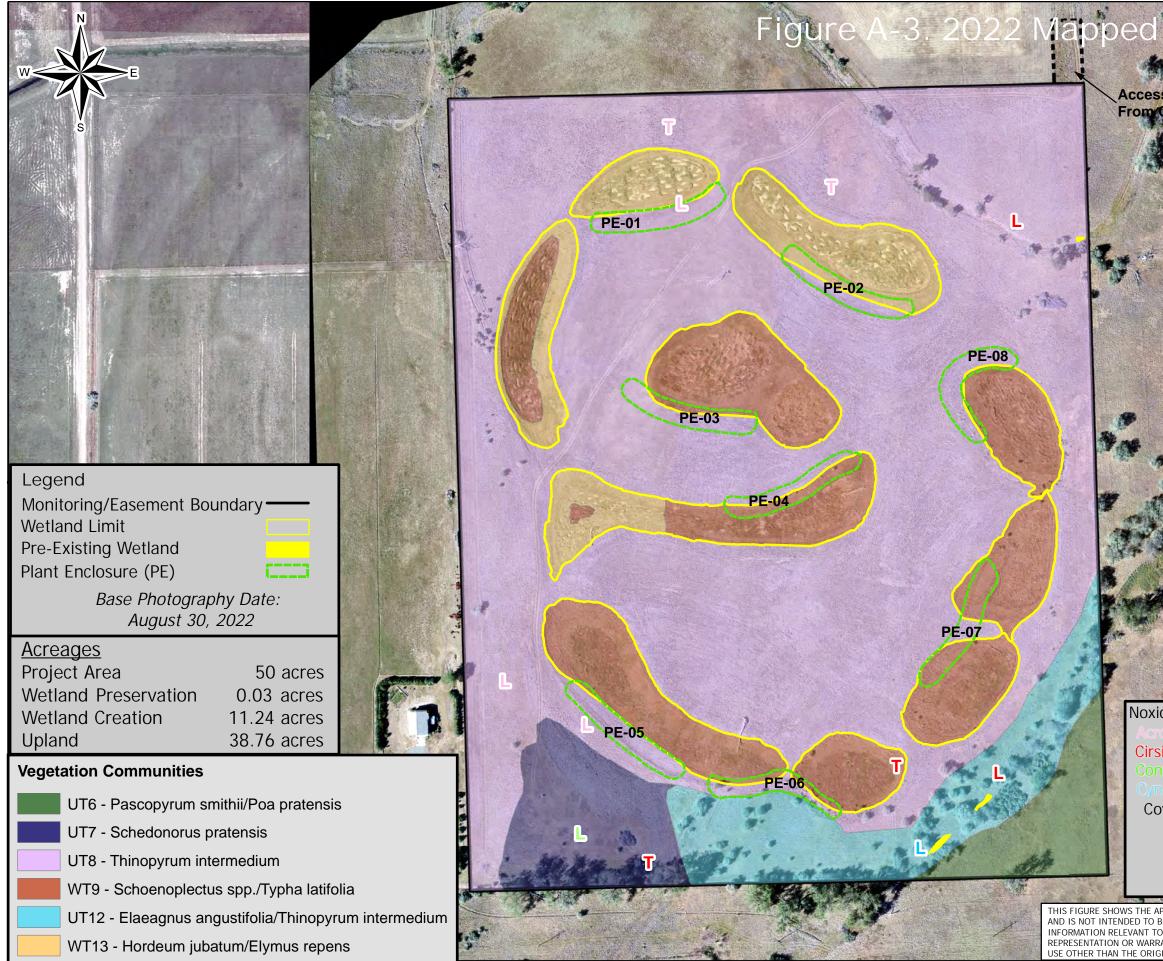
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APPENDIX A PROJECT AREA MAPS

MDT Wetland Mitigation Monitoring JTX – Tunnicliff Ranch Big Horn County, Montana



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Site Features	TX Tunnicliff Wotland Mitigation Sito		2022 Mapped Site Features	80 160 320 480 640 800		
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APPENDIX B MONITORING FORMS

MDT Wetland Mitigation Monitoring JTX – Tunnicliff Ranch Big Horn County, Montana

MDT WETLAND MITIGATION SITE MONITORING FORM

Project Site: <u>JTX-Tunr</u>	nicliff	Assessment Date/Time	<u>6/16/2</u> 022
Person(s) conducting th	e assessment: <u>R Jones,</u>	M Hickey	
Weather: <u>Sunny, light v</u>	<u>vind, 80 degrees</u> Lo	ocation: Hardin	
MDT District: Billings	Milep	ost:	
		5	
Initial Evaluation Date:	<u>6/15/2016</u> Monitoring	g Year: <u>7_</u> #Visits in Year: <u>1</u>	
Size of Evaluation Area	: <u> </u>		
Land use surrounding w Rural agriculture, spar Area, and Big Horn Ri	sely developed resident	ial areas, Grant Marsh Wildlife Managen	nent
	HYDRC)LOGY	
Surface Water Source: Gro	oundwater		
Inundation: 🗾 🔽	_ Average Depth:(0.5 (ft) Range of Depths: 0.2-1 (ft	<u>:)</u>
Percent of assessment area	under inundation: <u>5</u>	<u>%</u>	
Depth at emergent vegetation	on-open water boundary:	<u>0 (ft)</u>	
If assessment area is not in	undated then are the soils	saturated within 12 inches of surface:	Yes
Other evidence of hydrology	/ on the site (ex. – drift line	es, erosion, stained vegetation, etc <u>:</u>	
Small amounts of standing emergent vegetation and	5	n 2022. All standing water areas containe water".	əd

Groundwater Monitoring Wells

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

Well ID	Water Surface Depth (ft)
MW-1	4.4
MW-7A	5.15

Additional Activities Checklist:

Map emergent vegetation-open water boundary on aerial photograph.

✓ Observe extent of surface water during each site visit and look for evidence of past surface water

elevations (drift lines, erosion, vegetation staining, etc.)

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

Hydrology Notes:

S

Well readings listed above are from USGS readings on 6/10/2022. Both depths are Below Land Surface (BLS).

VEGETATION COMMUNITIES

Site _JTX-Tunnicliff

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

Community #	<u>6</u>	Community Type	e: <u>F</u>	<u> Pascopyrum smithii / Poa prate</u>	ensis A	cres:	<u>1.44</u>
-------------	----------	----------------	-------------	--	---------	-------	-------------

Species	Cover class	Species	Cover class
Acroptilon repens	0	Bromus inermis	3
Bromus japonicus	0	Elymus hispidus	3
Elymus repens	1	Galium aparine	3
Lepidium perfoliatum	0	Pascopyrum smithii	3
Poa pratensis	4	Sisymbrium altissimum	4

Acres:

<u>2.19</u>

Comments:

Increase in overall plant cover in 2022, with large increases in weedy annual forbs.

Community # <u>7</u> Community Type: <u>Schedonorus pratensis /</u>

Species	Cover class	Species	Cover class
Acroptilon repens	0	Alopecurus pratensis	0
Arctium lappa	0	Asclepias sp.	0
Bromus inermis	1	Bromus japonicus	1
Cirsium arvense	0	Convolvulus arvensis	0
Cynoglossum officinale	0	Dactylis glomerata	1
Elaeagnus angustifolia	0	Elymus hispidus	2
Hordeum jubatum	0	lva axillaris	0
Poa pratensis	2	Ribes aureum	0
Rosa woodsii	0	Schedonorus pratensis	3
Sisymbrium altissimum	1	Symphoricarpos albus	0
Thlaspi arvense	1	Tragopogon dubius	0

Comments:

Grass dominated upland plant community in the SW portion of the site. Changes in species composition indicate the CT has become less mesic.

Community # 8 Community Type: Elymus hispidus /

0

1

0

0

1

1

0

Cover class Cover class Species Species 0 0 Acroptilon repens Asclepias speciosa **Bare Ground** 1 Bassia scoparia 0 Bromus arvensis 0 Bromus inermis 1 Bromus japonicus 1 Bromus riparius 0 1 Bromus tectorum 1 Chenopodium album 0 Convolvulus arvensis 1 Elaeagnus angustifolia 2 Elymus hispidus 5 Elymus repens 0 Galium aparine 1 Equisetum arvense 1 Grindelia squarrosa 0 Glycyrrhiza lepidota

Iva axillaris

Medicago sativa

Schedonorus pratensis

Sporobolus airoides

Thlaspi arvense

Poa pratensis

Upland plant community observed throughout the majority of the mitigation site. Acreage decreased in 2022 due to wetland expansion. Protions of this CT that burned in 202 have recovered well.

<u>9</u> Community Type:	<u>Schoenoplectus spp. / Typha latifolia</u>	Acres:
	<u>9</u> Community Type:	<u>9</u> Community Type: <u>Schoenoplectus spp. / Typha latifolia</u>

Species	Cover class	Species	Cover class
Alopecurus arundinaceus	1	Alopecurus pratensis	0
Bare Ground	2	Beckmannia syzigachne	0
Bromus arvensis	0	Chenopodium album	0
Chenopodium rubrum	0	Cirsium arvense	0
Distichlis spicata	1	Elaeagnus angustifolia	0
Eleocharis palustris	0	Elymus hispidus	0
Elymus repens	1	Glycyrrhiza lepidota	0
Hordeum jubatum	1	Juncus balticus	2
Juncus torreyi	2	Open Water	2
Puccinellia nuttalliana	2	Rumex crispus	0
Schoenoplectus acutus	1	Schoenoplectus americanus	0
Schoenoplectus maritimus	2	Schoenoplectus pungens	1
Typha angustifolia	2	Typha latifolia	0
Xanthium strumarium	0		

Comments:

Hordeum jubatum

Melilotus officinalis

Poa secunda

Comments:

Lepidium perfoliatum

Sisymbrium altissimum

Taraxacum officinale

Xanthium strumarium

Cover from Schoenoplectus spp., Juncus spp. and Puccinellia nuttailliana increased in 2022, and Typha latifolia cover decreased. Open water areas contained enough vegetation to not be mapped seperately.

Acres: 31.81

1

0

1 2

0

0

7.94

Community #	12	Community Type:	Elaeagnus angustifolia / Elymus hispidus
			Elacagnac angacarona / Elymac mophado

Acres: <u>3.46</u>

Species	Cover class	Species	Cover class
Acroptilon repens	0	Alopecurus arundinaceus	1
Bromus inermis	2	Carex sp.	0
Cirsium arvense	1	Cynoglossum officinale	0
Echinocystis lobata	0	Elaeagnus angustifolia	3
Elymus hispidus	4	Fraxinus pennsylvanica	1
Salix fragilis	0	Shepherdia argentea	1
Symphoricarpos albus	1	Taraxacum officinale	1
_			

Comments:

Upland plant community located in the southern portion of project area; species and cover consistent with previous observations.

Community # 13 Community Type: Hordeum jubatum / Elymus repens

Acres: <u>3.3</u>

50.14

Species	Cover class	Species	Cover class	
Alopecurus arundinaceus	1	Bare Ground	3	
Chenopodium album	0	Chenopodium rubrum	0	
Distichlis spicata	2	Elaeagnus angustifolia	0	
Elymus hispidus	1	Elymus repens	3	
Hordeum jubatum	2	Juncus torreyi	1	
Puccinellia nuttalliana	2	Schoenoplectus acutus	1	
Schoenoplectus maritimus	2	Schoenoplectus pungens	1	
Typha angustifolia	1	Typha latifolia	0	
Comments:				
Community continues to trend toward becoming more hydrophytic and salt tolerant.				

Total Vegetation Community Acreage

VEGETATION TRANSECTS

JTX-Tunnicliff		Da	ate:	6/16/2022
Transect Number: <u>1</u>		Compass D	irection from Start: <u>20</u>	0
Interval Data:				
Ending Station	136 C	ommunity Type:	Elymus hispidus /	
Species	Co	over class	Species	Cover class
Bare Ground		1	Bromus inermis	1
Elymus hispidus		5	Equisetum arvense	0
Iva axillaris		0	Melilotus officinalis	0
Poa pratensis		1	Schedonorus pratensis	2
Taraxacum officinale		2		
Ending Station	577 C a	ommunity Type:	Schoenoplectus spp. / Typha	a latifolia
Species	Co	over class	Species	Cover class
Alopecurus arundinaceus		3	Bare Ground	2
Chenopodium album		0	Chenopodium rubrum	0
Cirsium arvense		0	Elymus hispidus	0
Hordeum jubatum		2	Juncus balticus	1
Juncus torreyi		2	Open Water	1
Schoenoplectus acutus		1	Schoenoplectus maritimus	1
Typha angustifolia		2	Typha latifolia	1
Xanthium strumarium		0		
Ending Station	614 C o	ommunity Type:	Elymus hispidus /	
Species	Co	over class	Species	Cover class
Bare Ground		1	Bromus inermis	0
Elaeagnus angustifolia		1	Elymus hispidus	5
Elymus repens		0	Equisetum arvense	0
Lepidium perfoliatum		0	Poa pratensis	1
Sisymbrium altissimum		1	Taraxacum officinale	0
Xanthium strumarium		0		
Ending Station	784 Co	ommunity Type:	Schoenoplectus spp. / Typha	a latifolia
Species	Co	over class	Species	Cover class
Alopecurus arundinaceus		1	Bare Ground	2
Chenopodium album		1	Elaeagnus angustifolia	0
Elymus repens		2	Glycyrrhiza lepidota	0
Hordeum jubatum		0	Juncus balticus	1
Open Water		1	Schoenoplectus acutus	3
			A	4
Schoenoplectus maritimus	i	1	Schoenoplectus pungens	I

Ending Station 792 Community Type: Elymus hispidus /

Species	Cover class	Species	Cover class
Bare Ground	2	Bromus riparius	0
Elymus hispidus	4	Elymus repens	0
lva axillaris	0	Poa secunda	0
Schedonorus pratensis	2		

Transect Notes:

Total vegetation cover was lower than in previous years due to the slow start to the growing season. Hydrophytic vegetation increased along transect and one upland interval was eliminated due to wetlands having connected through expansion.

Schoenoplectus acutus

 Transect Number:
 2
 Compass Direction from Start:
 330

Interval Data:

Ending Station	172 Community Type:	72 Community Type: Schoenoplectus spp. / Typha		
Species	Cover class	Species	Cover class	
Alopecurus arundinaceus	s 2	Bare Ground	3	
Bromus arvensis	0	Chenopodium album	0	
Chenopodium rubrum	0	Eleocharis palustris	0	
Elymus repens	1	Hordeum jubatum	2	
Juncus balticus	0	Juncus torreyi	1	
Puccinellia nuttalliana	0	Schoenoplectus acutus	1	
Schoenoplectus maritimu	is 2	Typha angustifolia	1	

Ending Station	251 Community Type	e: Elymus hispidus /	
Species	Cover class	Species	Cover class
Bare Ground	1	Bromus arvensis	0
Chenopodium album	0	Elymus hispidus	5
Hordeum jubatum	1	Sisymbrium altissimum	0
Thlaspi arvense	0		

Ending Station	433 Community Type: Hordeum jubatum / Elymus repens				
Species	Cover class	Species	Cover class		
Alopecurus arundinaceus	s 1	Bare Ground	3		
Distichlis spicata	0	Elymus hispidus	2		
Elymus repens	3	Hordeum jubatum	1		
Juncus torreyi	1	Puccinellia nuttalliana	0		

Schoenoplectus pungens

0

Ending Station 493 Community Type: Elymus hispidus /

1

Species	Cover class	Species	Cover class
Bare Ground	2	Chenopodium album	1
Elymus hispidus	4	Elymus repens	3
Lepidium perfoliatum	1	Thlaspi arvense	0

726 Community Type: Hordeum jubatum / Elymus repens **Ending Station**

Species	Cover class	Species	Cover class
Bare ground	5	Distichlis spicata	3
Elymus hispidus	2	Elymus repens	5
Hordeum jubatum	0	Puccinellia nuttalliana	0
Schoenoplectus maritimus	0		

Ending Station	870	Community Type:	Schoenoplectus spp. / Typh	na latifolia
Species		Cover class	Species	Cover class
Alopecurus pratensis		2	Bare Ground	3
Chenopodium album		1	Distichlis spicata	1
Elymus repens		2	Hordeum jubatum	3
Juncus torreyi		1	Open Water	1
Puccinellia nuttalliana		1	Schoenoplectus acutus	1
Schoenoplectus maritim	us	2	Typha angustifolia	2
Ending Station	891	Community Type:	Hordeum jubatum / Elymus	repens
Species		Cover class	Species	Cover class
Bare Ground		3	Chenopodium album	1
Elymus hispidus		0	Elymus repens	5
Ending Station	900	Community Type:	Elymus hispidus /	
Species		Cover class	Species	Cover class
Bare Ground		1	Bromus japonicus	1
Chenopodium album		0	Elymus hispidus	5
Lepidium perfoliatum		0	Sisymbrium altissimum	0
Transect Notes:				
Significant changes community type shift	-		2 associated with wetlar ell 1.	nd expansion and a

PLANTED WOODY VEGETATION SURVIVAL

JTX-Tunnicliff

Planting Type	#Planted	#Alive Notes
PE-1	0	0 3/4 burned in July 2020. No survival of planted woody vegetation observed
PE-2	0	0 Heavy grass and weedy forb competition has elminated woody vegetation
PE-3	0	0 1/3 burned in 2020, no survival of planted woody vegetation observed
PE-4	0	0 No survival of planted woody vegetation observed
PE-5	0	0 No survival of planted woody vegetation observed
PE-6	13	13 13 plains cottonwood, ~45 volunteer Russian Olives
PE-7	0	0 1 volunteer Russian Olive
PE-8	0	0 No survival of planted woody vegetation observed, 24 volunteer Russian Olive
Total Live	13	13 1% Survival (of original 1650 planted)

Comments

1,650 containerized woody plants were installed in 8 planting areas. All plantings were in 1 gallon containers except for cottonwood which were in 5 gallon containers. Very little survivorship of woody species plantings was observed. Volunteer Russian olive establishment was observed across the site, including several in PE-4, PE-6, and PE-8. The fencing at PE-1 and PE-3 was damaged by a wildfire that occured in July 2020 and needs repair. Fencing repairs are needed for PE-4.

JTX-Tunnicliff

WILDLIFE

Birds

Were man-made nesting structures installed?	Yes
If yes, type of structure: Bird boxes	
How many?8	
Are the nesting structures being used?	Yes
Do the nesting structures need repairs?	Yes

Nesting Structure Comments:

Six of the 8 nesting boxes on site were full of nesting material and a wren was observed in on box . Two boxes, one on the west fence line, and one in the southeast corner were absent fro the site in 2022.

Species	#Observed	Behavior	Habitat
Bald Eagle	1	FO	
Cedar Waxwing	1	F	
Grouse	2	LO, FO	
Olive-sided Flycatcher	1	F	
Pelican	15	FO	
Pheasant	4	LO, F	
Red-winged Blackbird	5	LO, F, BP	
Spotted Sandpiper	1	F	
Divid Commonsta			

Bird Comments

Four empty ground nests were observed with egg shell fragments.

BEHAVIOR CODES

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

HABITAT CODES

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

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

Mammals and Herptiles

Species # Observed Tracks Scat Burrows Comments

White-tailed Deer2NoNoYesBurrows = beds

Wildlife Comments:

Cat tracks observed on site and deemed to be domestic.

PHOTOGRAPHS

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

Photograph Checklist:

....

 $\overline{\mathbf{V}}$ 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.

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 \Box At least one photograph showing the buffer surrounding the wetland.

- - -

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

Photo #	Latitude	Longitude	Bearing	Description
DP01u				
DP01w				
DP02u				
DP02w				
DP03u				
DP03w				
DP04u				
DP04w				
DP05u				
DP05w				
DP06u				
DP06w				
DP07u				
DP07w				
DP08u				
DP08w				
DP09u				
DP09w				
DP10u				
DP10w				
PP 1, Photo 2	: 45.83945617	-107.5966157	270	PP-1
PP 1, Photo 3	: 45.83945617	-107.5966157	220	PP-1
PP 2, Photo 1	: 45.83785325	-107.5996803	315	PP-2
PP 2, Photo 2	: 45.83785325	-107.5996803	0	PP-2
PP 2, Photo 3	: 45.83785325	-107.5996803	45	PP-2
PP 3, Photo 1	: 45.83943906	-107.6009084	140	PP-3
PP 3, Photo 2	: 45.83943906	-107.6009084	100	PP-3
			B_11	γ

PP 3, Photo 3:	45.83943906	-107.6009084	45	PP-3
PP 4, Photo 1:	45.84139478	-107.5988983	105	PP-4
PP 4, Photo 2	45.84139478	-107.5988983	160	PP-4
PP 4, Photo 3	45.84139478	-107.5988983	240	PP-4
PP1, Photo 1:	45.83945617	-107.5966157	320	PP-1
Transect 1 end:	45.83765226	-107.5984577	50	T-1 end
Transect 1 start:	45.8392488	-107.5963573	200	T-1 start
Transect 2 end:	45.84089981	-107.6009804	160	T-2 end
Transect 2 start:	45.83844422	-107.6005579	330	T-2 start
-				

Comments:

JTX-Tunnicliff

ADDITIONAL ITEMS CHECKLIST

Hydrology

Map emergent vegetation/open water boundary on aerial photos.

Observe extent of surface water. Look for evidence of past surface water elevations (e.g. drift lines, vegetation staining, erosion, etc).

Photos

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

Vegetation

Map vegetation community boundaries

Complete Vegetation Transects

Soils

✓ Assess soils

Wetland Delineations

Delineate wetlands according to applicable USACE protocol (1987 form or Supplement)

Delineate wetland – upland boundary onto aerial photograph.

Wetland Delineation Comments

Wetland boundaries were mapped in the field, not from aerial imagery

Functional Assessments

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

Functional Assessment Comments:

Category III wetland, functional units increased in 2022 due to wetland expansion.

Maintenance

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

If yes, do they need to be repaired? Yes

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.

See planted veg and bird box comments for repairs needed.

WETLAND DETERMINATION DATA FORM - Great Plains Region

Project/Site: JTX Tunnicliff	City/County: Big Horn			_ Sampling	Date:	6/16	/2022
Applicant/Owner: MDT		State	Montana	Sampling	Point:	DP01U	
Investigator(s): R Jones, M Hickey	Section, Township, Range:		10 1	N	33E	_	
Landform (hillslope, lerrace, etc.). Floodplain	Local relief (concave, conve	x, none): Flat		Slop	oe (%):_	18
Subregion (LRR); LRR E Lat:	45.840935 Long	g:	_	-107.60093	Datur	m: NAD	83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI classi	fication: Not	mappe	ed	
Are climatic / hydrologic conditions on the site typical for this time of	fyear? Yes 🔽 No 🗌	(if no,	explain in	Remarks.)			
Are Vegetation Soil, or Hydrology significar	ntly disturbed? Are "Norma	al Circu	mstances	present? Y	es 🗸	No	
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed,	explai	n any ansv	vers in Rema	rks.)		
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point locati	ions,	transect	ts, importa	ant fe	atures	, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area						

Designation			1		
Wetland Hydrology Present?	Yes	No 🗸	billing a victualia.		
Hydric Soil Present?	Yes	No 🗸	within a Wetland?	Yes No V	
			is the Sampled Area		

Remarks: Upland sample point adjacent to DP-01w and wetland cell 1.

VEGETATION - Use scientific names of plants							
Tree Stratum Plot size ((30 Foot Radius) Absolu		Indicator Status	Dominance Test worksheet			
			Olalus	Number of Dominant Species that are OBL, FACW or FAC:	0 (A)		
				Total Number of Dominant Species Across All Strata:	1 (B)		
Sapling/Shrub Stratum	Plot size (15 Foot Radiu	.)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)		
<u>oupling on as outland</u>		·)		Prevalence Index worksheet			
				Total % Cover of:	Multiply by:		
				OBL species 0 X 1	0		
				FACW species 0 X 2	0		
				FAC species 10 X 3	30		
		`		FACU species 15 X 4	60		
Herbaceous Stratum Elymus hispidus	Plot size (5 Foot Radiu	,	NL	UPL species 55 X 5	275		
Elymus repens		Ľ	FACU	Column Totals 80 (A)	365 (B)		
			FAC				
Lepidium perfoliatum				Prevalence Index = B/A =	4.56		
Thlaspi arvense			FACU	Hydrophytic Vegetation Indicators	6		
				1 - Rapid Test for Hydrophyl	ic Vegetation		
				2 - Dominance Test is >50%)		
				3 - Prevalence Index is <= 3	.0		
				4 - Morphological Adaptation supporting data in remarks of sheet.			
				5 - Wetland Non-Vascular P	ants		
				Problematic Hydrophytic Veg	getation (Explain)		
Woody Vine Stratum	Plot size(30 Foot Radiu)		Indicators of hydric sil and wetland hy present, unless disturbed or problema			
Percent Bare Grou	und 20			Hydrophytic Vegetation Present? Yes	NO V		
Remarks:				1			

This point is dominated by upland vegetation.

Depth (inches) C 0-07 2.5 07-18 2.5 18-20 2.5	Matrix Color (moist)			d to docum	ent the li	ndicator	or confir	m the absence of indi	
(inches) C 0-07 2.5 07-18 2.5 18-20 2.5			20.002.00		Features		or comm	in the appende of mar	
07-18 2.5 18-20 2.5		%	Color	(moist)	%	Type	Loc ²	Texture	Remarks
18-20 2.5	5Y 4/3	100						Clay Loam	
	5Y 4/2	100						Sandy Loam	
	5Y 4/2	94	7.5YR	5/8	3	С	Μ	Sandy Loam	
18-20			7.5YR	4/6	3	С	Μ		
		-							
					-	-			
Type: C=Concer	ntration, D=De	epletion, RM	I=Reduce	Matrix, CS	-Covered	or Coat	ed Sand G	Grains. ² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil Indica							-		blematic Hydric Soils ² ;
Histosol (A1)]	Sandy G	leyed Ma	trix (S4)		1 cm Muck (A	9) (LRR I, J)
Histic Epipedo			[Sandy R	1. A.				Redox (A16) (LRR F, G, H)
Black Histic (A	A3)			Stripped	and the second sec			Dark Surface	Contraction of the second s
Hydrogen Sul	lfide (A4)			Loamy N	ucky Min	eral (F1)		High Plains D	epressions (F16)
Stratified Laye	ers (A5) (LRR	(F)		Loamy G	leyed Ma	trix (F2)			tside of MLRA 72 & 73)
1 cm Muck (A				Depleted		10 M 10 M 10 M		Reduced Vert	
Depleted Belo	and the second sec	ace (A11)	-	Redox D				Red Parent M	
Thick Dark Su			-	Depleted)		Dark Surface (TF12)
Sandy Mucky			5 GC 3	Redox D			300-	Other (Explain	
2.5 cm Mucky				High Plai		1			ophytic vegetation and
5 cm Mucky F	Peat or Peat (S3) (LRR F)	(MLF	A 72 & 7	3 of LRF	RH)		ogy must be present.
Restrictive Layer	(if procently	_						uniess disturb	ed ör problematic.
	(ir present):								
Туре:	1		_					4.33.21.64	nt? Yes No 🗸
Depth (inches)								Hydric Soil Preser	it? Yes No 💆
Remarks: No hyd	dric soil indic	cators met	. Redoxir	norphic col	ors are i	nixed b	etween 7	7.5YR 4/6 and 7.5YR	5/8 in the lower horizon.
YDROLOGY									
Wetland Hydrolo			A. 1. 1.					6.00 Miles	and some on the sources
Primary Indicators		one require	ed; check a						ators (minimum of two required
Surface Wate				Salt Crust (the second se	I Cracks (B6)
High Water Ta			<u> </u>	Aquatic Inve		1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C			egetated Concave Surface (B8)
	- *		4	Hydrogen S					atterns (B10)
Saturation (A	(81)			Dry-Season		able (C2			
Saturation (A				Oxidized RI			A	the second se	a state of the second state of the second state of the
Saturation (A3 Water Marks Sediment Dep				GL 12 OT - 14		es on Liv	ing Roots	s (C3) (where ti	led)
Saturation (A Water Marks Sediment Dep Drift Deposits	(B3)			(where ne	ot tilled)		2	s (C3) (where til Crayfish Bu	led) rrows (C8)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or C	(B3) Crust (B4)			Presence o	ot tilled) f Reduce	d Iron (C	2	s (C3) (where till Crayfish Bu	rrows (C8) /isible on Aerial Imagery (C9)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	(B3) Crust (B4) (B5)			Presence o Thin Muck \$	ot tilled) f Reduce Surface (f	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis	(B3) Crust (B4) (B5) sible on Aeria		37)	Presence o	ot tilled) f Reduce Surface (f	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi FAC-Neutra	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) il Test (D5)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9)		37)	Presence o Thin Muck \$	ot tilled) f Reduce Surface (f	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi FAC-Neutra	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or O Iron Deposits Inundation Vis Water-Stained	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns:)		Presence o Thin Muck Other (Expl	ot tilled) f Reduce Surface (i ain in Re	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi FAC-Neutra	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) il Test (D5)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or O Iron Deposits Inundation Vis Water-Stained	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns:		No 🔽	Presence o Thin Muck \$	ot tilled) f Reduce Surface (i ain in Re	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi FAC-Neutra	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) il Test (D5)
Saturation (A: Vater Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Pre	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: esent?)		Presence o Thin Muck Other (Expl	ot tilled) f Reduce Surface (I ain in Re nes):	d Iron (C C7)	2	s (C3) (where ti Crayfish Bu Saturation V Geomorphi FAC-Neutra	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) il Test (D5) e Hummocks (D7) (LRR F)
Saturation (A: Vater Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Presen Vater Table Presen Vincludes capillary	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: essent? ent? t? fringe)	Yes Yes Yes		Presence o Thin Muck S Other (Expl Depth (incl Depth (incl Depth (incl	ot tilled) f Reduce Surface (i ain in Re nes): nes): nes):	d Iron (C C7) marks)	4)	tland Hydrology Prese	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) al Test (D5) e Hummocks (D7) (LRR F)
Saturation (A: Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vis Water-Stained Field Observation Surface Water Pre- Water Table Presen	(B3) Crust (B4) (B5) sible on Aeria d Leaves (B9) ns: essent? ent? t? fringe)	Yes Yes Yes		Presence o Thin Muck S Other (Expl Depth (incl Depth (incl Depth (incl	ot tilled) f Reduce Surface (i ain in Re nes): nes): nes):	d Iron (C C7) marks)	4)	tland Hydrology Prese	led) rrows (C8) /isible on Aerial Imagery (C9) c Position (D2) al Test (D5) e Hummocks (D7) (LRR F)

Project/Site: JTX Tunnicliff	City/County: Big Horn			Sampling Date: 6/16/2022		6/16/2022	
Applicant/Owner. MDT		State	Mon	tana	Sampling Poi	nt: DF	P01W
Investigator(s): R Jones, M Hickey	_ Section, Township, Range: _		10	1N	3	3E	
Landform (hillslope, terrace, etc.). Floodplain	_ Local relief (concave, conve	x, none): <u>Co</u>	ncave		Slope	(%):0
Subregion (LRR); LRR E Lat:	45.840897 Long	g:	_	-10	7.600865 D	atum:	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI c	lassific	ation: Not ma	pped	
	ly disturbed? Are "Norm problematic? (If needed,	al Circu explaii	imstai n any	nces" p answei	emarks.) resent? Yes rs in Remarks. , important)	No
Hydrophytic Vegetation Present? Yes No	- Is the Sampled Area					30.12	

Hydric Soil Present?	within a Wetland?	Yes No	
Wetland Hydrology Present? Remarks: DEM wotland contains			

Remarks: PEM wetland contained within wetland cell 1.

VEGETATION - Use scientific names of plants		
Tree Otreture Distaire (00 Fast Dedius)	Domiant Indicator Species? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
<u></u>		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 10 X 1 10
		FACW species 20 X 2 40
		FAC species 0 X 3 0
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 0 X 4 0
Alopecurus arundinaceus 10	✓ FACW	UPL species 0 X 5 0
Hordeum jubatum 10	✓ FACW	Column Totals 30 (A) 50 (B)
Puccinellia nuttalliana 5	OBL	Prevalence Index = B/A = 1.67
Typha angustifolia 5	OBL	Hydrophytic Vegetation Indicators
		1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 70		Hydrophytic Vegetation Present? Yes ✔ NO □

Remarks:

A positive dominance test and a prevalence index below three provide evidence for the presence of a hydrophytic vegetation community.

Depth	-	Matrix		_		x Features				
(inches)	Color	(moist)	%	Color	(moist)	%	Type	Loc ²	Texture	Remarks
0-05	2.5Y	4/1	75	Ν	2.5/0	10	D	Μ	Clay Loam	
0-05	2.5Y	4/1	75	7.5YR	4/5	15	С	M, PL	Clay Loam	
05-15	2.5Y	4/3	100						Sandy Clay	very cobbly
					d Matrix, CS			ted Sand G		tion: PL=Pore Lining, M=Matrix. or Problematic Hydric Soils ² ;
Histosol Histic E Black H Hydroge Stratified 1 cm Mu Deplete Thick Da Sandy M 2.5 cm 1	(A1) pipedon (A istic (A3) en Sulfide d Layers (/ uck (A9) (L d Below D ark Surfac /lucky Minn Mucky Pea	(A4) (A5) (LRR F .RR F, G, I ark Surfac e (A12)	=) H) e (A11) S2) (LRR	G, H)	Sandy G Sandy R Stripped Loamy M Loamy C Depleted Redox D Redox D High Pla	Bleyed Ma Redox (S5 Matrix (S Mucky Mir Bleyed Ma	trix (S4)) 66) heral (F1 atrix (F2) F3) lice (F6) rface (F6) ns (F8) essions () 7) (F16)	i cm Mu Coast P Dark Su High Pla (LRF Reduce Red Par Very Sh Other (E Indicators o wetland	or Problematic Hydric Solis : Jock (A9) (LRR I, J) rairie Redox (A16) (LRR F, G, H) Inface (S7) (LRR G) ains Depressions (F16) R H outside of MLRA 72 & 73) d Vertic (F18) rent Material (TF2) allow Dark Surface (TF12) Explain in Remarks) f hydrophytic vegetation and hydrology must be present, disturbed or problematic.
lo	ches): aint redo:	ximorphic con was v								Present? Yes <u>No</u> No n the depleted matrix. Soil in the ture properly, but was likely a
YDROLO	GY									
Vetland Hy	drology In	ndicators:								6 9 6 6 B.C.
Primary India	cators (min	nimum of o	ne require	d; check a	all that apply	()			Secondar	y Indicators (minimum of two required
	Water (A1				Salt Crust	and the second	- (042)			ce Soil Cracks (B6)
 Saturation 	ater Table on (A3) Iarks (B1)	(A2)			Aquatic Inv Hydrogen 3 Dry-Seaso	Sulfide Od	dor (C1)		Drain	ely Vegetated Concave Surface (B8) age Patterns (B10) zed Rhizospheres on Living Roots (C3
Drift Dep Algal Ma	nt Deposits posits (B3) at or Crust posits (B5)) (B4)	magani //		Oxidized R (where n Presence of Thin Muck Other (Exp	of Reduce Surface (d Iron (0 C7)		☐ Crayf ☐ Satur ✔ Geon	e re tilled) ish Burrows (C8) ation Visible on Aerial Imagery (C9) norphic Position (D2) Neutral Test (D5)
	tained Lea		10-3-17 (annai (mit					Heave Hummocks (D7) (LRR F)
Field Obser	vations:		_		P					
Surface Wat			es 🛄	No_	_ Depth (ind		-	_		
Nater Table			es 🔽	No	Depth (inc	and the second second	7	-		
Saturation P (includes cap	pillary fring	je)	es 🗸	No	_ Depth (ind		0	_	tland Hydrology	Present? Yes No No
Jacoriha Ra	corded Da	ita (stream	gauge, n	onitoring v	well, aerial p	hotos, pri	evious in	spections)	if available:	
Describe Re			(e e.c.)					a fra server i	Contraction of the	

Project/Site: JTX Tunnicliff	City/County: Big Horn			5	Sampling Date	6/1	7/2022	
Applicant/Owner: MDT			State	Monta	na s	Sampling Poin	t: DP02	J
Investigator(s): R Jones, M Hickey		Section, Township, Range:		10	1N	33		
Landform (hillslope, terrace, etc.). Shoulder slope		Local relief (concave, conve	x, none): Conve	ex	S	slope (%)	3
Subregion (LRR): LRR E	45.841442 Lon	g:		-107	.599449 Da	tum: NA	D 83	
Soil Map Unit Name: Hh: Haverson and Lohmiller soils	, wet			WWI clas	sificat	tion: Not map	oped	
	significant naturally p	ly disturbed? Are "Norm problematic? (If needed,	al Circu explai	n any an	es" pre	esent? Yes_ in Remarks.)		o
Hydrophytic Vegetation Present? Yes N Hydric Soil Present? Yes N		Is the Sampled Area within a Wetland?		Yes_		No	_	

Preseda:				_
Wetland Hydrology Present?	Yes No 🗸	within a vietand?	169	- 100-
Hydric Soil Present?	Yes No 🗸	within a Wetland?	Vac	No

Remarks: Upland sample point adjacent to DP02w and wetland cell 2.

VEGETATION - Use scientific names of plants	
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute Domiant Indicator % Cover: Species? Status	Dominance Test worksheet
	Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
	Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species 50.0 % (A/B)
	Prevalence Index worksheet
	Total % Cover of: Multiply by:
	OBL species 0 X 1 0
	FACW species 20 X 2 40
	FAC species 10 X 3 30
Herbaceous Stratum Plot size (5 Foot Radius)	FACU species 30 X 4 120
Bromus anomalus 5 NL	UPL species 15 X 5 75
Bromus tectorum 10 NL	Column Totals 75 (A) 265 (B)
Distichlis spicata 20 🖌 FACW	Prevalence Index = B/A = 3.53
Elymus repens 20 🗸 FACU	
Lepidium perfoliatum 10 FAC	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Sisymbrium altissimum 10 🗌 FACU	\square 2 - Dominance Test is >50%
	\square 3 - Prevalence Index is <= 3.0
	 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
	5 - Wetland Non-Vascular Plants
	Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)	Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 25	Hydrophytic Vegetation Present? Yes NO
Remarks:	

No evidence of a hydrophytic vegetation community present.

OIL				Sampling Point: DP02U
Profile Description: (D	Describe to	the depth ne	eeded to document the indicator or c	confirm the absence of indicators.)
Depth	Matrix		Redox Features	
(inches) Color (moist)	% 0	Color (moist) % Type ¹ L	.oc ² Texture Remarks
0-02 10YR	4/2	100		Sandy Loam
02-08 2Y	4/2	100		Sandy Clay Loam
08-17 10YR	4/2	100		Loamy Sand
	_			
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2 Black Histic (A3) Hydrogen Sulfide (A Stratified Layers (A3) 1 cm Muck (A9) (LF Depleted Below Da Thick Dark Surface Sandy Mucky Miner 2.5 cm Mucky Peat or 5 cm Mucky Peat or Restrictive Layer (if pr Type: Depth (inches):	: (Applicab 2) (LRR F) (LRR F) RR F, G, H) ink Surface ((A12) ral (S1) or Peat (S2) resent):	A11)) (LRR G, H) (LRR F)	(MLRA 72 & 73 of LRR H)	Indicators for Problematic Hydric Soils ³ : 1 cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H) Dark Surface (S7) (LRR G) High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) Reduced Vertic (F18) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) ³ Indicators of hydrophytic vegetation and
YDROLOGY				
Netland Hydrology Inc	dicators:			
Primary Indicators (mini		required; ch	eck all that apply)	Secondary Indicators (minimum of two required
Surface Water (A1) High Water Table (A Saturation (A3) Water Marks (B1) Sediment Deposits (B3) Algal Mat or Crust (Iron Deposits (B5) Inundation Visible o Water-Stained Leav Field Observations:	A2) (B2) (B4) on Aerial Ima	ngery (B7)	 Salt Crust (B11) Aquatic Invertebrates (B13) Hydrogen Sulfide Odor (C1) Dry-Season Water Table (C2) Oxidized Rhizospheres on Living (where not tilled) Presence of Reduced Iron (C4) Thin Muck Surface (C7) Other (Explain in Remarks) 	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
			Depth (inches):	
	Yes		Depth (inches):	
Surface Water Present?				
Surface Water Present? Nater Table Present? Saturation Present?	Yes Yes		☑ Depth (inches):	Wetland Hydrology Present? Yes No
Surface Water Present? Water Table Present? Saturation Present? (includes capillary fringe	Yes Yes	NoNo	✓_ Depth (inches): ring well, aerial photos, previous inspec	wetland Hydrology Present? Tes No

Project/Site: JTX Tunnicliff	City/County: Big Horn		San	npling Date:	6/16/2022
Applicant/Owner: MDT	S	tate: Mon	tana Sam	npling Point: D	P02W
Investigator(s): R Jones, M Hickey	Section, Township, Range:	10	1N	33E	
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, convex, r	none): Co	ncave	Slope	e (%):4
Subregion (LRR): LRR E Lat:	45.841364 Long:		-107.59	99486 Datum	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet		NWIC	assification	Not mapped	b
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🔽 No 🗌 (I	f no, expla	in in Reman	rks.)	
	tly disturbed? Are "Normal (Circumsta	nces" prese	nt? Yes 🔽	No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, ex	plain any	answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing	ng sampling point location	ns, tran	sects, im	portant fea	tures, etc.
Hydrophytic Vegetation Present? Yes No	- Is the Sampled Area			-	

Hydric Soil Present? Wetland Hydrology Present?	Yes 🔽 No 🗌 Yes 🗹 No 🗌	within a Wetland?	Yes No	
Remarks: DEM wotland located w	ithin watland call 2 Vagatation i	s problematic due to the d	Iominance of Elymus repens. Wetlan	4

Temarks: PEM wetland located within wetland cell 2. Vegetation is problematic due to the dominance of Elymus repens. Wetland determination is based on the presence of hydric soils and wetland hydrology.

VEGETATION - Use scie	ntific names of plant	S		
Tree Stratum Plot size (30	Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet	
			Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
			Total Number of Dominant Species Across All Strata:	1 (B)
Sapling/Shrub Stratum Plo	ot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
	(10)))		Prevalence Index worksheet	
			Total % Cover of:	Multiply by:
			OBL species 0 X 1	0
			FACW species 10 X 2	20
			FAC species 0 X 3	0
			FACU species 80 X 4	320
	ot size(5 Foot Radius)		UPL species 0 X 5	0
Bassia scoparia	5	FACU		
Elymus repens	75	FACU	Column Totals 90 (A)	340 (B)
Hordeum jubatum	10	FACW	Prevalence Index = B/A =	3.78
			Hydrophytic Vegetation Indicator	s
			1 - Rapid Test for Hydrophy	tic Vegetation
			2 - Dominance Test is >50%	6
			3 - Prevalence Index is <= 3	3.0
			4 - Morphological Adaptatio supporting data in remarks sheet.	
			5 - Wetland Non-Vascular P	lants
			Problematic Hydrophytic Ve	getation (Explain)
Woody Vine Stratum Plo	ot size(30 Foot Radius)		Indicators of hydric sil and wetland hy present, unless disturbed or problem	
Percent Bare Ground	10		Hydrophytic Vegetation Present? Yes	NO 🗹

Remarks:

Although hydric soil indicators and primary hydrology indicators are present, the vegetation community does not satisfy any of the any hydrophytic vegetation indicator requirements.

Depth		Matrix			Redox	Features			m the absence o	
(inches)	Color		%	Color	(moist)	%	Type ¹	Loc ²	Texture	Remarks
0-08	10YR	4/1	70	7.5YR	3/4	30	С	M,PL	Clay	
0-08	10YR	4/1	70	Ν	2.5/0	10	С	M,PL	Clay	
08-16	2.5Y	4/2	100			_			Loamy Sand	Many cobbles throughout.
Iydric Soil Histosol Histic E Black Hi Hydroge Stratified 1 cm Mu Depleted Thick Da	Indicators	: (Applica 2) A4) A5) (LRR F RR F, G, H ark Surface e (A12) eral (S1)))) : (A11)	LRRs, u 	Sandy Re Stripped Loamy M Loamy G Depleted Redox D Depleted Redox D		d.) rix (S4) 6) eral (F1) trix (F2) 3) ce (F6) face (F7) s (F8))	Indicators fo	tion: PL=Pore Lining, M=Matrix. or Problematic Hydric Soils ³ : tack (A9) (LRR I, J) rainie Redox (A16) (LRR F, G, H) rface (S7) (LRR G) ins Depressions (F16) H outside of MLRA 72 & 73) d Vertic (F18) ent Material (TF2) allow Dark Surface (TF12) xplain in Remarks) f hydrophytic vegetation and
2.5 cm M	Mucky Pear ucky Pear c				and the second se	1. A.	3 of LRI	RH)	wetland I	
2.5 cm M 5 cm M Restrictive I Type:	ucky Peat c Layer (if p	or Peat (S3			and the second se	RA 72 & 7:	3 of LRI	₹H)	unless d	hydrology must be present, isturbed ör problematic.
2.5 cm M 5 cm M Restrictive I Type: Depth (in	ucky Peat c Layer (if p ches):	or Peat (S3 resent):) (LRR F)	(MLR	tA 72 & 73			unless d Hydric Soil P	hydrology must be present, isturbed ör problematic.
2.5 cm M 5 cm M Restrictive I Type: Depth (in Remarks: M	ucky Peat c Layer (if p ches): lany prom	or Peat (S3 resent):) (LRR F)	(MLR	tA 72 & 73			unless d Hydric Soil P	hydrology must be present, isturbed ör problematic. resent? Yes No
2.5 cm M 5 cm M Cestrictive I Type: Depth (in Remarks: M YDROLO	ucky Peal c Layer (if p ches): lany prom	or Peat (S3 resent):) (LRR F)	(MLR	tA 72 & 73			unless d Hydric Soil P	hydrology must be present, isturbed ör problematic. resent? Yes No
2.5 cm M 5 cm M Type: Depth (in Remarks: M YDROLO Wetland Hy	ucky Peat c Layer (if p ches): lany prom IGY drology In	or Peat (S3 resent): inent rede dicators:) (LRR F) hic featur	(MLR	4 72 & 7:			Unless d Hydric Soil P along pore linin	hydrology must be present, isturbed or problematic. resent? Yes <u>No</u> No gs within the depleted matrix.
2.5 cm M 5 cm M For M Control	ucky Peat c Layer (if p ches): lany prom IGY drology In cators (min	or Peat (S3 resent): inent red dicators: imum of or) (LRR F) hic featur	(MLR res observe	d as con			Unless d Hydric Soil P along pore linin	hydrology must be present, isturbed ör problematic. resent? Yes <u>No</u> No gs within the depleted matrix.
2.5 cm M 5 cm M 5 cm M Type: Depth (in- Remarks: M YDROLO Vetland Hy Primary India Surface High Wa Saturatia Water M	Layer (if p Layer (if p ches): lany prom GGY drology In cators (min Water (A1) ater Table (on (A3) larks (B1)	or Peat (S3 resent): inent red dicators: imum of or) A2)) (LRR F) hic featur	(MLR res observe all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season	d as con d as con b B11) ertebrates sulfide Odd water Ta	(B13) or (C1) able (C2	ions and	Unless d Hydric Soil P along pore linin Secondary Surfac Spars Draina Oxidiz	hydrology must be present, isturbed or problematic. resent? Yes No gs within the depleted matrix. / Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) red Rhizospheres on Living Roots (C3)
2.5 cm M 5 cm M Type: Depth (in- Remarks: M YDROLO Vetland Hy Primary India G Saturatia G Sa	Ches): Ches): Iany prom GGY drology In cators (min Water (A1) ater Table (on (A3) Marks (B1) nt Deposits posits (B3) at or Crust posits (B5) ion Visible (or Peat (S3 resent): inent redo dicators: imum of or) A2) (B2) (B4) on Aerial Ir) (LRR F) hic featur	(MLR res observe all that apply Salt Crust (I Aquatic Inve Hydrogen S	d as con d as con b B11) ertebrates sulfide Odd Water Ta hizosphere ot tilled) f Reduced Surface (C	(B13) or (C1) able (C2 es on Liv d Iron (C 27)	ions and	Hydric Soil P along pore linin Secondary Surfac Surfac Spars Draina Cxidiz s (C3) (whe Crayfi Satura Satura FAC-h	hydrology must be present, isturbed or problematic. resent? Yes No gs within the depleted matrix. / Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C3 ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) horphic Position (D2) Neutral Test (D5)
2.5 cm M 5 cm M 5 cm M U Restrictive I Type: Depth (in Remarks: M YDROLO Vetland Hy Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Inundati Water-S	Layer (if p Layer (if p ches): lany prom GGY drology In cators (min Water (A1) ater Table (on (A3) Marks (B1) nt Deposits posits (B3) at or Crust posits (B5) ion Visible of Stained Lea	or Peat (S3 resent): inent redo dicators: imum of or) A2) (B2) (B4) on Aerial Ir) (LRR F) hic featur	(MLR res observe all that apply Salt Crust () Aquatic Inve Hydrogen S Dry-Season Oxidized Rł (where ne Presence o Thin Muck S	d as con d as con b B11) ertebrates sulfide Odd Water Ta hizosphere ot tilled) f Reduced Surface (C	(B13) or (C1) able (C2 es on Liv d Iron (C 27)	ions and	Hydric Soil P along pore linin Secondary Surfac Surfac Spars Draina Cxidiz s (C3) (whe Crayfi Satura Satura FAC-h	hydrology must be present, isturbed or problematic. resent? Yes No gs within the depleted matrix. y Indicators (minimum of two required the Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C3 ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2)
2.5 cm M 5 cm M 5 cm M Comment Type: Depth (inclustry) Comment	Layer (if p Layer (if p ches): lany prom GGY drology In cators (min Water (A1) ater Table (on (A3) Marks (B1) nt Deposits posits (B3) at or Crust posits (B5) ion Visible of itained Lea vations:	or Peat (S3 resent): inent red dicators: imum of or) A2) (B2) (B4) on Aerial Ir ves (B9)) (LRR F) hic featur	(MLR res observe all that apply Salt Crust () Aquatic Inve Hydrogen S Dry-Season Oxidized Rł (where ne Presence o Thin Muck S	d as con d as con b B11) ertebrates sulfide Odo Water Ta hizosphere ot tilled) f Reduced Surface (C ain in Ren	(B13) or (C1) able (C2 es on Liv d Iron (C 27)	ions and	Hydric Soil P along pore linin Secondary Surfac Surfac Spars Draina Cxidiz s (C3) (whe Crayfi Satura Satura FAC-h	hydrology must be present, isturbed or problematic. resent? Yes No gs within the depleted matrix. / Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
2.5 cm M 5 cm Mu Sectrictive I Type: Depth (inv Remarks: M YDROLO YDROLO YDROLO YDROLO YDROLO YOROLO	Ucky Peat of Layer (if p ches): lany prom GGY drology In cators (min Water (A1) ater Table (on (A3) Marks (B1) nt Deposits (B3) darks (B3) at or Crust posits (B3) at or Crust posits (B3) on Visible of stained Lea vations: mer Present	or Peat (S3 resent): inent red dicators: imum of or) A2) (B2) (B4) (B4) on Aerial Ir ves (B9) ? Ye) (LRR F) hic featur	(MLR es observe all that apply Salt Crust (I Aquatic Inve Hydrogen S Dry-Season Oxidized Rł (where ne Presence o Thin Muck S Other (Expl	d as con d as con b b b b b b b b b b b b b b b b b b b	(B13) or (C1) able (C2 es on Liv d Iron (C 27)	ions and	Hydric Soil P along pore linin Secondary Surfac Surfac Spars Draina Cxidiz s (C3) (whe Crayfi Satura Satura FAC-h	Anydrology must be present, isturbed or problematic. resent? Yes No gs within the depleted matrix. / Indicators (minimum of two required the Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C3 ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) horphic Position (D2) Neutral Test (D5)

Remarks: Evidence of wetland hydrology observed in salt crusts and algal mats, as well as saturation at the soil surface and a water table at a depth of 10 inches.

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Da	te:	6/16/2022
Applicant/Owner. MDT		State	Mont	ana	Sampling Po	int: DF	203U
Investigator(s): R Jones, M Hickey	_ Section, Township, Range: _		15	1N	:	3E	
Landform (hillslope, terrace, etc.): Floodplain	_ Local relief (concave, conve	x, none) Flat			Slope	(%):(
Subregion (LRR): LRR E Lat:	45.840772 Lon	g:		-10	7.597562	Datum:	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cl	assifica	ation: Not ma	apped	
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🗹 No 🗌	(if no,	explai	n in Re	emarks.)		
Are Vegetation, Soil, or Hydrology significant	tly disturbed? Are "Norm	al Circu	mstan	ces" p	resent? Yes		No
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If needed,	explai	n any a	answer	rs in Remarks	5.)	
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locat	ions,	trans	ects,	, importan	t feat	ures, etc
Hydrophytic Vegetation Present? Yes No V	- Is the Sampled Area						

Hydric Soil Present? Wetland Hydrology Present?	Yes	No 🗸	within a Wetland?	Yes No	
Permade			1		_

Remarks: Upland sample point adjacent to DP03w and wetland cell 3.

VEGETATION - Use scientific names of plants									
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute Domiant Indicator % Cover: Species? Status	Dominance Test worksheet								
	Number of Dominant Species that are OBL, FACW or FAC: 0 (A)								
	Total Number of Dominant Species Across All Strata: 1 (B)								
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species 0.0 % (A/B) That Are OBL, FACW, or FAC:								
	Total % Cover of: Multiply by: OBL species 0 X 1 0								
	FACW species0X 20FAC species0X 30								
Herbaceous Stratum Plot size (5 Foot Radius)	FACU species 15 X 4 60								
Bromus japonicus 5 NL	UPL species 65 X 5 325								
Elymus hispidus 60 V NL	Column Totals 80 (A) 385 (B)								
Elymus trachycaulus 15 FACU	Prevalence Index = B/A = 4.81								
	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0								
Woody Vine Stratum Plot size (30 Foot Radius)	Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.								
Percent Bare Ground 20 Remarks:	Hydrophytic Vegetation Present? Yes NO 🗹								

No evidence for a hydrophytic vegetation community observed.

									Sampling Point: DP03U
Profile Desc	ription: (D	Describe	to the depth	needed to docu	ment the inc	dicator or	confirm	n the absence of in	ndicators.)
Depth		Matrix		Redo	x Features		-		
(inches)	Color (moist)		Color (moist)	%	Type	Loc ²	Texture	Remarks
0-08	10YR	4/2	100					Sandy Loam	
08-20	10YR	4/2	100					Loamy Sand	
	_								
	-								
-	-								
				educed Matrix, C			Sand G		n: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators:	(Applic	able to all LR	Rs, unless othe	rwise noted	l.)		Indicators for	Problematic Hydric Soils ³ :
Histosol	(A1)			Sandy	Gleyed Matri	ix (S4)		1 cm Muck	(A9) (LRR I, J)
Histic Ep	pipedon (A2	2)		Sandy	Redox (S5)			Coast Prair	ie Redox (A16) (LRR F, G, H)
	stic (A3)			Strippe	d Matrix (S6))		Dark Surfa	ce (S7) (LRR G)
	n Sulfide (A			Loamy	Mucky Miner	ral (F1)		High Plains	Depressions (F16)
Stratified	d Layers (A	5) (LRR F	-)	Loamy	Gleyed Matri	ix (F2)			outside of MLRA 72 & 73)
	ick (A9) (LF				d Matrix (F3			Reduced V	
	d Below Da		e (A11)		Dark Surface				t Material (TF2)
	ark Surface				ed Dark Surfa				ow Dark Surface (TF12)
	lucky Miner				Depressions			the second se	lain in Remarks)
	and the second se		S2) (LRR G, I		ains Depress				vdrophytic vegetation and
5 cm Mu	icky Peat or	r Peat (S	3) (LRR F)	(ML	RA 72 & 73	of LRR H)		drology must be present. urbed or problematic.
								arrisos alse	
Restrictive I	Layer (if pr	esent):							<u></u>
Туре:		esent):		-					
Type: Depth (in	ches):		tors observe					Hydric Soil Pre	
Type: Depth (in	ches):		itors observe	ed.					
Type: Depth (inc Remarks: _N	ches): o hydric so		itors observe	ed.					
Type: Depth (ind Remarks: No	ches): o hydric so GY	oil indica	itors observe	ed.					
Type: Depth (ind Remarks: N Remarks: N Wetland Hyd	ches): o hydric so GY drology Inc	oil indica		ed.	(y)			Hydric Soil Pre	
Type: Depth (ind Remarks: N Remarks: N Primary Indice	ches): o hydric so GY drology Inc	oil indica dicators: mum of o		-				Hydric Soil Pre	sent? Yes <u>No</u> No
Type: Depth (ind Remarks: No YDROLO Wetland Hyd Primary Indic Surface	ches): o hydric so GY drology Inc cators (mini	oil indica dicators: mum of o		check all that app Salt Crust	(B11) vertebrates (Hydric Soil Pres	sent? Yes <u>No</u> No <u>M</u>
Type: Depth (ind Remarks: No YDROLO Wetland Hyd Primary Indic Surface	ches): o hydric so GY drology Inc cators (mini Water (A1) iter Table (/	oil indica dicators: mum of o		check all that app Salt Crust	(B11)			Hydric Soil Pres	sent? Yes No Vo
Type: Depth (ind Remarks: N YDROLO Wetland Hyd Primary India Surface High Wa Saturatio	ches): o hydric so GY drology Inc cators (mini Water (A1) iter Table (/	oil indica dicators: mum of o		check all that app Salt Crust Aquatic In Hydrogen	(B11) vertebrates (r (C1)		Hydric Soil Pres	sent? Yes No Vo ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8)
Type: Depth (ind Remarks: N YDROLO Wetland Hyd Primary India Surface High Wa Saturatia Water M	ches): o hydric so GY drology Inc cators (mini Water (A1) oter Table (/ on (A3)	oil indica dicators: mum of o		check all that app Salt Crust Aquatic In Hydrogen	(B11) vertebrates (Sulfide Odor	r (C1) ble (C2)	g Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) (Vegetated Concave Surface (B8) e Patterns (B10)
Type: Depth (ind Remarks: No Primary Indic Surface High Wa Saturatio Saturatio Sedimer	ches): o hydric so GY drology Inc cators (mini Water (A1) iter Table (/ on (A3) larks (B1)	oil indica dicators: mum of o		check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I	(B11) vertebrates (Sulfide Odo on Water Tat	r (C1) ble (C2)) Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (C
Type: Depth (ind Remarks: No Primary Indice Surface High Wa Saturation Saturation Sedimer Drift Dep	ches): o hydric so GY drology Inc cators (mini Water (A1) ater Table (/ on (A3) larks (B1) at Deposits	dicators: mum of o 42) (B2)		check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where	(B11) vertebrates (Sulfide Odo on Water Tab Rhizospheres	r (C1) ble (C2) s on Living	Roots	Hydric Soil Pres	sent? Yes No No Idicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) I Rhizospheres on Living Roots (C e tilled)
Type: Depth (in Remarks: No Primarks: No Wetland Hyu Primary India Surface High Wa Saturatio Vater M Sedimer Drift Dep Algal Ma	ches): o hydric so GY drology Inc cators (mini- Water (A1) hter Table (/ on (A3) larks (B1) nt Deposits posits (B3)	dicators: mum of o 42) (B2)		check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where Presence	(B11) vertebrates (Sulfide Odor on Water Tab Rhizospheres not tilled)	r (C1) ble (C2) s on Living Iron (C4)	g Roots	Hydric Soil Pres	sent? Yes No No Idicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) I Rhizospheres on Living Roots (C a tilled) Burrows (C8)
Type: Depth (inc Remarks: No Remarks: No Primary India Surface High Wa Saturatio Vater M Sedimer Drift Dep Algal Ma Iron Dep	Ches): o hydric so GY drology Inc cators (mini Water (A1) ater Table (/ on (A3) larks (B1) nt Deposits (B3) at or Crust (posits (B5)	dicators: mum of o A2) (B2). B4)		check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where Presence Thin Muck	(B11) vertebrates (Sulfide Odor on Water Tab Rhizospheres not tilled) of Reduced	r (C1) ble (C2) s on Living Iron (C4) 7)	Roots	Hydric Soil Pres	sent? Yes No Ves No Ves No Ves Ves No Ves Ves No Ves
Type: Depth (ind Remarks: No Remarks: No Primary India Surface High Wa Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio	Ches): o hydric so GY drology Inc cators (mini Water (A1) ater Table (/ on (A3) larks (B1) nt Deposits (B3) at or Crust (posits (B5)	oil indica dicators: mum of o A2) (B2) B4) m Aerial I	ne required; c	check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where Presence Thin Muck	(B11) vertebrates (Sulfide Odor on Water Tak Rhizospheres not tilled) of Reduced Surface (C7	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (C a tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2)
Type: Depth (ind Remarks: No Remarks: No Primary Indice Surface High Wa Saturation Saturation Sedimer Drift Dep Algal Ma Iron Dep Inundation Water-S	ches): o hydric so GY drology Inc cators (mini Water (A1) hter Table (/ on (A3) larks (B1) nt Deposits posits (B3) at or Crust (posits (B5) on Visible o tained Leav	oil indica dicators: mum of o A2) (B2) B4) m Aerial I	ne required; c	check all that app Salt Crust Aquatic In Dry-Sease Oxidized I (where Presence Thin Muck Other (Ex	(B11) vertebrates (Sulfide Odor on Water Tak Rhizospheres not tilled) of Reduced Surface (C7	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (Ce a tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5)
Type: Depth (ind Remarks: No Primary Indic Surface High Wa Saturatio Vater M Saturatio Unift Dep Algal Ma Iron Dep Inundatio Water-S Field Obser	ches): o hydric so GY drology Inc cators (mini Water (A1) hter Table (/ on (A3) larks (B1) ht Deposits posits (B3) at or Crust (posits (B5) on Visible o tained Leav vations:	dicators: mum of o A2) (B2) B4) m Aerial I ves (B9)	ne required; c	check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where Presence Thin Muck Other (Ex	(B11) vertebrates (Sulfide Odor on Water Tab Rhizosphere: not tilled) of Reduced s Surface (C7 plain in Rem	r (C1) ble (C2) s on Living Iron (C4) 7)	Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (Ce a tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5)
Depth (ind Remarks: No APPROLO Wetland Hyd Primary India Surface High Wa Saturatio Saturatio Water M Sedimer Drift Dep Algal Ma Iron Dep Inundatio	ches): o hydric so GY drology Inc cators (mini Water (A1) ther Table (/ on (A3) larks (B1) nt Deposits bosits (B3) at or Crust (bosits (B5) on Visible o tained Leav vations: er Present?	dicators: mum of o A2) (B2). B4) on Aerial I ves (B9)	ne required; c magery (B7)	check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where Presence Thin Muck Other (Exp Depth (in	(B11) vertebrates (Sulfide Odor on Water Tak Rhizospheres not tilled) of Reduced Surface (C7 plain in Rem ches):	r (C1) ble (C2) s on Living Iron (C4) 7)	Roots	Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (Ce a tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5)
Type: Depth (int Remarks: No AYDROLO Wetland Hyu Primary India G Surface High Wa Saturatio Vater M Sedimer Drift Dep Algal Ma Iron Dep Inundatio Water-S Field Obser Surface Water	ches): o hydric so GY drology Inc cators (mini Water (A1) ater Table (/ on (A3) larks (B1) at Deposits bosits (B3) at or Crust (bosits (B5) on Visible o tained Leav vations: er Present? Present?	dicators: mum of o (B2) (B2) B4) on Aerial I /es (B9) Y Y	ne required; c magery (B7) es No	check all that app Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized I (where Presence Thin Muck Other (Exp Lepth (in Depth (in	(B11) vertebrates (Sulfide Odor on Water Tak Rhizospheres not tilled) of Reduced Surface (C7 plain in Rem ches): ches):	r (C1) ble (C2) s on Living Iron (C4) 7)		Hydric Soil Pres	sent? Yes No No ndicators (minimum of two required Soil Cracks (B6) Vegetated Concave Surface (B8) Patterns (B10) Rhizospheres on Living Roots (Ca e tilled) Burrows (C8) on Visible on Aerial Imagery (C9) phic Position (D2) utral Test (D5) save Hummocks (D7) (LRR F)

none

Remarks: No evidence of wetland hydrology observed.

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Dat	te:	6/16/2022
Applicant/Owner: MDT		State	Mon	tana	Sampling Poi	nt: DF	-03W
Investigator(s): R Jones, M Hickey	Section, Township, Range:		15	1N	3	3E	
Landform (hillslope, lerrace, etc.). Floodplain	Local relief (concave, conve	x, none): Flat			Slope	(%):4
Subregion (LRR); LRR E	45.840758 Lon	g:		-10	7.597704	atum:	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cl	assific	ation: Not ma	apped	
	ntly disturbed? Are "Norm problematic? (If needed	al Circu , explaii	imstar n any i	nces" p answer	emarks.) resent? Yes rs in Remarks. , important	.)	No
Hydrophytic Vegetation Present? Yes Ves No	Is the Sampled Area					-	

Hydric Soil Present?	Yes 🖌 No	within a Wetland?	Voc V No	
Wetland Hydrology Present?	Yes 🔽 No	within a venana:		
Remarks: PEM wetland located	within wetland cell 3.			

Absolute Domiant Indicator **Dominance Test worksheet** Tree Stratum Plot size (30 Foot Radius) % Cover: Species? Status Number of Dominant Species that are OBL, FACW or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: Sapling/Shrub Stratum Plot size (15 Foot Radius) **Prevalence Index worksheet** Total % Cover of: 17 X1 **OBL** species 20 X 2 FACW species FAC species 0 X 3 15 X4 FACU species Herbaceous Stratum Plot size (5 Foot Radius) **UPL** species 0 X 5 Alopecurus arundinaceus FACW 10 ~ 15 FACU Column Totals 52 Elymus repens **v** 10 FACW Hordeum jubatum \checkmark Prevalence Index = B/A = 15 Puccinellia nuttalliana \checkmark OBL

Hydrophytic Vegetation Indicators 1 OBL Schoenoplectus maritimus 1 - Rapid Test for Hydrophytic Vegetation 1 Schoenoplectus pungens OBL 2 - Dominance Test is >50% ✓ 3 - Prevalence Index is <= 3.0 4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.

Woody Vine Stratum

Plot size (30 Foot Radius)

Percent Bare Ground 48

VEGETATION - Use scientific names of plants

Remarks:

A prevalence index below three and a positive dominance test provide evidence for the presence of a hydrophytic vegetation community.

Yes 🖌 NO

3

4 (B)

(A)

75.0 % (A/B)

Multiply by:

17

40

0

60

0

117

2.25

(B)

(A)

5 - Wetland Non-Vascular Plants

Hydrophytic Vegetation

Present?

Problematic Hydrophytic Vegetation (Explain)

Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.

Profile Desc										7 TR
	inpuon.		to the de	pth neede				or confir	m the absence of	indicators.)
Depth (inches)	Color	Matrix (moist)	%	Color	(moist)	x Feature %	s Type ¹	Loc ²	Texture	Remarks
0-07	2.5Y	3/1	80	7.5YR	4/4	20	C	M	Clay Loam	
J-07	2.51	3/1	80	1.31K	4/4	20	C	IVI	Ciay Loan	
07-20	2.5Y	4/2	100						Sandy Loam	
							_			
-	-		-	-			-			
-			_	-						
			-	_			-	_		
Type: C=Co								ed Sand G		ion: PL=Pore Lining, M=Matrix.
lydric Soil I		s: (Applic	able to a	I LRRs, u					100 m 200	r Problematic Hydric Soils ³ ;
Histosol				Ļ		Bleyed Ma				ck (A9) (LRR I, J)
Black His	oipedon (A	42)				Redox (S5 Matrix (S				airie Redox (A16) (LRR F, G, H) face (S7) (LRR G)
	n Sulfide	(A4)		-		Mucky Mir				ns Depressions (F16)
		A5) (LRR F	-)			Gleyed Ma				H outside of MLRA 72 & 73)
1 cm Mu	ick (A9) (L	RR F, G, I	H)			d Matrix (Reduced	Vertic (F18)
		ark Surfac	e (A11)			Dark Surfa				ent Material (TF2)
	ark Surfac			-		d Dark Su)		llow Dark Surface (TF12)
and the second sec	lucky Min	eral (S1) at or Peat (COL /1 00	ć u		Depressio ains Depre		16)	the second se	plain in Remarks) hydrophytic vegetation and
	and the second se	or Peat (S	and the second second			RA 72 & 1				ydrology must be present,
0.00011010	iony i our	or i our (or		<i>(</i>	(inc					Contraction of the second se
									unless di	sturbed or problematic.
Restrictive L	_ayer (if p	present):				_	-	_	unless di	sturbed of problematic.
Restrictive L Type:	_ayer (if p	oresent):		_				-	uniess di	
Type: Depth (inc	ches):		redoxim	norphic co	oncentratic	ons prese	ent withir	n the dar	Hydric Soil Pr k surface layer.	
Type: Depth (inc Remarks: Co YDROLOG	ches): ommon p GY	prominent		norphic cc	oncentratic	ons prese	ent within	n the dari	Hydric Soil Pr	
Type: Depth (inc Remarks: Co YDROLOO	ches): ommon p GY drology h	prominent					ent within	n the darl	Hydric Soil Pr k surface layer.	resent? Yes <u>No</u> No
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyd	ches): ommon p GY drology h cators (min	prominent ndicators: nimum of o		ed; check a	all that appl	y)	ent within	n the darl	Hydric Soil Pr k surface layer. Secondary	resent? Yes No Indicators (minimum of two required
Type: Depth (inc Remarks: Co YDROLOO YDROLOO Vetland Hyo Primary Indic	ches): ommon p GY drology li cators (min Water (A1	ndicators:		ed; check a	all that appl Salt Crust	y) (B11)		n the dar	Hydric Soil Pr k surface layer. Secondary	resent? Yes No Indicators (minimum of two required e Soil Cracks (B6)
Type: Depth (inc temarks: Co YDROLOO Vetland Hyo rimary Indic Surface V Y High Wa	ches): ommon p GY drology h cators (min Water (A1 iter Table	ndicators:		ed; check a	all that appl Salt Crust Aquatic Inv	y) (B11) vertebrate	es (B13)	n the dar	Hydric Soil Pr k surface layer. Secondary	resent? Yes No Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8)
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyd Primary Indic Contract Market G High Wa C Saturatio	ches): ommon p GY drology h cators (min Water (A1 iter Table	ndicators: nímum of o 1) (A2)		ed; check a	all that appl Salt Crust	y) (B11) vertebrate Sulfide Or	s (B13) dor (C1)		Hydric Soil Pr k surface layer. Secondary Surfac Sparse Draina	resent? Yes No No Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10)
Type: Depth (inc Remarks: Co YDROLOO YOROLOO Vetland Hyd Yormary Indic Surface V G High Wa Saturatio Water Ma	ches): ommon p GY drology li cators (min cators (ndicators: nimum of o 1) (A2)		ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen	y) (B11) vertebrate Sulfide Od n Water 1	es (B13) dor (C1) Fable (C2)	Hydric Soil Pr k surface layer. Secondary Surfac Sparse Draina Oxidize	resent? Yes No No Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10)
Type: Depth (inc Remarks: Co YDROLOO YDROLOO Vetland Hyd Primary Indic Surface V High Wa Saturatio Water Ma Sedimen	ches): ommon p GY drology li cators (min Water (A1 iter Table on (A3) arks (B1)	orominent ndicators: nimum of o 1) (A2) s (B2)		ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate Sulfide Od n Water 1	s (B13) dor (C1) Fable (C2 res on Liv)	Hydric Soil Pr k surface layer. Secondary Surfac Sparse Draina Oxidize s (C3) (whe	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C
Type: Depth (inc Remarks: Co YDROLOO YDROLOO Yottand Hyo Primary Indic Contract No Contract No C	GY drology In cators (min Water (A1 ther Table on (A3) arks (B1) at Deposit posits (B3) at or Crust	ndicators: nímum of o 1) (A2) s (B2)) t (B4)		ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence	y) (B11) vertebrate Sulfide O n Water 1 Rhizosphe not tilled) of Reduce	s (B13) dor (C1) fable (C2 res on Liv ed Iron (C) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Sparse Draina Cxidize s (C3) (whe Crayfis Satura	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9)
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyce Primary Indic Surface V Primary Indic Primary Indic Surface V Primary Indic Surface V Primary Indic Surface V Primary Indic Primary Indic Primary Indic Surface V Primary Indic Primary	GY drology In cators (min water (A1 iter Table on (A3) arks (B1) at Deposit bosits (B3) at or Crust posits (B5)	ndicators: nimum of o 1) (A2) s (B2)) t (B4)	ne require	ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck	y) (B11) vertebrate Sulfide O n Water 1 Rhizosphe not tilled) of Reduce Surface (es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7)) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) ely Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2)
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyc Primary Indic Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio	GY drology In cators (min Water (A1 cators (Min Water (A1 cators (B1) int Deposit posits (B3) int Deposits (B3) on Crust posits (B5) pon Visible	ndicators: nimum of o 1) (A2) s (B2)) t (B4)) on Aerial I	ne require	ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence	y) (B11) vertebrate Sulfide O n Water 1 Rhizosphe not tilled) of Reduce Surface (es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7)) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) leutral Test (D5)
Type: Depth (inc Remarks: Co YDROLOO YDROLOO Vetland Hyd Primary Indic Drimary Indic Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatic Water-St	GY drology In cators (min Water (A1 marks (B1) arks (B1) arks (B3) arks (B3) at or Crust posits (B3) at or Crust posits (B5) pon Visible tained Lea	ndicators: nimum of o 1) (A2) s (B2)) t (B4)	ne require	ed: check a	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck	y) (B11) vertebrate Sulfide O n Water 1 Rhizosphe not tilled) of Reduce Surface (es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7)) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) ely Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2)
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyo Primary Indic Surface V Aligh Water Ma Saturatio Water Ma Saturatio Water Ma Saturatio High Water Ma Saturatio Water Ma Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatic Water-St Field Observ	GY drology II cators (min Water (Art ther Table on (A3) arks (B1) arks (B1) arks (B3) arks (B3) at or Crust posits (B3) on Visible tained Leav vations:	ndicators: nímum of o 1) (A2) s (B2)) t (B4)) on Aerial I aves (B9)	ne requir	ed; check ;	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck Other (Exp	y) (B11) vertebrate Sulfide Oo n Water 1 Rhizosphe not tilled) of Reduce Surface (blain in Re	es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7)) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) leutral Test (D5)
Depth (inc Remarks: Co YDROLOO Wetland Hyd Crimary Indic Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Water-St Field Observ Surface Water	GY drology In cators (min Water (A1 iter Table on (A3) larks (B1) it Deposit bosits (B3) at or Crust bosits (B5) on Visible tained Leavier vations: er Presen	ndicators: nimum of o 1) (A2) s (B2)) t (B4)) on Aerial I aves (B9) t? Y	me requir magery ()	ed: check :	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck Other (Exp	y) (B11) vertebrate Sulfide Ou n Water 1 Rhizosphe not tilled) of Reduce Surface (olain in Re	es (B13) dor (C1) Fable (C2 res on Lived Iron (C (C7) emarks)) ving Roots	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) leutral Test (D5)
Type: Depth (inc Remarks: Co YDROLOO Wetland Hyo Primary Indic Surface V High Wa Saturatio Water Ma Sedimen Drift Dep Algal Ma Iron Dep Inundatio Water-St Field Observ Surface Wate Nater Table I	GY drology In cators (min Water (A1 marks (B1) marks (B1) marks (B1) marks (B3) marks (B3) marks (B5) posits (B5	ndicators: nimum of o 1) (A2) s (B2)) t (B4)) on Aerial I aves (B9) t? Y	ne require magery (l es es	ed: check :	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck Other (Exp	y) (B11) vertebrate Sulfide Ou n Water 1 Rhizosphe not tilled) of Reduce Surface (Dain in Re ches): ches):	es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7) emarks)) ving Roots 4)	Hydric Soil Pr k surface layer. Secondary Surfac Sparse Draina Cxidize S (C3) (whe Crayfis Satura Geome FAC-N Frost-H	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) leutral Test (D5) Heave Hummocks (D7) (LRR F)
Type: Depth (inc Remarks: Co YDROLOO Vetland Hyo Primary Indic Surface V Primary Indic Surface V High Wa Saturatio Vater M Sedimen Drift Dep Algal Ma Iron Dep Inundatic Water-St Field Observ Surface Water	GY drology In cators (min Water (A1 cators (min Water (A1 cators (B3) arks (B1) int Deposit bosits (B3) at or Crust bosits (B3) on Visible tained Lea vations: er Present?	ndicators: nimum of o 1) (A2) s (B2)) t (B4)) on Aerial I aves (B9) t? Y Y	me requir magery ()	ed: check :	all that appl Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence Thin Muck Other (Exp	y) (B11) vertebrate Sulfide Ou n Water 1 Rhizosphe not tilled) of Reduce Surface (Dain in Re ches): ches):	es (B13) dor (C1) Fable (C2 res on Liv ed Iron (C (C7) emarks)) ving Roots 4)	Hydric Soil Pr k surface layer. Secondary Surfac Surfac Sparse Draina Oxidize s (C3) (whe Crayfis Satura Satura V Geomo	Indicators (minimum of two required e Soil Cracks (B6) aly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C: ere tilled) sh Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) leutral Test (D5) Heave Hummocks (D7) (LRR F)

marks: High water table recorded at a depth of 11 inches after 20 minutes. Soil saturation to the surface, salt crusts, and oxidized rhizospheres along living roots also indicate wetland hydrology at this data point.

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Da	ate:	6/16/2022
Applicant/Owner: MDT		State	Mon	tana	Sampling Po	oint: D	P04U
Investigator(s): R Jones, M Hickey	Section, Township, Range:		15	1N		33E	
Landform (hillslope, terrace, etc.): Floodplain	Local relief (concave, conve	x, none) Fla	t		Slope	e (%):5
Subregion (LRR): LRR E	45.839637 Lon	g:	_	-10	7.597182	Datum	NAD 83
Soil Map Unit Name: Kw: Kyle clay, saline			NWI c	lassific	ation: Not m	appeo	k
	tly disturbed? Are "Norm problematic? (If needed,	al Circu explaii	imstai n any	nces" p answei	emarks.) resent? Yes rs in Remarks , importar	s.)	No
Hydrophytic Vegetation Present? Yes No _	- Is the Sampled Area						

Designation					-
Wetland Hydrology Present?	Yes	No 🗸	Within a Welland.		
Hydric Soil Present?	Yes	No 🗸	within a Wetland?	Yes No	
· · · · · · · · · · · · · · · · · · ·			is the sampled Area		

Remarks: Upland sample point adjacent to DP04w and wetland cell 4.

VEGETATION - Use scientific names of	of plant	S			
	bsolute 6 Cover:	Domiant Species?	Indicator Status	Dominance Test worksheet	
	00001.	openeo:		Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
				Total Number of Dominant Species Across All Strata:	1 (B)
Sapling/Shrub Stratum Plot size (15 Foot I	Radius)			Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
	,			Prevalence Index worksheet Total % Cover of: OBL species 0 X 1 FACW species 0 X 2 FAC species 1 X 3	Multiply by: 0 0 3
Herbaceous Stratum Plot size (5 Foot I	Radius)			FACU species 1 X 4	4
Bromus japonicus	50		NL	UPL species 58 X 5	290
Elymus hispidus	8		NL	Column Totals 60 (A)	297 (B)
Lepidium perfoliatum	1		FAC	Prevalence Index = B/A =	4.95
Schedonorus pratensis	1		FACU	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophyti 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.	ic Vegetation 0 s (Provide r on separate ants
Woody Vine Stratum Plot size (30 Foot	Radius)			Problematic Hydrophytic Veg Indicators of hydric sil and wetland hydric sil and wetland hydric sil and wetland hydric sil and wetland hydrophytema	drology must be
Percent Bare Ground 40 Remarks:				Hydrophytic Vegetation Yes	NO 🗹

No evidence for a hdrophytic vegetation community observed.

OIL										Sampling Point: DP04U
Profile Des	scription: (Describe	to the de	pth neede	d to docu	ment the i	indicator	or confi	irm the absence of in	ndicators.)
Depth	Calar	Matrix	%	Calar		x Feature		Loc ²	Taulura	Demode
(inches)		(moist)			(moist)	%	Type		Texture	Remarks
0-06	10YR	4/2	99	7.5YR	4/4	1	С	Μ	Clay Loam	
06-14	10YR	4/2	100						Sandy Clay Loam	Many cobbles throughout.
14+									Cobble bottom	
			-	_						
				-						
			-	-		_				
Type: C=(Concentratio	on D=Den	letion RM	=Reduce	Matrix C	S=Covere	d or Coat	ed Sand	Grains ² Locatio	n: PL=Pore Lining, M=Matrix.
	il Indicators							Su Sund		Problematic Hydric Soils ² :
Histos	ol (A1)]	Sandy	Gleyed Ma	atrix (S4)		1 cm Muck	(A9) (LRR I, J)
	Epipedon (A	(2)				Redox (S5				ne Redox (A16) (LRR F, G, H)
Black I	Histic (A3)				Strippe	d Matrix (S	56)		Dark Surfa	ce (S7) (LRR G)
Hydrog	gen Sulfide	(A4)			Loamy	Mucky Min	neral (F1))		Depressions (F16)
	ed Layers (/			-		Gleyed M				outside of MLRA 72 & 73)
	Muck (A9) (L					ed Matrix (Reduced V	
	ed Below D		e (A11)	-		Dark Surfa	1 million (1997)			t Material (TF2)
	Dark Surface			-		ed Dark Su		()		ow Dark Surface (TF12)
	Mucky Mine			5 at 8	and the second se	Depressio		-101-		lain in Remarks)
	Mucky Pea	1				ains Depre				ydrophytic vegetation and
5 cm N	Aucky Peat	or Peat (S	3) (LRR F)	(ML	RA 72 &	73 of LR	RH)		drology must be present.
Doctrictive	e Layer (if p	racontly	_			_	_	_	uniess dist	urbed ör problematic.
	e Layer (ii p	resentj.								
Type: _				_					11-12-2-11-2	sent? Yes No 🗸
	inches):			-					Hydric Soil Pres	sent? Yes <u> </u>
YDROL		ар с с.							nough to qualify fo	
	lydrology In	idicators:	2							
Primary Inc	dicators (min	nimum of o	ne require	d; check	all that app	ly)			Secondary Ir	dicators (minimum of two required
	e Water (A1				Salt Crust					Soil Cracks (B6)
	Vater Table				Aquatic In	a far and a set of	s (B13)		and the second states of	Vegetated Concave Surface (B8)
	tion (A3)	(/ 12/			Hydrogen		A COLORADO AND AND A			e Patterns (B10)
_	Marks (B1)			H		on Water 1		1		Rhizospheres on Living Roots (C
	ent Deposits	s (B2)			Oxidized I		and the second second	A	the state of the second second second second	e tilled)
	eposits (B3)					not tilled)		ving noo		Burrows (C8)
	Mat or Crust				Presence			av		on Visible on Aerial Imagery (C9)
	eposits (B5)			H	Thin Much			~).	the second se	phic Position (D2)
			magazi /l	271		A				
	ation Visible		magery (i	ы) <u>п</u>	Other (Ex	plain in Re	marks)			utral Test (D5)
and the second	Stained Lea	aves (B9)				_			Frost-He	ave Hummocks (D7) (LRR F)
	ervations:	2 6	S n		Service for					
	ater Present	7 · · · · ·	es 🛄	No_	_ Depth (in					
	le Present?	Y	es	No 🗸	_ Depth (in					
Saturation includes c	Present? apillary fring		es	No 🗸	_ Depth (in	ches):		W	etland Hydrology Pr	esent? Yes No No
			gauge, n	nonitoring	well, aerial	photos, pr	evious in	spections	s), if available:	
Remarks	No evidenc	e of wetla	and hydr	ology obs	served after	er careful	inspect	ion.		

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Da	te:	6/16/2022
Applicant/Owner: MDT		State	Mon	tana	Sampling Po	int: DF	P04W
Investigator(s): R Jones, M Hickey	Section, Township, Range:15			1N	33E		
Landform (hillslope, terrace, etc.). Floodplain	_ Local relief (concave, conve	Local relief (concave, convex, none): Undulatin			ngSlope (%): 07.597107 Datum: NAD 83		(%): 9
Subregion (LRR): LRR E Lat:	45.83976 Long: -1			-10			NAD 83
Soil Map Unit Name: Kw: Kyle clay, saline			NWI c	assific	ation: Not ma	apped	
Are climatic / hydrologic conditions on the site typical for this time of y	/ear? Yes 🔽 No 🗌	(If no,	expla	in in R	emarks.)		
Are Vegetation, Soil, or Hydrology significantl	ly disturbed? Are "Norm	al Circu	mstar	nces" p	resent? Yes		No
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed,	explain	n any	answer	rs in Remarks	.)	
SUMMARY OF FINDINGS - Attach site map showin	g sampling point locat	ions,	trans	sects	, importan	t feat	ures, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area	1	7				

Hydric Soil Present?	Yes V No	within a Wetland?	Voc V No	
Wetland Hydrology Present?	Yes 🔽 Na	within a wetand?		
Remarks: DEM wotland located	within watland call 4	1		_

Remarks: PEM wetland located within wetland cell 4.

VEGETATION - Use scientific names of plant	ts	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
<u> </u>		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 10 X 1 10
		FACW species 65 X 2 130
		FAC species 5 X 3 15
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 0 X 4 0
Alopecurus arundinaceus 30	✓ FACW	UPL species 0 X 5 0
Eleocharis palustris 5	OBL	Column Totals 80 (A) 155 (B)
Iva axillaris 5	☐ FAC	Prevalence Index = B/A = 1.94
Juncus balticus 10	FACW	Hydrophytic Vegetation Indicators
Juncus torreyi 25	FACW	1 - Rapid Test for Hydrophytic Vegetation
Typha angustifolia 5	OBL	\checkmark 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 20		Hydrophytic Vegetation Present? Yes ✔ NO

Remarks:

A positive dominance test and a prevalence index below three indicate the presence of a hydrophytic vegetation community.

		Matrix				x Features	5		
inches)	Color (m	noist)	%	Color	(moist)	_%	Type ¹	Loc	
)-08	10YR	4/2	90	5Y	3/4	10	С	Μ	Sandy Clay Loam
)8-16	2.5Y	4/2	98	7.5YR	3/4	2	С	Μ	Sandy Clay Loam
			_	_		_			
_				-			_		<u></u>
	-			-				-	
	oncentration. Indicators:							ed Sand	d Grains. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ² ;
Histosol	(A1)				Sandy C	Sleyed Ma	trix (S4)		1 cm Muck (A9) (LRR I, J)
	pipedon (A2)	e		1		Redox (S5			Coast Prairie Redox (A16) (LRR F, G, H)
	istic (A3)			[Matrix (S			Dark Surface (S7) (LRR G)
Hydroge	en Sulfide (A			[Mucky Mir)	High Plains Depressions (F16)
	d Layers (A5)			Gleyed Ma	and the second sec		(LRR H outside of MLRA 72 & 73)
1 cm Mu	uck (A9) (LR	R F, G, H	1)	-		d Matrix (I			Reduced Vertic (F18)
	d Below Dark	a service and a service of the	(A11)			Dark Surfa			Red Parent Material (TF2)
	ark Surface (d Dark Su		7)	Very Shallow Dark Surface (TF12)
	Aucky Minera			200		Depression			Other (Explain in Remarks)
	Mucky Peat c		1 1 K			ains Depre			³ Indicators of hydrophytic vegetation and
5 cm Mu	cky Peat or	Peat (S3) (LRR F)	(ML	RA 72 & 7	3 of LR	RH)	wetland hydrology must be present, unless disturbed or problematic.
estrictive l	Layer (if pre	sent):						_	
Type:									Standing of a series of the series of the
	-6.6-5.4m								
Depth (in Remarks: P	rominent re	doximo	rphic co	ncentratio	ons comm	on within	the dep	oleted r	Hydric Soil Present? Yes <u>V</u> No matrix.
(emarks: P	rominent re	doximo	rphic co	ncentratio	ons comm	on within	the dep	oleted r	
temarks: P	rominent re		rphic co	ncentratio	ons comm	on within	the dep	oleted r	
YDROLO	rominent re GY drology Indi	icators:					the dep	oleted r	matrix.
Remarks: P YDROLO Vetland Hy	GY drology Indi cators (minin	icators:			all that apply	y)	the dep	oleted r	natrix. Secondary Indicators (minimum of two require
YDROLO Vetland Hy	rominent re GY drology Indi	icators:			all that apply	γ) (B11)		oleted r	matrix.
YDROLO YDROLO Vetland Hyo Primary India Surface High Wa	rominent re GY drology Indi cators (minim Water (A1) ater Table (A	icators: num of or			all that apply Salt Crust Aquatic Inv	y) (B11) vertebrate	s (B13)	bleted r	natrix. Secondary Indicators (minimum of two require
YDROLO YDROLO Vetland Hyo Primary India Surface High Wa	rominent re GY drology Indi cators (minim Water (A1) ater Table (A	icators: num of or			all that apply Salt Crust Aquatic Inv Hydrogen	y) (B11) vertebrate Sulfide Od	s (B13) dor (C1)		Secondary Indicators (minimum of two required
YDROLO YDROLO Vetland Hyn Yrimary Indio Surface High Wa Saturatio	rominent re GY drology Indi cators (minim Water (A1) ater Table (A	icators: num of or			all that apply Salt Crust Aquatic Inv	y) (B11) vertebrate Sulfide Od	s (B13) dor (C1)		Secondary Indicators (minimum of two required Surface Soil Cracks (B6)
YDROLO YDROLO Vetland Hy Primary India Surface High Wa Saturatio Water M	rominent re GY drology Indi cators (minin Water (A1) ater Table (A on (A3)	icators: num of or 2)		ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen	y) (B11) vertebrate Sulfide Od n Water T	s (B13) dor (C1) able (C2)	Matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Cxidized Rhizospheres on Living Roots (C
Remarks: P YDROLO Vetland Hy Primary India Surface High Wa Saturation Water M Sedimer	rominent re GY drology Indi cators (minim Water (A1) ater Table (A: on (A3) larks (B1)	icators: num of or 2)		ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate Sulfide Od n Water T	s (B13) dor (C1) able (C2)	Matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Cxidized Rhizospheres on Living Roots (C
Primary India Primary India Surface High Wa Saturatia Saturatia Saturatia Saturatia Dift Dep	rominent re GY drology Indi cators (minim Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (icators: num of or 2) B2)		ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate Sulfide Od n Water T thizosphe not tilled)	s (B13) dor (C1) able (C2 res on Li	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Cots (C3)
YDROLO YDROLO Yetland Hyp Primary India Surface High Wa Saturatia Water M Sedimer Drift Der Algal Materia	GY drology Indi cators (minim Water (A1) ater Table (A on (A3) larks (B1) nt Deposits (posits (B3)	icators: num of or 2) B2)		ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r	y) (B11) vertebrate Sulfide Od n Water T chizosphe not tilled) of Reduce	s (B13) for (C1) able (C2 res on Li d Iron (C	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Cots (C3) (where tilled) Crayfish Burrows (C8)
YDROLO YDROLO Yetland Hyn Primary India Surface High Wa Saturation Water M Sedimer Drift Deg Algal Materia Iron Deg	rominent re GY drology Indi cators (minin Water (A1) ater Table (A on (A3) larks (B1) nt Deposits (D posits (B3) at or Crust (B	icators: num of or 2) B2) B2)	ne require	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence o	y) (B11) vertebrate Sulfide Od n Water T Rhizosphe not tilled) of Reduce Surface (s (B13) dor (C1) able (C2 res on Li d Iron (C C7)	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Cots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
YDROLO Yetland Hyu Yimary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati	drology Indi cators (minim Water (A1) ater Table (A. on (A3) larks (B1) nt Deposits (I posits (B3) at or Crust (B posits (B5)	icators: num of or 2) B2) B2) B4) 1 Aerial Ir	ne require	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck	y) (B11) vertebrate Sulfide Od n Water T Rhizosphe not tilled) of Reduce Surface (s (B13) dor (C1) able (C2 res on Li d Iron (C C7)	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Conception) Oxidized Rhizospheres on Living Roots (Conception) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
YDROLO YDROLO Vetland Hy Yrimary India Surface High Wa Saturatio Saturatio Sedimer Drift Dep Algal Ma Iron Dep Inundati Water-S	GY drology Indi cators (minim Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) on Visible on stained Leave	icators: num of or 2) B2) B2) B4) 1 Aerial Ir	ne require	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck	y) (B11) vertebrate Sulfide Od n Water T Rhizosphe not tilled) of Reduce Surface (s (B13) dor (C1) able (C2 res on Li d Iron (C C7)	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
YDROLO YDROLO Vetland Hyp Primary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Water-S Sield Obser	GY drology Indi cators (minim Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) on Visible on stained Leave	icators: num of or 2) B2) B2) B4) 1 Aerial Ir	ne require magery ()	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck	y) (B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (olain in Re	s (B13) dor (C1) able (C2 res on Li d Iron (C C7)	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
YDROLO YDROLO Yetland Hyn Ymmary India Surface High Wa Saturation Water M Sedimer Drift Deg Algal Mat Iron Deg Inundati Water-S Sield Obser	rominent re GY drology Indi cators (minim Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (I posits (B3) at or Crust (B posits (B5) on Visible on itained Leave vations: er Present?	icators: num of or 2) B2) B2) B4) A Aerial In es (B9) Ye	ne require magery ()	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp	y) (B11) vertebrate Sulfide Od n Water T (hizosphe not tilled) of Reduce Surface (blain in Re	s (B13) dor (C1) able (C2 res on Li d Iron (C C7)	2) ving Roo	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
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YDROLO YDROLO Yetland Hyp Primary India Surface High Wa Saturation Water M Sedimer Drift Dep Algal Mathematical Iron Dep Inundati Water-S Field Obser Surface Water Saturation P Includes cap	rominent re GY drology Indi cators (minim Water (A1) ater Table (A. on (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B5) on Visible on itained Leave vations: er Present? Present? pillary fringe)	icators: num of or 2) B2) B4) A Aerial Ir es (B9) Ye Ye Ye	nagery (1 es es	ed: check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized F (where r Presence of Thin Muck Other (Exp Depth (ind Depth (ind	y) (B11) vertebrate Sulfide Od n Water T Rhizosphe not tilled) of Reduce Surface (blain in Re Surface): ches): ches):	s (B13) dor (C1) able (C2 res on Li d Iron (C C7) marks) 2	2) ving Roo 24)	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
YDROLO Yetland Hy rimary India Surface High Wa Saturation Sedimer Drift Deg Algal Ma Iron Deg Inundati Water S ield Obser Surface Water Vater Table Saturation P ncludes cap Describe Re	rominent re GY drology Indi <u>cators (minin</u> Water (A1) ater Table (A. on (A3) harks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) on Visible on itained Leave vations: er Present? Present? Present? pillary fringe) corded Data	icators: num of or 2) B2) B2) A Aerial Ir es (B9) Ye Ye Ye	nagery () es es gauge, n	ed; check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp Depth (ind Depth (ind well, aerial p	(B11) vertebrate Sulfide Od n Water T Phizosphe not tilled) of Reduce Surface (olain in Re ches): ches): ches):	s (B13) for (C1) Table (C2 res on Li d Iron (C C7) marks) 2 evious in	2) ving Roo 24) 24) spectior	matrix. Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8 Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F) Wetland Hydrology Present? Yes No ns), if available:
emarks: P (DROLO /etland Hy rimary India Surface High Wa Saturatia Water M Sedimer Drift Dep Algal Ma Iron Dep Inundati Water-S ield Obser urface Water /ater Table aturation P ncludes cap escribe Rei	rominent re GY drology Indi <u>cators (minin</u> Water (A1) ater Table (A. on (A3) harks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) on Visible on itained Leave vations: er Present? Present? Present? pillary fringe) corded Data	icators: num of or 2) B2) B2) A Aerial Ir es (B9) Ye Ye Ye	nagery () es es gauge, n	ed; check a	all that apply Salt Crust Aquatic Inv Hydrogen Dry-Seaso Oxidized R (where r Presence of Thin Muck Other (Exp Depth (ind Depth (ind well, aerial p	(B11) vertebrate Sulfide Od n Water T Phizosphe not tilled) of Reduce Surface (olain in Re ches): ches): ches):	s (B13) for (C1) Table (C2 res on Li d Iron (C C7) marks) 2 evious in	2) ving Roo 24) 24) spectior	Secondary Indicators (minimum of two required Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Co ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)

Project/Site: JTX Tunnicliff	City/County: Big Horn		Sampling Date:	6/16/2022
Applicant/Owner. MDT	State	Montana	Sampling Point:	DP05U
Investigator(s): R Jones, M Hickey	_ Section, Township, Range:	15 1N	I 33E	
Landform (hillslope, terrace, etc.). Floodplain	_ Local relief (concave, convex, none): Flat	Slop	e (%): 0
Subregion (LRR): LRR E Lat:	45.838714 Long:	-1(07.596856 Datum	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet	1	WI classific	ation: Not mappe	d
Are Vegetation, Soil, or Hydrology naturally p	lly disturbed? Are "Normal Circu problematic? (If needed, explain	n any answe	oresent? Yes _	No
SUMMARY OF FINDINGS – Attach site map showin Hydrophytic Vegetation Present? Yes No		transects	, important fea	itures, etc.
Hydric Soil Present? Yes No V	Is the Sampled Area	342 - F		

Hydric Soil Present?	Yes No 🗸	within a Wetland?	Yes No V
Wetland Hydrology Present?	Yes No 🗸	within a wetrand?	
Remarke			

Remarks: Upland sample point adjacent to DP05w and wetland cell 5.

VEGETATION - Use scientific names of plants	
<u>Tree Stratum</u> Plot size (30 Foot Radius) Absolute Domiant Indicator % Cover: Species? Status	Dominance Test worksheet
	Number of Dominant Species that are OBL, FACW or FAC: 0 (A)
	Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species 0.0 % (A/B)
	Prevalence Index worksheet
	Total % Cover of: Multiply by:
	OBL species 0 X 1 0
	FACW species 1 X 2 2
	FAC species 0 X 3 0
Herbaceous Stratum Plot size (5 Foot Radius)	FACU species 35 X 4 140
Bromus inermis 10 UPL	UPL species 34 X 5 170
Elymus hispidus 24 V NL	Column Totals 70 (A) 312 (B)
Equisetum hyemale 1 🗌 FACW	Prevalence Index = B/A = 4.46
Pascopyrum smithii 5 🗌 FACU	Hydrophytic Vegetation Indicators
Poa pratensis 20 🔽 FACU	1 - Rapid Test for Hydrophytic Vegetation
Schedonorus pratensis 10 🗌 FACU	□ 2 - Dominance Test is >50%
	☐ 3 - Prevalence Index is <= 3.0
	4 - Morphological Adaptations (Provide
	supporting data in remarks or on separate sheet.
	5 - Wetland Non-Vascular Plants
	Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)	Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 30	Hydrophytic Vegetation Present? Yes NO
Remarke	

Remarks:

No evidence for a hydrophytic plant community observed.

Profile Des									Sampling Point: DP05U
	scription: (De	scribe to	the depth n	eeded to docur	ment the in	ndicator	or confirm	m the absence of	f indicators.)
Depth	N	Natrix		Redo	x Features		1.1.1.1		
(inches)	Color (m	oist)	% (Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-07	10YR 4	4/2	100					Clay Loam	
07-16	2.5Y 4	4/3	100					Clay Loam	
		_	==		=	=			
		_			_	_	_		
				duced Matrix, CS			d Sand G		tion: PL=Pore Lining, M=Matrix.
Hydric Soi	Indicators: ((Applicat	ole to all LRF	ts, unless other	rwise note	d.)		Indicators fo	or Problematic Hydric Soils ³ :
Black H Hydrog Stratifie 1 cm N Deplete Thick I Sandy 2.5 cm N	ol (A1) Epipedon (A2) Histic (A3) gen Sulfide (A4 ed Layers (A5) Muck (A9) (LRF ed Below Dark Dark Surface (/ Mucky Mineral Mucky Peat or Mucky Peat or F	e) (LRR F) R F, G, H) (Surface (A12) I (S1) r Peat (S2) Peat (S3)	(A11) 2) (LRR G, H	Sandy F	Gleyed Ma Redox (S5) d Matrix (S Mucky Min Gleyed Ma d Matrix (F Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa no Depression ains Depre RA 72 & 7) eral (F1) trix (F2) 53) ce (F6) fface (F7) ns (F8) ssions (F	16)	Coast Pr Dark Sur High Pla (LRR Reduced Red Part Very Sha Other (E ³ Indicators of wetland I	ck (A9) (LRR I, J) rainie Redox (A16) (LRR F, G, H) rface (S7) (LRR G) ins Depressions (F16) H outside of MLRA 72 & 73) d Vertic (F18) ent Material (TF2) allow Dark Surface (TF12) xplain in Remarks) r hydrophytic vegetation and hydrology must be present, isturbed or problematic.
	Layer (II pres	senu							
Type: Depth (i	nches):	l indicato	ors observed	 d.				Hydric Soil P	resent? Yes <u>No</u> No
Type: Depth (ii Remarks: p	nches): No hydric soil	lindicato	ors observed	d.				Hydric Soil P	resent? Yes <u>No</u> V
Type: Depth (ii Remarks: p	nches): No hydric soil DGY		ors observed	d.				Hydric Soil P	resent? Yes <u>No</u> No
Type: Depth (i Remarks: p YDROL(Wetland H	nches): No hydric soil OGY ydrology India	cators:							
Type: Depth (in Remarks: p YDROL(Wetland H Primary Ind	nches): No hydric soil DGY ydrology India dicators (minim	cators:		eck all that appl	1			Secondary	Indicators (minimum of two required
Type: Depth (i Remarks: p YDROL(Wetland H Primary Ind Surface G Surface High W Satural Water	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3) Marks (B1)	cators: ium of one 2)			(B11) vertebrate: Sulfide Od	lor (C1)		Secondary	
Type: Depth (ii Remarks: p YDROL(YOROL(Wetland H Primary Ind Surface J Surface J Surface Satural Satural Water Sedime Drift De	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3)	cators: ium of one 2) 32)		eck all that appl Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F	(B11) vertebrate: Sulfide Oc on Water T Rhizospher not tilled)	lor (C1) able (C2) res on Liv	-	Secondary Surfac Spars Draina Oxidiz (C3) (who	/ Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10)
Type: Depth (i Remarks: p YDROL(Vetland H Primary Ind Surface Satural Satura S	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3) Marks (B1) ent Deposits (B3)	cators: ium of one 2) 32) 4) Aerial Im:	e required; ch	eck all that appl Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where r	(B11) vertebrates Sulfide Oc on Water T Rhizospher not tilled) of Reduce Surface (0	lor (C1) able (C2) res on Liv d Iron (C4 C7)	-	Secondary Surfac Spars Draina Oxidiz (C3) (wh Crayfi Satura Geom FAC-N	/ Indicators (minimum of two required be Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) red Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8)
Type: Depth (i Remarks: p YDROL(Wetland H Primary Ind Surface Surf	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3) Marks (B1) ent Deposits (B1) ent Deposits (B3) Mat or Crust (B4 eposits (B5) tion Visible on Stained Leave	cators: ium of one 2) 32) 4) Aerial Im:	e required; ch	eck all that appl Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where n Presence Thin Muck	(B11) vertebrates Sulfide Oc on Water T Rhizospher not tilled) of Reduce Surface (0	lor (C1) able (C2) res on Liv d Iron (C4 C7)	-	Secondary Surfac Spars Draina Oxidiz (C3) (wh Crayfi Satura Geom FAC-N	v Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Type: Depth (ii Remarks: p YDROLO Wetland High Wetland High Surface J Surface Sedime Sedime Drift De Algal M Iron De Inunda Water- Field Obse	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3) Marks (B1) ent Deposits (B1) ent Deposits (B3) Mat or Crust (B4 eposits (B5) tion Visible on Stained Leave	cators: ium of one 2) 32) 4) Aerial Im:	e required; ch agery (B7)	eck all that appl Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where n Presence Thin Muck	(B11) vertebrates Sulfide Oo on Water T Rhizospher not tilled) of Reduce Surface (0 blain in Rei	lor (C1) able (C2) res on Liv d Iron (C4 C7)	-	Secondary Surfac Spars Draina Oxidiz (C3) (wh Crayfi Satura Geom FAC-N	v Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Type: Depth (ii Remarks: p PyDROLC Wetland High Wetland High W Surface High W Satural Sa	nches): No hydric soil OGY ydrology India dicators (minim e Water (A1) Vater Table (A2 tion (A3) Marks (B1) ent Deposits (B eposits (B3) Mat or Crust (B4 eposits (B5) dion Visible on Stained Leave ervations:	cators: ium of one 2) 32) 4) Aerial Im: s (B9)	agery (B7)	eck all that appl Salt Crust Aquatic In Hydrogen Dry-Seasc Oxidized F (where i Presence Thin Muck Other (Exp	(B11) vertebrates Sulfide Oc on Water T Rhizospher not tilled) of Reduce Surface (f blain in Rei ches):	lor (C1) able (C2) res on Liv d Iron (C4 C7)	-	Secondary Surfac Spars Draina Oxidiz (C3) (wh Crayfi Satura Geom FAC-N	v Indicators (minimum of two required ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)

Remarks No evidence of wetland hydrology observed.

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling D	ate:	6/16/2	022
Applicant/Owner. MDT		State	Mont	tana	Sampling P	oint: _	P05W	
Investigator(s): R Jones, M Hickey	Section, Township, Range: _		15	1N		33E		
Landform (hillslope, lerrace, etc.). Floodplain	_ Local relief (concave, conve	x, none): Flat			Slop	e (%):	2
Subregion (LRR); LRR E Lat:	45.838791 Long	g:		-10	7.596972	Datun	NAD 8	3
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cl	assific	ation: Not n	nappe	d	
Are climatic / hydrologic conditions on the site typical for this time of y					emarks.)			_
Are Vegetation, Soil, or Hydrology significantl	y disturbed? Are "Norma	al Circu	umstan	ices" p	resent? Ye	s 🔽	No_	
Are Vegetation, Soil, or Hydrology naturally p	roblematic? (If needed,	explai	n any a	answei	rs in Remark	(S.)		
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locati	ons,	trans	ects	, importa	nt fea	tures, e	etc.
Hydrophytic Vegetation Present? Yes Vegetation Present?	Is the Sampled Area		7					

Hydric Soli Present?	res V No	within a Wetland?	Voc V No
Wetland Hydrology Present?	Yes 🔽 No	within a venance	
Remarks: PEM wetland located	within wetland cell 5		

within wet

VEGETATION - Use scientific names of plant	ts	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:		Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 4 (A)
		Total Number of Dominant Species Across All Strata: (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
	Ē	Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 0 X 1 0
		FACW species 50 X 2 100
		FAC species 0 X 3 0
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 5 X 4 20
Alopecurus arundinaceus 15	✓ FACW	UPL species 5 X 5 25
Elymus hispidus 5		Column Totals 60 (A) 145 (B)
Elymus trachycaulus 5		
Hordeum jubatum 10	✓ FACW	
Juncus balticus 15	✓ FACW	Hydrophytic Vegetation Indicators
	✓ FACW	1 - Rapid Test for Hydrophytic Vegetation
Juncus torreyi 10		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 40		Hydrophytic Vegetation Present? Yes ✔ NO □

Remarks:

A positive dominance test and a prevalence index below three indicate the presence of a hydrophytic vegetation community.

(inches)		Matrix			Redox F			1		Burgeter
	Color (m				(moist)	%	Type	Loc		Remarks
0-08	2.5YR	4/2 8	0 2.51	'R	3/6	20	С	Μ	Sandy Clay Loar	m Fine sand present.
08-17	10YR	4/2 5	0 7.5	′R	5/8	3	CS	M	Loamy Sand	47% gravel
	-				_		_	_		
Type: C=C	oncentration	D=Depletion,	RM=Red	luced	Matrix, CS=0	Covered	d or Coat	ed Sand	l Grains. ² Loca	tion: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators:	(Applicable to	all LRR	s, ur	less otherwi	se note	ed.)		Indicators fo	or Problematic Hydric Soils ² ;
Black H Hydrogu Stratifie I cm M Deplete Thick D Sandy I 2.5 cm	pipedon (A2) listic (A3) en Sulfide (A4 d Layers (A5 uck (A9) (LR d Below Dar ark Surface (Mucky Minera Mucky Peat c	4) (LRR F) R F, G, H) (Surface (A11 A12)	RR G, H		Sandy Gle Sandy Rec Stripped M Loamy Mu Loamy Gle Depleted N Redox Dar Depleted D Redox Dep High Plains (MLRA	dox (S5 latrix (S cky Mir yed Ma Matrix (M Atrix (M Atrix (M Surfa Dark Su Dression s Depre) 56) atrix (F2) F3) ice (F6) irface (F7 ns (F8)) -16)	Coast Pr Dark Sur High Pla (LRR Reduced Red Par Very Sha Other (E ³ Indicators of wetland	ck (A9) (LRR I, J) rairie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ins Depressions (F16) H outside of MLRA 72 & 73) I Vertic (F18) ent Material (TF2) allow Dark Surface (TF12) xplain in Remarks) f hydrophytic vegetation and hydrology must be present, isturbed or problematic.
Restrictive	Layer (if pre	sent):								
Type:									1. 1. 1. 1. 1. 1.	
Depth (in	iches):								Hydric Soil P	resent? Yes 🔽 No 🗌
	GY									
YDROLC										
	drology Indi	cators:								
Wetland Hy	drology Indi	cators: num of one rec	uired; ch	eck a	II that apply)	_			Secondary	Indicators (minimum of two required
Wetland Hy Primary Indi	drology Indi		uired; ch	_	II that apply) Salt Crust (B	11)				Indicators (minimum of two required the Soil Cracks (B6)
Wetland Hy Primary Indi	drology Indi cators (minin	num of one rec	uired; ch		Salt Crust (B' Aquatic Inver	tebrate	the second second second	-	Surfac	
Wetland Hy Primary Indi Surface High W	drology Indi cators (minim Water (A1) ater Table (A	num of one rec	uired; ch		Salt Crust (B	tebrate	the second second second	1	Surfac	ce Soil Cracks (B6)
Wetland Hy Primary Indi Surface	drology Indi cators (minim Water (A1) ater Table (A	num of one rec	uired; ch		Salt Crust (B' Aquatic Inver	tebrate Ifide Od	dor (C1))	Surface Spars Draina	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8)
Wetland Hy Primary Indi Surface High Wa Saturati	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3)	num of one rec	uired; ch		Salt Crust (B' Aquatic Inver Hydrogen Su	tebrate Ifide Oc Nater T	dor (C1) able (C2		Surface	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10)
Wetland Hy Primary Indi Curface High W Curface Saturati Sedime Drift De	drology Indi cators (minim Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (posits (B3)	nu <u>m of one rec</u> 2) 32)	uired; ch		Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not	tebrate Ifide Oc Water T zosphei tilled)	dor (C1) able (C2 res on Liv	ving Roo	Surface Surface Spars Draina Oxidiz Oxidiz Oxidiz Crayfi	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) eed Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8)
Wetland Hy Primary Indi Surface High W Saturati Water N Sedime Drift De Algal M	rdrology Indi cators (minim Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B3) at or Crust (B	nu <u>m of one rec</u> 2) 32)	uired <u>; ch</u>		Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F	tebrate Ifide Oc Water T zosphei tilled) Reduce	dor (C1) able (C2 res on Liv ed Iron (C	ving Roo	Surface Spars Draina Oxidiz Ots (C3) Crayfi	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ed Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9)
Wetland Hy Primary Indi Surface High W Saturati Water N Sedime Algal M Iron De	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5)	num of one rec 2) 32) 4)			Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su	tebrate Ifide Oc Water T zosphei tilled) Reduce urface (dor (C1) Table (C2 res on Liv ed Iron (C C7)	ving Roo	☐ Surfac ☐ Spars ☐ Draina ☐ Oxidiz Ots (C3) (wh ☐ Crayfi ☐ Satura ✔ Geom	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ced Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) orphic Position (D2)
Wetland Hy Primary Indi Surface High W. Saturati Vater N Sedime Drift De Inon De Inundat	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) ion Visible on	aum of one rec 2) 32) 4) Aerial Imager			Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F	tebrate Ifide Oc Water T zosphei tilled) Reduce urface (dor (C1) Table (C2 res on Liv ed Iron (C C7)	ving Roo	□ Surfac Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Wetland Hy Primary Indi Surface High W: Saturati Vater N Sedime Drift De Algal M Iron De Inundat Water-S	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave	aum of one rec 2) 32) 4) Aerial Imager			Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su	tebrate Ifide Oc Water T zosphei tilled) Reduce urface (dor (C1) Table (C2 res on Liv ed Iron (C C7)	ving Roo	□ Surfac Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ced Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) orphic Position (D2)
Wetland Hy Primary Indi Curface High W Curface Saturati Water N Curface Curfac	rdrology Indi cators (minim Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave rvations:	aum of one rec 2) 32) 4) Aerial Imager			Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su Other (Explai	tebrate Ifide Oc Water T zosphei tilled) Reduce urface (n in Re	dor (C1) Table (C2 res on Liv ed Iron (C C7)	ving Roo	□ Surfac Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Wetland Hy Primary Indi Currication High W Currication Sedime Drift De Algal M Iron De Inundat Water-S Field Obser	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave	aum of one rec 2) 32) 4) Aerial Imager			Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su	tebrate Ifide Oc Water T zosphei tilled) Reduce urface (n in Re	dor (C1) Table (C2 res on Liv ed Iron (C C7)	ving Roo	□ Surfac Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5)
Wetland Hy Primary Indi Surface High W Saturati Water N Sedime Drift De Algal M Iron De Inundat Water-S Field Obsen Surface Wat	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave rvations: ter Present?	aum of one rec 2) 32) 4) Aerial Imager ss (B9)	y (B7)		Salt Crust (B Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su Other (Explai	tebrate Ifide Oc Water T zospher tilled) Reduce urface (n in Re	dor (C1) Table (C2 res on Liv ed Iron (C C7) marks)	ving Roo	□ Surfac Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ced Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) orphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)
Primary Indi Surface High W. Saturati Water M Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface Water Surface Water Saturation P (includes ca	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave rvations: ter Present? Present? pillary fringe)	aum of one rec 2) 32) 4) Aerial Imager es (B9) Yes Yes Yes Yes Yes	y (B7) No No		Salt Crust (B' Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su Other (Explai Depth (inche Depth (inche	tebrate Ifide Oc Water T zospher tilled) Reduce urface (in in Re es): es):	dor (C1) Table (C2 res on Liv ed Iron (C C7) marks)	4)	│ Surfac ○ Spars ○ Draina ○ Oxidiz Oxidiz Oxidiz ○ Crayfi ○ Satura ✔ Geom ○ FAC-1 ○ Frost-	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ted Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) torphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)
Wetland Hy Primary Indi Surface High Wa Saturati Vater N Sedime Algal M Iron De Inundat Water-S Field Obser Surface Water Saturation P (includes ca	rdrology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave rvations: ter Present? Present? pillary fringe)	aum of one rec 2) 32) 4) Aerial Imager es (B9) Yes Yes Yes Yes Yes	y (B7) No No		Salt Crust (B' Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su Other (Explai Depth (inche Depth (inche	tebrate Ifide Oc Water T zospher tilled) Reduce urface (in in Re es): es):	dor (C1) Table (C2 res on Liv ed Iron (C C7) marks)	4)	□ Surfac □ Spars □ Draina □ Oxidiz ots (C3) (wh □ Crayfi □ Satura ✔ Geom □ FAC-1 □ Frost-	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ced Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) orphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)
Wetland Hy Primary Indi Surface High W. Saturati Water N Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface Wate Saturation P (includes ca Describe Re	drology Indi cators (minin Water (A1) ater Table (A ion (A3) Marks (B1) nt Deposits (B posits (B3) at or Crust (B posits (B5) ion Visible on Stained Leave rvations: ter Present? Present? Present? pillary fringe) ecorded Data	um of one rec 2) 32) 4) Aerial Imager ss (B9) Yes □ Yes □ Yes √ (stream gauge	y (B7) No No 		Salt Crust (B' Aquatic Inver Hydrogen Su Dry-Season V Oxidized Rhiz (where not Presence of F Thin Muck Su Other (Explai Depth (inche Depth (inche Depth (inche Vell, aerial pho	tebrate Ifide Oc Water T zospher tilled) Reduce urface (n in Re es): es): tes):	dor (C1) Table (C2 res on Liv ed Iron (C C7) marks) 12 evious in	4)	Uetland Hydrology	ce Soil Cracks (B6) ely Vegetated Concave Surface (B8) age Patterns (B10) ced Rhizospheres on Living Roots (C ere tilled) sh Burrows (C8) ation Visible on Aerial Imagery (C9) orphic Position (D2) Neutral Test (D5) Heave Hummocks (D7) (LRR F)

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Da	ate:	6/16/2022	2
Applicant/Owner: MDT		State	Mont	tana	Sampling Po	oint: D	P06U	
Investigator(s): R Jones, M Hickey	Section, Township, Range:		15	1N		33E		_
Landform (hillslope, terrace, etc.). Floodplain	Local relief (concave, conve	x, none): Flat	t		Slope	(%):	9
Subregion (LRR); LRR E Lat:	45.838072 Lon	g:		-10	7.597386	Datum	NAD 83	
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cl	assifica	ation: Not m	appeo	1	
Are Vegetation, Soil, or Hydrology naturally	ntly disturbed? Are "Norm problematic? (If needed	al Circu explai	umstar n any a	nces" p answer	emarks.) resent? Yes rs in Remarks	s.)	No	
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point locat	ions,	trans	sects,	, importan	it fea	tures, etc	•
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area							

Remarks' Links of a second second second	discount to DD00		
Wetland Hydrology Present?	Yes No 🗸	Within a Wethand I	
Hydric Soil Present?	Yes No 🗸	within a Wetland?	Yes No V

Remarks: Upland sample point adjacent to DP06w and wetland cell 6.

Iree Stratum Plot size (30 Foot Radius) Absolute % Cover: Dominant Species? Indicator Status Sapling/Shrub Stratum Plot size (15 Foot Radius) Indicator Indicator Indicator Elaeagnus angustifolia 10 Image: FACU FACU Indicator Indicator Herbaceous Stratum Plot size (5 Foot Radius) FACU Prevalence Index worksheet Elymus hispidus 15 Image: FACU Image: FACU Image: FACU Image: FACU Poa pratensis 10 FACU FACU FACU Image: FACU Image: FACU Poa pratensis 10 FACU FACU FACU Image: FACU Image: FACU Schedonorus pratensis 40 FACU FACU Image: FACU Image: FACU Schedonorus pratensis 40 FACU FACU Image: FACU Image: FACU Woody Vine Stratum Plot size (30 Foot Radius) Image: FACU Image: FACU Image: FACU Woody Vine Stratum Plot size (30 Foot Radius) Image: FACU Image: FACU Image: FACU Woody Vine Stratum	VEGETATION - Use s	cientific nan	nes of plant	S			
Sapling/Shrub Stratum Plot size (15 Foot Radius) Elaeagnus angustifolia 10 FACU Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 NL Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 10 FACU Taraxacum officinale 5 FACU Voody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1 Woody Vine Stratum Plot size (30 Foot Radius) 1	Tree Stratum Plot size (;	30 Foot Radiu	- \			Dominance Test worksheet	
Sapling/Shrub Stratum Plot size (15 Foot Radius) Elaeagnus angustifolia 10 I FACU Elaeagnus angustifolia 10 I FACU Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 I NL Elymus repens 5 FACU Poa pratensis 10 I FACU Schedonorus pratensis 10 I FACU Schedonorus pratensis 10 I FACU Voody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius)				opeoles	Otatus	Number of Dominant Species that are OBL, FACW or FAC:	A)
Sapling/Shrub Stratum Plot size (15 Foot Radius) Elaeagnus angustifolia 10 V FACU Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 V NL Elymus nepens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 10 FACU Schedonorus pratensis 10 FACU Taraxacum officinale 5 FACU Voody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius)							B)
Elaeagnus angustifolia 10 Image: FACU Prevalence Index worksheet Total % Cover of: Multiply by: OBL species 0 X1 0 FACW species 0 X3 0 FACU species 70 X4 280 UPL species 15 NL Column Totals 85 (A) 355 (B Prevalence Index = B/A 4.18 Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation Taraxacum officinale 5 FACU 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0	Sapling/Shrub Stratum	Plot size (15	Foot Radius)				% (A/B)
Image: Normal intermediation in the second secon			,		FACU	Prevalence Index worksheet	
Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 V Elymus hispidus 5 FACU species 0 X3 Poa pratensis 10 Schedonorus pratensis 10 Schedonorus pratensis 40 Taraxacum officinale 5 FACU Verselence Index = B/A = Hydrophytic Vegetation Indicators 1 Rapid Test for Hydrophytic Vegetation 2 Dominance Test is >50% 3 Prevalence Index is <= 3.0						Total % Cover of: Multipl	y by:
Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 NL Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU Woody Vine Stratum Plot size (30 Foot Radius) FACU Woody Vine Stratum Plot size (30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes NO						OBL species 0 X 1 0	
Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 NL Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU Woody Vine Stratum Plot size (30 Foot Radius) Indicators of hydric Vegetation (Explain) Indicators of hydric Vine Stratum Plot size (30 Foot Radius) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes						FACW species 0 X 2 0	
Herbaceous Stratum Plot size (5 Foot Radius) Elymus hispidus 15 ✓ NL Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 40 ✓ FACU Taraxacum officinale 5 FACU Version of the stratum 9 FACU Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius)						FAC species 0 X 3 0	
Elymus hispidus 15 NL Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU Woody Vine Stratum Plot size (30 Foot Radius) Foot Radius)	Herbacoous Stratum	Plot size (5	Foot Radius)			FACU species 70 X 4 280	0
Elymus repens 5 FACU Poa pratensis 10 FACU Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU Image: Stratum 1.1 - Rapid Test for Hydrophytic Vegetation Provalence Index = B/A = 4.18 Hydrophytic Vegetation Indicators 1.1 - Rapid Test for Hydrophytic Vegetation 2.2 - Dominance Test is >50% Image: Stratum 9 - Provalence Index is <= 3.0		1 101 3120 ()	,		NL	UPL species 15 X 5 75	5
Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU U 1 - Rapid Test for Hydrophytic Vegetation Q - Dominance Test is >50% 3 - Prevalence Index is <= 3.0			_			Column Totals 85 (A) 35	5 (B)
Schedonorus pratensis 40 FACU Taraxacum officinale 5 FACU Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0	Poa pratensis		10	\square	FACU	Prevalence Index = B/A =	4.18
Taraxacum officinale 5 FACU Image: Arrow officinale 1 - Rapid Test for Hydrophytic Vegetation Image: Arrow officinale 2 - Dominance Test is >50% Image: Arrow officinale 3 - Prevalence Index is <= 3.0	Schedonorus pratensis		40	\checkmark	FACU		
Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius)	· · · · · · · · · · · · · · · · · · ·		5		FACU		tation
Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius)							
Woody Vine Stratum Plot size (30 Foot Radius) Hydrophytic Vegetation Yes Yes NO							
Woody Vine Stratum Plot size (30 Foot Radius) Woody Vine Stratum Plot size (30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes NO							
Woody Vine Stratum Plot size (30 Foot Radius) Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes NO						supporting data in remarks or on sep	
Woody Vine Stratum Plot size (30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes						5 - Wetland Non-Vascular Plants	
Woody Vine Stratum Plot size (30 Foot Radius) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5. Hydrophytic Vegetation Yes						Problematic Hydrophytic Vegetation	(Explain)
Yes NO V	Woody Vine Stratum	Plot size (30	Foot Radius)			Indicators of hydric sil and wetland hydrology	must be
Remarks:		nd 25					

Remarks:

No evidence for a hydrophytic vegetation community observed.

OIL									Samplin	ng Point: DP	06U
Profile Des	cription: (I	Describe	to the depth	needed to doc	ument the i	indicator	or confirm	m the absence of i	ndicators.)		
Depth		Matrix			dox Feature		1.1.1.1				
(inches)	Color	(moist)	%	Color (moist)	%	Type	Loc ²	Texture	R	emarks	
0-05	10YR	4/3	100					Clay Loam			
05-19	10YR	4/2	100				S	Sandy Clay Loam			
						, 					
						, <u>i </u>					
-											
					_		_				
	1. 1										
				educed Matrix, (ed Sand G		n: PL=Pore		
19.11.00.00		: (Applic	able to all LF	Rs, unless oth				Indicators for		10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5";
Histoso		-			y Gleyed Ma				(A9) (LRR I,	the second se	0.15
	pipedon (A2 listic (A3)	2)			y Redox (S5 ed Matrix (S				rie Redox (A' ice (S7) (LRI		G, H)
	en Sulfide (A4)			y Mucky Mir				s Depression		
	d Layers (A		F)		y Gleyed Ma				outside of M		73)
	uck (A9) (Ll				ted Matrix (I				/ertic (F18)		
	d Below Da		e (A11)		x Dark Surfa			the second s	t Material (TF		
	ark Surface				ted Dark Su)		ow Dark Surf		
and the second s	Mucky Mine	100 C	S2) (LRR G,		x Depressio Plains Depre		16)	3Indicators of h	lain in Rema	C	
	ucky Peat o				ILRA 72 & 1				drology must		
	uoky r cur o	ar i cui (oi		(NO OF LIG			urbed or prot		
Restrictive	Layer (if pi	resent):							<u></u>		
Type:		1000						Constraint of			
Depth (in	ches):							Hydric Soil Pre	sent? Yes	N	• 🗸
Remarks: N	lo hvdric s	oil indica	ators observ	ed.						-	
YDROLO	ΟGΥ										
Vetland Hy	drology In	dicators:		Assess.				2144.000			
Primary Indi	cators (min	imum of o	ne required; (check all that ap	ply)			Secondary In	ndicators (mir	nimum of two	required
Surface	Water (A1))		Salt Crus	st (B11)			Surface	Soil Cracks ((B6)	
High Wa	ater Table ((A2)			Invertebrate	A REAL PROPERTY OF			Vegetated C		face (B8)
Saturati					en Sulfide Od				e Patterns (B		
20. 1 × 11. 1	Aarks (B1)	1.220			son Water T	and the second second second			d Rhizospher	es on Living	Roots (C
and the second second	nt Deposits				Rhizosphe		ing Roots		e tilled)		
	posits (B3)				e not tilled)				Burrows (C8	1	(00)
	at or Crust	(B4)			e of Reduce		4)		on Visible on		ery (C9)
	posits (B5)	an Andal I	manage (P7)		ck Surface (phic Position		
	Stained Lear		magery (B7)	U Other (E	xplain in Re	emarks)			utral Test (D ave Hummo	A	
Field Obser		ves (Da)					1	FIOSER	save numino		SALC)
Surface Wat		2 V	es No	✓ Depth (inches):						
Water Table		-			inches):		_				
Saturation P			es No		· · · · · · · · · · · · · · · · · · ·		10/04	land Hydrology Pr	econt? Va		
(includes ca			ca 100		inunes):		vvet	and nydrology Pr	esentr res	•	
			gauge, moni	toring well, aeria	al photos, pr	revious ins	spections)	if available:			
Remarks	o evidence	e of wetle	and hydrolog	gy observed.							
and the second				,							

Project/Site: JTX Tunnicliff	City/County: Big Horn		Sampling Date: _	6/16/2022
Applicant/Owner: MDT	State	e: Montana	Sampling Point:	DP06W
Investigator(s): R Jones, M Hickey	_ Section, Township, Range:	15 1N	33E	
Landform (hillslope, terrace, etc.). Floodplain	_ Local relief (concave, convex, nor	e): Undulatir	ng Slop	pe (%):4
Subregion (LRR): LRR E Lat:	45.838124 Long:	-1	107.59746 Datur	m: NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet		NWI classific	ation: Not mappe	ed 🛛
Are climatic / hydrologic conditions on the site typical for this time of y Are Vegetation, Soil, or Hydrology significant Are Vegetation, Soil, or Hydrology naturally p	ly disturbed? Are "Normal Circ		present? Yes	No
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locations	, transects	, important fe	atures, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	Is the Sampled Area	V 🔽		

Hydric Soil Present? Wetland Hydrology Present?	Yes V No Ves V No Ves V	within a Wetland?	Yes No
Remarks: PEM wetland located	within wetland cell 6.		

VEGETATION - Use scientific names of plant	S	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
	Opecies: Otatus	Number of Dominant Species that are OBL, FACW or FAC: 3 (A)
		Total Number of Dominant Species Across All Strata: 3 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
<u> </u>		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 10 X 1 10
		FACW species 50 X 2 100
		FAC species 5 X 3 15
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 5 X 4 20
Alopecurus arundinaceus 25	✓ FACW	UPL species 0 X 5 0
Elymus repens 5	FACU	Column Totals 70 (A) 145 (B)
Hordeum jubatum 10	✓ FACW	Prevalence Index = B/A = 2.07
Juncus balticus 2	FACW	
Juncus torrevi 3	FACW	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation
Poa palustris 10	✓ FACW	
Puccinellia nuttalliana 5		✓ 2 - Dominance Test is >50%
Typha angustifolia 5	□ OBL	✓ 3 - Prevalence Index is <= 3.0
Xanthium strumarium 5	FAC	4 - Morphological Adaptations (Provide
		supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
		Hydrophytic Vegetation Yes V NO
Percent Bare Ground 30		Present? Yes V INO

Remarks:

A positive dominance test and a prevalence index below three provide evidence for a hydrophytic vegetation community.

11-16 2.	ators: don (A2 (A3) ulfide (A vers (A4 vers (A4 A9) (LF low Dar surface y Miner y Peat or Peat or Peat or r (if pro-	(Applica 2) 5) (LRR F RR F, G, H rk Surface (A12) ral (S1) or Peat (S3 r Peat (S3 resent):	able to al 1) 2 (A11) 52) (LRR 5) (LRR F	I LRRs, u []]]]]]]]]]]]]]]]]]	nless other Sandy G Sandy F Strippec Loamy (Loamy (✓ Deplete Redox I High Pla (ML	wise not Bleyed Ma Redox (S5 I Matrix (S Mucky Min Bleyed Ma Cleved Matrix (Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa RA 72 & S	ed.) atrix (S4) () S6) heral (F1) atrix (F2) F3) ace (F6) arface (F7) ns (F8) essions (F 73 of LRR	M	Sandy Loam	ion: PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ² : ck (A9) (LRR I, J) ainie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ns Depressions (F16) H outside of MLRA 72 & 73) Vertic (F18) ent Material (TF2) llow Dark Surface (TF12) cplain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic. essent? Yes No
Type: C=Conce Hydric Soil Indic Histosol (A1) Histic Epiped Black Histic (Hydrogen Su Stratified Lay 1 cm Muck (/ Depleted Bel Thick Dark S Sandy Mucky 2.5 cm Mucky 2.5 cm Mucky 2.5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi YDROLOGY Wetland Hydrold	Intration cators: don (A2 (A3) ulfide (A /ers (A4 A9) (LF low Dat surface y Miner y Peat or Peat or Peat or r (if pro-	n, D=Depl (Applica 2) 5) (LRR F RR F, G, H rk Surface (A12) ral (S1) or Peat (S r Peat (S3 resent):	(A11) (LRR F	M=Reduced I LRRs, un [[d Matrix, CS nless other Sandy G Sandy F Strippec Loamy (Deplete Redox I Deplete Redox I High Pla (ML	S=Coveren wise not Sleyed Ma Redox (S5 Mucky Min Sleyed M d Matrix (Dark Surfa d Dark Su Depressio ains Depre RA 72 & S	d or Coate ed.) atrix (S4) b) S6) heral (F1) atrix (F2) F3) ace (F6) urface (F7) ns (F8) essions (F 73 of LRR	ed Sand G	Grains. ² Location Indicators for Coast Pra Dark Surf High Plair (LRR H Reduced Red Pare Very Shal Other (Ex ³ Indicators of I wetland hy unless dis	ion: PL=Pore Lining, M=Matrix. r Problematic Hydric Soils ² : ck (A9) (LRR I, J) ainie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ns Depressions (F16) H outside of MLRA 72 & 73) Vertic (F18) ent Material (TF2) llow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
Hydric Soil Indic Histosol (A1) Histic Epiped Black Histic (Hydrogen Su Stratified Lay 1 cm Muck (Depleted Bel Thick Dark S Sandy Mucky 2.5 cm Mucky 2.5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi	ators: don (A2 (A3) ulfide (A vers (A4 vers (A4 A9) (LF low Dar surface y Miner y Peat or Peat or Peat or r (if pro-	(Applica 2) 5) (LRR F RR F, G, H rk Surface (A12) ral (S1) or Peat (S3 r Peat (S3 resent):	able to al 1) 2 (A11) 52) (LRR 5) (LRR F	I LRRs, u []]]]]]]]]]]]]]]]]]	nless other Sandy G Sandy F Strippec Loamy (Loamy (✓ Deplete Redox I High Pla (ML	wise not Bleyed Ma Redox (S5 I Matrix (S Mucky Min Bleyed Ma Cleved Matrix (Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa RA 72 & S	ed.) atrix (S4) () S6) heral (F1) atrix (F2) F3) ace (F6) arface (F7) ns (F8) essions (F 73 of LRR) (16) (1 H)	Indicators for i cm Muc Coast Pra Dark Surf High Plair (LRR I Reduced Red Pare Very Shal Other (Ex ³ Indicators of I wetland hy unless dis	r Problematic Hydric Soils ³ : ck (A9) (LRR I, J) ainie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ns Depressions (F16) H outside of MLRA 72 & 73) Vertic (F18) ont Material (TF2) llow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
Hydric Soil Indic Histosol (A1) Histic Epiped Black Histic (Hydrogen Su Stratified Lay 1 cm Muck (/ Depleted Bel Thick Dark S Sandy Mucky 2.5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi YDROLOGY Wetland Hydrold	ators: don (A2 (A3) ulfide (A vers (A4 vers (A4 A9) (LF low Dar surface y Miner y Peat or Peat or Peat or r (if pro-	(Applica 2) 5) (LRR F RR F, G, H rk Surface (A12) ral (S1) or Peat (S3 r Peat (S3 resent):	able to al 1) 2 (A11) 52) (LRR 5) (LRR F	I LRRs, u []]]]]]]]]]]]]]]]]]	nless other Sandy G Sandy F Strippec Loamy (Loamy (✓ Deplete Redox I High Pla (ML	wise not Bleyed Ma Redox (S5 I Matrix (S Mucky Min Bleyed Ma Cleved Matrix (Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa RA 72 & S	ed.) atrix (S4) () S6) heral (F1) atrix (F2) F3) ace (F6) arface (F7) ns (F8) essions (F 73 of LRR) (16) (1 H)	Indicators for i cm Muc Coast Pra Dark Surf High Plair (LRR I Reduced Red Pare Very Shal Other (Ex ³ Indicators of I wetland hy unless dis	r Problematic Hydric Soils ³ : ck (A9) (LRR I, J) ainie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ns Depressions (F16) H outside of MLRA 72 & 73) Vertic (F18) ont Material (TF2) llow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
	ators: don (A2 (A3) ulfide (A vers (A4 vers (A4 A9) (LF low Dar surface y Miner y Peat or Peat or Peat or r (if pro-	(Applica 2) 5) (LRR F RR F, G, H rk Surface (A12) ral (S1) or Peat (S3 r Peat (S3 resent):	able to al 1) 2 (A11) 52) (LRR 5) (LRR F	I LRRs, u []]]]]]]]]]]]]]]]]]	nless other Sandy G Sandy F Strippec Loamy (Loamy (✓ Deplete Redox I High Pla (ML	wise not Bleyed Ma Redox (S5 I Matrix (S Mucky Min Bleyed Ma Cleved Matrix (Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa d Dark Surfa RA 72 & S	ed.) atrix (S4) () S6) heral (F1) atrix (F2) F3) ace (F6) arface (F7) ns (F8) essions (F 73 of LRR) (16) (1 H)	Indicators for i cm Muc Coast Pra Dark Surf High Plair (LRR I Reduced Red Pare Very Shal Other (Ex ³ Indicators of I wetland hy unless dis	r Problematic Hydric Soils ³ : ck (A9) (LRR I, J) ainie Redox (A16) (LRR F, G, H) face (S7) (LRR G) ns Depressions (F16) H outside of MLRA 72 & 73) Vertic (F18) ont Material (TF2) llow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
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1 cm Muck (/ Depleted Bel Thick Dark S Sandy Mucky 2.5 cm Mucky 5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi YDROLOGY Wetland Hydrold	A9) (LF low Dar surface y Miner y Peat Peat or r (if pro-	RR F, G, H rk Surface (A12) ral (S1) or Peat (S3 r Peat (S3 resent):	4) ≊ (A11) 52) (LRR 8) (LRR F	G, H)	Deplete Redox I Deplete Redox I High Pla (ML)	d Matrix (Dark Surfa d Dark Su Depressio ains Depre RA 72 & 3	F3) ace (F6) Inface (F7) ns (F8) essions (F 73 of LRR	(16) (16) (16)	Reduced Red Pare Very Shal Other (Ex ⁸ Indicators of I wetland h unless dis	Vertic (F18) ent Material (TF2) llow Dark Surface (TF12) cplain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
Depleted Bel Thick Dark S Sandy Mucky 2.5 cm Mucky 5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi IYDROLOGY Wetland Hydrold	low Dar surface y Miner y Peat Peat or r (if pro-	rk Surface (A12) ral (S1) or Peat (S r Peat (S3 resent):	e (A11) 52) (LRR 3) (LRR F	G, H)	Redox I Deplete Redox I High Pla (ML	Dark Surfa d Dark Su Depressio ains Depre RA 72 & 3	ace (F6) Irface (F7) ns (F8) essions (F 73 of LRR	(16) (16) (16)	Red Pare Very Shal Other (Ex Indicators of l wetland h unless dis	ent Material (TF2) Ilow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
Thick Dark S Sandy Mucky Sandy Mucky 2.5 cm Mucky Commentative Laye Type: Depth (inches Remarks: Promi PyDROLOGY Wetland Hydrold	urface y Miner y Peat Peat or r (if pr	(A12) ral (S1) or Peat (S r Peat (S3 resent):	52) (LRR 3) (LRR F)	Deplete Redox I High Pla (ML	d Dark Su Depressio ains Depre RA 72 & 3	nrface (F7) ns (F8) essions (F 73 of LRR	(16) (16) (16)	Very Shal Other (Ex ³ Indicators of I wetland hy unless dis	llow Dark Surface (TF12) splain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
Sandy Mucky 2.5 cm Mucky 5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi YDROLOGY Wetland Hydrold	y Miner y Peat Peat or r (if pro	ral (S1) or Peat (S r Peat (S3 resent):	3) (LRR F)	Redox I High Pla (ML	Depressio ains Depre RA 72 & 3	ns (F8) essions (F 73 of LRR	(16) (16) (16)	Other (Ex Indicators of I wetland hy unless dis	plain in Remarks) hydrophytic vegetation and ydrology must be present, sturbed or problematic.
2.5 cm Muck 5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi IYDROLOGY Wetland Hydrok	y Peat Peat or r (if pro):	or Peat (S r Peat (S3 resent):	3) (LRR F)	High Pla (ML	ains Depre	essions (F 73 of LRR	t H)	³ Indicators of I wetland h unless dis	hydrophytic vegetation and ydrology must be present, sturbed or problematic.
5 cm Mucky Restrictive Laye Type: Depth (inches Remarks: Promi IYDROLOGY Wetland Hydrold	Peat or er (if pro)	r Peat (S3 resent):	3) (LRR F)	(ML	RA 72 & 3	73 of LRR	t H)	wetland h unless dis	ydrology must be present, sturbed ör problematic.
Restrictive Laye Type: Depth (inches Remarks: Promi	er (if pro	esent):		_				_	unless dis	sturbed or problematic.
Type: Depth (inches Remarks: Promi):			_	ons comm	on withir		-		
Depth (inches Remarks: Promi YDROLOGY Wetland Hydrold):			_	ons comm	on withir		_	Hydric Soil Pre	resent? Yes 🗹 No 🗌
Remarks: Promi		edoximo	rphic co	ncentratio	ons comm	on within		_	Hydric Soil Pr	esent? Yes 🗹 No 🗌
Remarks: Promi		edoximo	rphic co	ncentratio	ons comm	on withir				55 mm 1 45
Wetland Hydrold										
		licatore								
Primary Indicator			ne require	d check	all that appl	(V)			Secondary	Indicators (minimum of two required
Surface Wate					Salt Crust	1				e Soil Cracks (B6)
High Water T					Aquatic Inv	Sec. 14.	s (B13)			ly Vegetated Concave Surface (B8)
Saturation (A	1.11.10				Hydrogen		A COLUMN TWO IS NOT			ge Patterns (B10)
Water Marks	1000			T T	Dry-Seaso					ed Rhizospheres on Living Roots (C3
Sediment De	- N - C - L	(B2)			Oxidized F		10000			re tilled)
Drift Deposits	2000					not tilled)				h Burrows (C8)
Algal Mat or	1	B4)			Presence			4)		tion Visible on Aerial Imagery (C9)
Iron Deposits					Thin Muck	Surface (C7)			orphic Position (D2)
Inundation V	- 11 C - 1	n Aerial In	magery (E	37)	Other (Exp	1000	S. W			eutral Test (D5)
Water-Staine			• • • •		Carlor Arrist					leave Hummocks (D7) (LRR F)
Field Observatio	ons:							1		
Surface Water Pr	esent?	Ye	es 🗌	No V	_ Depth (ind	ches):				
Water Table Pres	sent?	Ye	es 🗌	No 🗸	Depth (ind					
Saturation Preser	A 100 PT 100 PT		es 🗸	No	_ Depth (ind	ches):	5	We	tland Hydrology P	Present? Yes No No
(includes capillar) Describe Recorde			gauge, m	onitoring	well, aerial p	photos, pr	evious ins	pections)) if available:	
Remarks										
Evider	וce of ה חסי	wetland	nydrolog	jy observ	/ed in oxidi recorded a	ized rhiz at 16"	ospheres	s on livin	g roots and satur	ration present 5 inches from the

Project/Site: JTX Tunnicliff	City/County: Big Horn				Sampling Dat	e:	6/16/202	2
Applicant/Owner. MDT		State	Monta	ana g	Sampling Poir	nt: DP	07U	
Investigator(s): R Jones, M Hickey	_ Section, Township, Range: _		15	1N	3	3E		
Landform (hillslope, terrace, etc.). Undulating	_ Local relief (concave, conve	x, none	e): Flat			Slope (%):	0
Subregion (LRR): LRR E Lat:	45.837767 Long	g:		-107	7.597989 D	atum:	NAD 83	
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cla	ssifica	tion: Not ma	pped		
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🗹 No 🗌	(If no,	explain	n in Re	marks.)			
Are Vegetation, Soil, or Hydrology significant	ly disturbed? Are "Norma	al Circu	umstand	ces" pri	esent? Yes	✓	No	
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If needed,	explai	n any a	nswers	in Remarks.)		
SUMMARY OF FINDINGS – Attach site map showin	ng sampling point locati	ions,	trans	ects,	important	featu	ures, etc	
Hydrophytic Vegetation Present? Yes No V	Is the Sampled Area							

Hydric Soil Present? Wetland Hydrology Present?	Yes	No 🗸	within a Wetland?	Yes No	
Pemarke					_

Remarks: Upland sample point adjacent to DP07w and wetland cell 7.

VEGETATION - Use scientific names of plants	
Tree Streture Distaize (20 Feet Padius)	Indicator Dominance Test worksheet
	Number of Dominant Species that are OBL, FACW or FAC: 0 (A)
	Total Number of DominantSpecies Across All Strata:1(B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)	Percent of Dominant Species 0.0 % (A/B)
	Prevalence Index worksheetTotal % Cover of:Multiply by:OBL species0X 1FACW species0X 2FAC species0X 3O00
Herbaceous Stratum Plot size (5 Foot Radius)	FACU species 12 X 4 48
Elaeagnus angustifolia 2 🔲 FA	UPL species 63 X 5 315
Elymus hispidus 73 🖌 NI	Column Totals 75 (A) 363 (B)
Elymus trachycaulus 5 🔲 FA	CU Prevalence Index = B/A = 4.84
Schedonorus pratensis 5	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3.0
Woody Vine Stratum Plot size (30 Foot Radius)	Problematic Hydrophytic Vegetation (Explain) Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 25 Remarks:	Hydrophytic Vegetation Present?

No evidence for a hydrophytic vegetation community observed.

D									Sampling Point: DP07U
Profile Des	cription: (Describe	to the depth	needed to docu	ment the inc	dicator or	confirm	the absence of	indicators.)
Depth		Matrix		Redo	x Features				
(inches)	Color	(moist)	%	Color (moist)		Type ¹	Loc ²	Texture	Remarks
0-09	10YR	3/2	100					Clay Loam	
09-19	2.5Y	4/3	100					Sandy Loam	
00 10	2.01	.,	100					banay Loann	
_									
	-								
			_				_		
				Reduced Matrix, C			Sand Gra		on: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators	: (Applic	able to all L	RRs, unless othe	rwise noted	.)		Indicators fo	r Problematic Hydric Soils ² ;
Histoso				Sandy	Gleyed Matri	ix (S4)		1 cm Muc	:k (A9) (LRR I, J)
	pipedon (A	2)			Redox (S5)				airie Redox (A16) (LRR F, G, H
	listic (A3)				d Matrix (S6)				ace (S7) (LRR G)
	en Sulfide (Mucky Miner				ns Depressions (F16)
	d Layers (A	···· • • • • • • • • • • • • • • • • •	<i>x</i>		Gleyed Matr				H outside of MLRA 72 & 73)
	uck (A9) (L ed Below Da				ed Matrix (F3 Dark Surface				Vertic (F18) nt Material (TF2)
	ark Surface		e (ATT)		d Dark Surfa			the second se	llow Dark Surface (TF12)
	Mucky Mine				Depressions				plain in Remarks)
the second se			S2) (LRR G,		ains Depress		5)	the second se	hydrophytic vegetation and
	ucky Peat of				RA 72 & 73				ydrology must be present.
			2 - Sec. 6. 19				2 m m	instance all	sturbed or problematic.
								unless dis	sturbed of problematic.
	Layer (if p	resent):				_		uniess dis	surved of problemate.
	Layer (if p	resent):		-				uniess di	
Restrictive		resent):		_				Hydric Soil Pr	
Restrictive Type: Depth (ir	nches):	2032	ators observ	/ed.					
Restrictive Type: Depth (ir	nches):	2032	ators observ	/ed.					
Restrictive Type: Depth (ir Remarks: N	nches): Io hydric s	2032	itors observ	/ed.					
Restrictive Type: Depth (ir Remarks: N	nches): lo hydric s DGY	soil indica		ved.					
Restrictive Type: Depth (ir Remarks: N YDROLC	nches): lo hydric s DGY rdrology In	soil indica			(y)			Hydric Soil Pr	esent? Yes No
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi	nches): No hydric s DGY ydrology In icators (min	soil indica dicators:		check all that app				Hydric Soil Pr	esent? Yes No
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Surface	nches): No hydric s DGY rdrology In icators (min e Water (A1	soil indica ndicators: nimum of o		check all that app	(B11)	(813)		Hydric Soil Pr Secondary	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6)
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Surface High W	nches): No hydric s DGY ydrology In icators (min e Water (A1 iater Table (soil indica ndicators: nimum of o		check all that app Salt Crust	(B11) vertebrates (C.D. 107 No. 1		Hydric Soil Pr Secondary	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface
Restrictive Type: Depth (ir Remarks: N YDROLC YDROLC Wetland Hy Primary Indi Surface High W Y Saturat	oches): lo hydric s OGY /drology In icators (min e Water (A1 iater Table (ion (A3)	soil indica ndicators: nimum of o		check all that app Salt Crust Aquatic In	(B11) vertebrates (Sulfide Odo	r (C1)		Hydric Soil Pr Secondary	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10)
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Surface High W Saturat Water M	Inches): No hydric s DGY Indrology In Incators (min Incators (min)	soil indica ndicators: nimum of o) (A2)		check all that app Salt Crust Aquatic In Hydrogen	(B11) vertebrates (Sulfide Odo on Water Tab	r (C1) ble (C2)	n Roots ((Hydric Soil Pr Secondary Surface Sparse Draina Oxidize	esent? Yes No Indicators (minimum of two reg e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo
Restrictive Type: Depth (in Remarks: N YDROLC Wetland Hy Primary Indi Surface High W Z Saturat Water M Sedime	onches): No hydric s DGY vdrology In icators (min a Water (A1 iater Table (ion (A3) Marks (B1) ent Deposits	soil indica ndicators: nimum of o) (A2) s (B2)		check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I	(B11) vertebrates (Sulfide Odo on Water Tab Rhizosphere	r (C1) ble (C2)	g Roots (C	Hydric Soil Pr Secondary Surface Sparse Draina Oxidize	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo ire tilled)
Restrictive Type: Depth (in Remarks: N YDROLC Wetland Hy Primary Indi Surface High W V Saturat Saturat Sedime Drift De	DGY vdrology In icators (min a Water (A1 ater Table (ion (A3) Marks (B1) int Deposits posits (B3)	soil indica ndicators: nimum of o) (A2) s (B2)		check all that app Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized I (where	(B11) vertebrates (Sulfide Odo on Water Tab Rhizospheres not tilled)	r (C1) ble (C2) s on Living	g Roots (0	Hydric Soil Pr Secondary Surface Sparse Draina Oxidize C3) (whe	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo ire tilled) th Burrows (C8)
Restrictive Type: Depth (ir Remarks: N YDROLO YOROLO Wetland Hy Primary Indi Surface High W Saturat Sedime Drift De Algal M	DGY do hydric s DGY drology In icators (min a Water (A1 ater Table (ion (A3) Marks (B1) int Deposits posits (B3) iat or Crust	soil indica ndicators: nimum of o) (A2) s (B2)		check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I (where Presence	(B11) vertebrates (Sulfide Odo on Water Tab Rhizosphere: not tilled) of Reduced	r (C1) ble (C2) s on Living Iron (C4)	g Roots (C	Hydric Soil Pr Secondary Surface Sparse Draina Cayfis Satura	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery ((
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Gurface High W Saturat Water M Sedime Drift De Algal M Iron De	OGY vdrology In icators (min e Water (A1 iater Table (ion (A3) Marks (B1) int Deposits posits (B3) iat or Crust posits (B5)	soil indica ndicators: nimum of o) (A2) s (B2) (B4)	ne required;	check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I (where Presence Thin Muck	(B11) vertebrates (Sulfide Odo on Water Tak Rhizospheres not tilled) of Reduced s Surface (C7	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots (0	Hydric Soil Pr Secondary Surface Sparse Draina Oxidize 3) (whe Crayfis Satura Geomo	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery (orphic Position (D2)
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Surface High W Saturat Water M Saturat Water M Sedime Drift De Algal M Iron De Inundat	OGY vdrology In icators (min e Water (A1 iater Table (ion (A3) Marks (B1) int Deposits posits (B3) iat or Crust posits (B5)	soil indica idicators: imum of o) (A2) s (B2) (B4) on Aerial I		check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I (where Presence Thin Muck	(B11) vertebrates (Sulfide Odo on Water Tab Rhizosphere: not tilled) of Reduced	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots (C	Hydric Soil Pr Secondary Surface Sparse Drainae Oxidize Saturae Geomo FAC-N	esent? Yes No Indicators (minimum of two req e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery ((
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Surface High W Z Saturat Water N Sedime Drift De Algal M Iron De Inundat Water-S	Arches): No hydric s DGY /drology In icators (min a Water (A1 fater Table (ion (A3) Marks (B1) ant Deposits (B3) at or Crust posits (B3) at or Crust posits (B5) ion Visible Stained Lea	soil indica idicators: imum of o) (A2) s (B2) (B4) on Aerial I	ne required;	check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I (where Presence Thin Muck	(B11) vertebrates (Sulfide Odo on Water Tak Rhizospheres not tilled) of Reduced s Surface (C7	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots (0	Hydric Soil Pr Secondary Surface Sparse Drainae Oxidize Saturae Geomo FAC-N	esent? Yes No Indicators (minimum of two reg e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery (orphic Position (D2) eutral Test (D5)
Restrictive Type: Depth (in Remarks: N YDROLC Wetland Hy Primary Indi G Surface High W Saturat Water M Sedime Drift De Algal M Iron De Inundat Water-S Field Obser	Aches): No hydric s DGY Adrology In icators (min a Water (A1 iater Table (ion (A3) Marks (B1) ion (Deposits (B3) iat or Crust posits (B3) iat or Crust posits (B5) ion Visible Stained Lea rvations:	soil indica indicators: imum of o) (A2) s (B2) (B4) on Aerial I ives (B9)	ne required;	check all that app Salt Crust Aquatic In Dry-Sease Oxidized I (where Presence Thin Muck Other (Ex	(B11) vertebrates (Sulfide Odo on Water Tab Rhizosphere: not tilled) of Reduced Surface (C7 plain in Rem	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots (C	Hydric Soil Pr Secondary Surface Sparse Drainae Oxidize Saturae Geomo FAC-N	esent? Yes No Indicators (minimum of two reg e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery (orphic Position (D2) eutral Test (D5)
Restrictive Type: Depth (ir Remarks: N YDROLO Wetland Hy Primary Indi Surface High W Saturat Vater M Sedime Drift De Algal M Iron De Inundat Water-S Field Obser Surface Wa	Aches): No hydric s DGY Adrology In icators (min icators (min ic	soil indica adicators: amum of o) (A2) s (B2) (B4) on Aerial I aves (B9) ? Y	me required: magery (B7)	check all that app Salt Crust Aquatic In Hydrogen Dry-Sease Oxidized I (where Presence Thin Muck Other (Ex	(B11) vertebrates (Sulfide Odo on Water Tak Rhizosphere: not tilled) of Reduced Surface (C7 plain in Rem ches):	r (C1) ble (C2) s on Living Iron (C4) 7)	g Roots (0	Hydric Soil Pr Secondary Surface Sparse Drainae Oxidize Saturae Geomo FAC-N	esent? Yes No Indicators (minimum of two reg e Soil Cracks (B6) Ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery (orphic Position (D2) eutral Test (D5)
Restrictive Type: Depth (ir Remarks: N YDROLC Wetland Hy Primary Indi Guidant Water M Sedime Drift De Algal M Iron De Inundat Water-S Field Obsei	Aches): No hydric s DGY vdrology In icators (min e Water (A1 icator Table (ion (A3) Marks (B1) int Deposits (B3) at or Crust posits (B3) iat or Crust posits (B5) ion Visible Stained Lea rvations: ter Present?	soil indica adicators: nimum of o) (A2) s (B2) (B4) on Aerial I aves (B9) ? Y	me required: magery (B7)	check all that app Salt Crust Aquatic In Dry-Sease Oxidized I (where Presence Thin Muck Other (Ex Output) (in Depth (in	(B11) vertebrates (Sulfide Odo on Water Tat Rhizosphere: not tilled) of Reduced (Surface (CT plain in Rem ches): ches):	r (C1) ble (C2) s on Living Iron (C4) 7)		Hydric Soil Pr Secondary Surface Sparse Drainae Oxidize Saturae Geomo FAC-N	esent? Yes No Indicators (minimum of two reg e Soil Cracks (B6) ily Vegetated Concave Surface ge Patterns (B10) ed Rhizospheres on Living Roo re tilled) th Burrows (C8) tion Visible on Aerial Imagery (for pric Position (D2) eutral Test (D5) leave Hummocks (D7) (LRR F

Remarks:

Project/Site: JTX Tunnicliff	City/County: Big Horn	Sampling Date: 6/16/2022
Applicant/Owner. MDT	State: Monta	ana Sampling Point: DP07W
Investigator(s): R Jones, M Hickey	Section, Township, Range:15	1N 33E
Landform (hillslope, lerrace, etc.). Toeslope	Local relief (concave, convex, none): CONC	ave Slope (%): 5
Subregion (LRR); LRR E Lat:	45.837822 Long:	-107.598089 Datum: NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet	NWI cla	ssification: Not Mapped
Are climatic / hydrologic conditions on the site typical for this time of y Are Vegetation, Soil, or Hydrology significantl Are Vegetation, Soil, or Hydrology naturally p	ly disturbed? Are "Normal Circumstanc problematic? (If needed, explain any an	nswers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showin Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes No	- Is the Sampled Area	

Hydric Soil Present? Wetland Hydrology Present?	Yes 🖌 No 🗌 Yes 🖌 No 🗌	within a Wetland?	Yes No
Remarks: PEM wetland located v	within wetland cell 7.		

VEGETATION - Use scientific names of plant	S	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
	Species? Status	Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species 50.0 % (A/B)
		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 5 X 1 5
		FACW species 30 X 2 60
		FAC species 0 X 3 0
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 15 X 4 60
Chenopodium album 1	□ FACU	UPL species 0 X 5 0
Cirsium arvense 4	☐ FACU	Column Totals 50 (A) 125 (B)
Elymus repens 10	FACU	Prevalence Index = B/A = 2.50
Hordeum jubatum 30	✓ FACW	Hydrophytic Vegetation Indicators
Schoenoplectus maritimus 2	OBL	1 - Rapid Test for Hydrophytic Vegetation
Typha angustifolia 3	OBL	2 - Dominance Test is >50%
		 ✓ 2 Definition for the state state state ✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		, , , , , , , , , , , , , , , , , , ,
		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 50		Hydrophytic Vegetation Present? Yes ✔ NO
Remarks:		

A prevalence index below three provides evidence for a hydrophytic vegetation community.

		Matrix				x Feature			
(inches)	Color (r		%		(moist)		Type ¹	Loc	
0-09	10YR	4/1	90	7.5YR	3/6	10	С	M,PL	Sandy Clay Loam
09-16	2.5Y	4/2	99	7.5YR	3/4	1	С	Μ	Sandy Loam
_							-	_	
							_		
_							-		<u></u>
							_		
Type: C=C	Concentration	, D=Depletio	n, RM=	Reduce	d Matrix, CS	=Covered	d or Coate	d Sand	Grains. ² Location: PL=Pore Lining, M=Matrix.
lydric Soil	Indicators:	(Applicable	to all	LRRs, u	nless other	wise not	ed.)		Indicators for Problematic Hydric Soils ² :
Histoso				[Bleyed Ma			1 cm Muck (A9) (LRR I, J)
	pipedon (A2))		_		edox (S5			Coast Prairie Redox (A16) (LRR F, G, H)
	listic (A3)	in .		-		Matrix (S			Dark Surface (S7) (LRR G)
	en Sulfide (A ed Layers (A5			-		Aucky Mir	and the second sec		High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73)
	uck (A9) (LR	Contraction of the second s		-		Bleyed Ma d Matrix (I			Reduced Vertic (F18)
	1	k Surface (A	11)	-		ark Surfa	10 M		Red Parent Material (TF2)
	ark Surface			2		d Dark Su)	Very Shallow Dark Surface (TF12)
	Mucky Miner	· · · · · · · · · · · · · · · · · · ·		1		epressio			Other (Explain in Remarks)
2.5 cm	Mucky Peat	or Peat (S2)	LRR C	i, H)	High Pla	ins Depre	essions (F	16)	³ Indicators of hydrophytic vegetation and
5 cm M	ucky Peat or	Peat (S3) (L	RR F)		(ML	RA 72 & 7	3 of LRF	(H)	wetland hydrology must be present,
	1					-	11.0		unless disturbed or problematic.
Restrictive	Layer (if pre	esent):							
Type:				_					
Depth (in	nches):								Hydric Soil Present? Yes 🗹 No 🗌
)GY								
		licatore:							
Wetland Hy	drology Ind		equirer	check :	all that apply	0			Secondary Indicators (minimum of two required
Wetland Hy Primary Ind	drology Ind	icators: num of one r	equirec	check a		1			Secondary Indicators (minimum of two required
Netland Hy Primary Ind	vdrology Ind icators (minir Water (A1)	num of one r	equirec	check	Salt Crust	(B11)	s (B13)	_	Surface Soil Cracks (B6)
Netland Hy Primary Ind Surface High W	/drology Ind icators (minir Water (A1) /ater Table (A	num of one r	equirec	l: check : □	Salt Crust Aquatic Inv	(B11) vertebrate	the second s		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
Vetland Hy Primary Ind Sunface High W C Saturat	ydrology Ind icators (minir Water (A1) later Table (A ion (A3)	num of one r	equirec		Salt Crust Aquatic Inv Hydrogen	(B11) vertebrate Sulfide Oo	dor (C1)		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
Wetland Hy Primary Ind ☐ Surface ☐ High W ✔ Saturat ☐ Water M	ydrology Ind icators (minir Water (A1) /ater Table (A ion (A3) Marks (B1)	num of one n .2)	equirec		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso	(B11) vertebrate Sulfide Od n Water T	dor (C1) able (C2)		 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C
Netland Hy Primary Ind Surface High W Saturat Water N Sedime	vdrology Ind icators (minir Water (A1) later Table (A ion (A3) Marks (B1) ent Deposits (num of one n .2)	equirec		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R	(B11) vertebrate Sulfide Od n Water T hizosphe	dor (C1) able (C2)		 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Costs (C3)
Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De	vdrology Ind icators (minir Water (A1) (ater Table (A ion (A3) Marks (B1) ent Deposits (eposits (B3)	num of one n .2) (B2)	equirec		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R	(B11) vertebrate Sulfide Od n Water T hizosphe not tilled)	dor (C1) able (C2) res on Liv	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Concave) (where tilled) Crayfish Burrows (C8)
Wetland Hy Primary Ind Surface High W ✓ Saturat Water M Sedime Drift De Algal M	vdrology Ind icators (minir Water (A1) (ater Table (A ion (A3) Marks (B1) ent Deposits (eposits (B3) lat or Crust (B	num of one n .2) (B2)	equirec		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where n	(B11) vertebrate Sulfide Oo n Water T hizosphe not tilled) of Reduce	dor (C1) able (C2) res on Liv d Iron (C	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Costs (C3)
Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De	vdrology Ind icators (minir Water (A1) /ater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5)	num of one n (2) (82) 34)			Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where n Presence o	(B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (dor (C1) Table (C2) res on Liv d Iron (C C7)	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Costs (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2)
Vetland Hy Primary Ind Surface High W Saturat Vater N Sedime Drift De Iron De Inundat	vdrology Ind icators (minir Water (A1) /ater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5)	num of one n .2) (62) 34) n Aerial Imag			Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where n Presence o Thin Muck	(B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (dor (C1) Table (C2) res on Liv d Iron (C C7)	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Vetland Hy Primary Ind Surface High W Saturat Vater N Sedime Drift De Algal M Iron De Inundal Water-S	vdrology Ind icators (minir water (A1) later Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5) lion Visible or Stained Leav	num of one n .2) (62) 34) n Aerial Imag			Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where n Presence o Thin Muck	(B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (dor (C1) Table (C2) res on Liv d Iron (C C7)	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Vetland Hy Primary Ind Surface High W ✓ Saturat Water M Sedime Drift De Algal M Iron De Inundal Water-S Field Obse	vdrology Ind icators (minir water (A1) later Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5) lion Visible or Stained Leav	num of one n .2) (62) 34) n Aerial Imag	ery (B7		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where n Presence o Thin Muck Other (Exp	(B11) vertebrate Sulfide Od n Water T hizosphe not tilled) of Reduce Surface (lain in Re	dor (C1) Table (C2) res on Liv d Iron (C C7)	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundat Water-S Field Obse	vdrology Ind icators (minir water (A1) (ater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5) lion Visible or Stained Leav rvations: ter Present?	num of one n (B2) 34) n Aerial Imag es (B9)	ery (Bi		Salt Crust Aquatic Inv Hydrogen S Dry-Seaso Oxidized R (where m Presence of Thin Muck Other (Exp	(B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (lain in Re	dor (C1) Table (C2) res on Liv d Iron (C C7)	ing Roc	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hy Primary Ind Surface High W Saturat Water N Sedime Drift De Algal M Iron De Inundal Water-S Field Obse Surface Wa Water Table	vdrology Ind icators (minir water (A1) fater Table (A ion (A3) Marks (B1) ent Deposits (B3) fat or Crust (B posits (B5) lion Visible or Stained Leav rvations: ter Present?	num of one m (B2) (B2) (B2) (B2) (B2) (B2) (B2) (B2)	ery (B7		Salt Crust Aquatic Inv Hydrogen 3 Dry-Seaso Oxidized R (where n Presence of Thin Muck Other (Exp Depth (inc Depth (inc	(B11) vertebrate Sulfide Oo n Water T thizosphe not tilled) of Reduce Surface (lain in Re ches):	dor (C1) Table (C2) res on Liv d Iron (C C7)	4)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Context) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Vetland Hy Primary Ind Surface High W Saturat Vater N Sedime Algal M Iron De Inundat Vater-S Field Obse Surface Wa Water Table Saturation F includes ca	vdrology Ind icators (minir water (A1) ater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B3) lat or Crust (B5) lion Visible or Stained Leav rvations: ter Present? Present? pollary fringe	num of one m (62) (62) (62) (62) (62) (62) (72) (72) (72) (72) (72) (72) (72) (7	ery (B7	00000000000000000000000000000000000000	Salt Crust Aquatic Inv Hydrogen 3 Dry-Seaso Oxidized R (where n Presence o Thin Muck Other (Exp 	(B11) vertebrate Sulfide Od n Water 1 chizosphe not tilled) of Reduce Surface (lain in Re ches): ches):	dor (C1) Table (C2) res on Liv d Iron (C C7) marks)	4)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Orainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Costs (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Vetland Hy Primary Ind Surface High W Saturat Vater N Sedime Algal M Iron De Inundat Vater-S Field Obse Surface Wa Water Table Saturation F includes ca	vdrology Ind icators (minir water (A1) ater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B3) lat or Crust (B5) lion Visible or Stained Leav rvations: ter Present? Present? pollary fringe	num of one m (62) (62) (62) (62) (62) (62) (72) (72) (72) (72) (72) (72) (72) (7	ery (B7	00000000000000000000000000000000000000	Salt Crust Aquatic Inv Hydrogen 3 Dry-Seaso Oxidized R (where n Presence o Thin Muck Other (Exp 	(B11) vertebrate Sulfide Od n Water 1 chizosphe not tilled) of Reduce Surface (lain in Re ches): ches):	dor (C1) Table (C2) res on Liv d Iron (C C7) marks)	4)	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Context) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Vetland Hy Primary Ind Surface High W G Saturat Vater N Sedime Drift De Algal M Hondat Nater Table Saturation F includes ca Describe Re	vdrology Ind icators (minir e Water (A1) fater Table (A ion (A3) Marks (B1) ent Deposits (B3) lat or Crust (B posits (B5) lion Visible or Stained Leav rvations: ter Present? Present? ppillary fringe acorded Data	num of one m (B2) (B2) 34) n Aerial Imag es (B9) Yes [Yes] Yes]	ery (B7	() () () () () () () () () () () () () (Salt Crust Aquatic Inv Hydrogen 3 Dry-Seaso Oxidized R (where m Presence of Thin Muck Other (Exp Depth (ind Depth (ind Depth (ind Depth (ind Depth (ind 	(B11) vertebrate Sulfide Od n Water T thizosphe not tilled) of Reduce Surface (lain in Re shes): shes): shotos, pr	dor (C1) able (C2) res on Liv d Iron (C C7) marks) 2 evious ins	4) wepection	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Orainage Patterns (B10) Oxidized Rhizospheres on Living Roots (Costs (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)

Project/Site: JTX Tunnicliff	City/County: Big Horn			1	Sampling Date	6/1	6/2022
Applicant/Owner: MDT		State	Mont	ana	Sampling Point	DP08L	J
Investigator(s): R Jones, M Hickey	Section, Township, Range:		15	1N	33	E	
Landform (hillslope, terrace, etc.). Floodplain	Local relief (concave, conve	x, none	e): Hum	nmock	y s	lope (%):	14
Subregion (LRR); LRR E Lat:	45.838644 Lon	g:	_	-107	7.600914 Da	tum: NA	D 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cla	assifica	tion: Not map	ped	
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes 🔽 No 🗌	(If no	explai	n in Re	marks.)		
Are Vegetation, Soil, or Hydrology significar	ntly disturbed? Are "Norm	al Circu	umstan	ces" pri	esent? Yes	V N	,
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed	explai	n any a	inswers	s in Remarks.)		
SUMMARY OF FINDINGS – Attach site map showi	ng sampling point locat	ions,	trans	ects,	important i	eature	s, etc.
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area						

Hydric Soil Present? Wetland Hydrology Present?	Yes 🖌	within a Wetland?	Yes No
Pemarke:		 	

Remarks: Upland sample point adjacent to DP08w and wetland cell 8/9.

VEGETATION - Use s	scientific names of plant	S		
Tree Stratum Plot size ((30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet	
			Number of Dominant Species that are OBL, FACW or FAC:	0 (A)
			Total Number of Dominant Species Across All Strata:	2 (B)
Sapling/Shrub Stratum	Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)
	(10		Prevalence Index worksheet	
			Total % Cover of:	Multiply by:
			OBL species 0 X 1	0
			FACW species 0 X 2	0
			FAC species 0 X 3	0
			FACU species 5 X 4	20
Herbaceous Stratum Bromus japonicus	Plot size (5 Foot Radius) 5	□ NL	UPL species 80 X 5	400
Elymus hispidus	75		Column Totals 85 (A)	420 (B)
Poa pratensis	5	FACU	Prevalence Index = B/A =	4.94
Poa pratensis	5	FACU	Prevalence Index = B/A = Hydrophytic Vegetation Indicators	-
Poa pratensis	5	FACU		s
Poa pratensis	5	FACU FACU	Hydrophytic Vegetation Indicators	s tic Vegetation
Poa pratensis	5	FACU	Hydrophytic Vegetation Indicators	s tic Vegetation
Poa pratensis	5	FACU	Hydrophytic Vegetation Indicators Inditert Indicators <td>s tic Vegetation .0 ns (Provide</td>	s tic Vegetation .0 ns (Provide
Poa pratensis	5	FACU	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophyt 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3	s tic Vegetation .0 ns (Provide or on separate
Poa pratensis	5	FACU FACU	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophyt 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3	s tic Vegetation .0 ns (Provide or on separate lants
Poa pratensis	5 Plot size (30 Foot Radius)	FACU FACU	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophyt 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3	s tic Vegetation .0 ns (Provide or on separate lants getation (Explain) rdrology must be
	Plot size (30 Foot Radius)	FACU	Hydrophytic Vegetation Indicators 1 - Rapid Test for Hydrophyt 2 - Dominance Test is >50% 3 - Prevalence Index is <= 3 4 - Morphological Adaptation supporting data in remarks of sheet. 5 - Wetland Non-Vascular Pl Problematic Hydrophytic Veg Indicators of hydric sil and wetland hydrophytic sil and sil	s tic Vegetation .0 ns (Provide or on separate lants getation (Explain) vdrology must be atic for #3, 4, 5.

No evidence of a hydrophytic vegetation community present.

Profile Description: Depth	Describe						10.01.0					
Depth		to the dep	oth neede				or conf	irm the abse	ence of inc	dicators.)	
	Matrix or (moist)	%	Color	(moist)	x Features %	Tvpe ¹	Loc ²	Textur	e.		Remarks	
0-04 10YF		100		(1110)01/				Clay Lo				
					-	•		-				
04-10 2.5Y	4/2	98	7.5YR	4/4	2	С	M, PL			ery fine	e sand throug	nout.
10-16 2.5Y	R 4/3	100						Fine Sand	y Loam			
		_	_		_	_						
Type: C=Concentra Hydric Soil Indicate Histosol (A1) Histic Epipedon Black Histic (A3) Hydrogen Sulfid Stratified Layers 1 cm Muck (A9) Depleted Below Thick Dark Surfa Sandy Mucky M 2.5 cm Mucky Pea	(A2) (A2) e (A4) (A5) (LRR F (LRR F, G, F Dark Surface ace (A12) ineral (S1) eat or Peat (able to al) +) e (A11) S2) (LRR	I LRRs, u []]]]]]]]]]]]]]]]]]	Alless other Sandy C Sandy F Stripped Loamy Loamy Deplete Redox I Deplete Redox I High Pla		ed.) trix (S4)) 6) teral (F1) trix (F2) F3) cce (F6) triace (F7 the (F8) trist (F8) tristions (F8)) -16)	Indica i Cu Di Di Di Di Di Di Di Di Di Di	tors for Pe cm Muck (, oast Prairie ark Surface igh Plains I (LRR H o educed Ve ed Parent I ery Shallow ther (Expla ators of hyde etland hydr	roblema A9) (LRF a Redox (a (S7) (L Depression outside o rtic (F18) Material (v Dark St úin in Ren drophytic ology mu	(A16) (LRR F, G .RR G) ons (F16) of MLRA 72 & 73) (TF2) urface (TF12) marks) vegetation and ust be present,	а; , Н)
Type: Depth (inches): Remarks: Commor								Hydric pre linings v	Ness distur Soil Prese vithin the	ent? Y	res 🔽 No	-
Type: Depth (inches): _ Remarks: Commor redoximo	prominent							Hydric pre linings v	Soil Prese	ent? Y	res 🔽 No	
Type: Depth (inches): _ Remarks: Commor redoximo	prominent prphic featu							Hydric pre linings v	Soil Prese	ent? Y	res 🔽 No	
Depth (inches): _ Remarks: Commor	prominent orphic featu Indicators:	res may	be indica	itive of cor	ntinued w			Hydric ore linings v on.	Soil Prese	ent? Y depleted	res 🔽 No	ence of
Type: Depth (inches): _ Remarks: Commor redoximo	Indicators: ninimum of o A1) e (A2) i) sits (B2) 3) st (B4) 5) le on Aerial I eaves (B9)	ne require	be indica	all that appl Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate: Sulfide Oc on Water T Rhizospher not tilled) of Reduce Surface (i	s (B13) for (C1) able (C2) res on Liv d Iron (C C7))))))))))))	Hydric ore linings v on.	Soil Prese vithin the vithin the ondary Ind Surface S Sparsely \ Drainage Oxidized F (where Crayfish E Saturation Geomorph FAC-Neut	ent? Y depleted licators (r oil Crack /egetate Patterns Rhizosph tilled) Burrows (o Visible o nic Positi ral Test (res <u>V</u> No d matrix. Prese minimum of two as (B6) d Concave Surfa (B10) teres on Living R C8) on Aerial Imager on (D2)	required ce (B8) oots (C3 y (C9)

Project/Site: JTX Tunnicliff	City/County: Big Horn	City/County: Big Horn					6/16/2022	
Applicant/Owner. MDT		State	Mont	tana	Sampling P	oint: _	DP08W	
Investigator(s): R Jones, M Hickey	Section, Township, Range: _		15	1N		33E		
Landform (hillslope, lerrace, etc.). Floodplain	_ Local relief (concave, conve	x, none) Flat	_	Slope (%):			4
Subregion (LRR); LRR E Lat:	45.838668 Long: -				107.600691 Datum: NA		n: NAD	83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI cl	assific	ation: Not n	nappe	d	
Are climatic / hydrologic conditions on the site typical for this time of y Are Vegetation, Soil, or Hydrology significantl					emarks.) resent? Ye	s 🗸	No	
			vers in Remarks.)					
SUMMARY OF FINDINGS – Attach site map showin	g sampling point locati	ons,	trans	ects	, importa	nt fea	atures,	etc.
Hydrophytic Vegetation Present? Yes Vegetation Present?	Is the Sampled Area		2					

Hydric Soll Present?	res V No	within a Wetland?	Yes No
Wetland Hydrology Present?	Yes 🖌 No		
Remarks: PEM wetland located	within wetland cell 8/9		

VEGETATION - Use scientific names of plan	ts	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 1 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species 50.0 % (A/B)
		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 7 X 1 7
		FACW species 20 X 2 40
		FAC species 0 X 3 0
Herbaceous Stratum Plot size (5 Foot Radius)		FACU species 12 X 4 48
Chenopodium rubrum 1	OBL	UPL species 0 X 5 0
Elymus repens 12	✓ FACU	Column Totals 39 (A) 95 (B)
Hordeum jubatum 15	FACW	Prevalence Index = B/A = 2.44
Juncus torreyi 5	FACW	Hydrophytic Vegetation Indicators
Schoenoplectus maritimus 5	OBL	1 - Rapid Test for Hydrophytic Vegetation
Typha angustifolia 1	OBL	□ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		□ Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 60		Hydrophytic Vegetation Present? Yes ✔ NO

Remarks:

Evidence of a hydrophytic vegetation community observed in the presence of several obligate wetland species and a prevalence index below three.

OIL										Sampling Point: DP08W
	ription: (I	Describe t	o the de	epth need				or conf	irm the absence	of indicators.)
Depth	Calas	Matrix	%	Cala		Features		Loc ²	Texture	Demodia
(inches)	Color (r (moist)	%	Type ¹			Remarks
0-02	10YR	3/3	70	2.5Y	4/2	30	С	Μ	Silt Loam	
02-08	2.5YR	3/2	70	Ν	2.5/0	20			Fine Sandy Lo	bam
02-08	2.5YR	3/2	70	2.5YR	3/6	10	С	Μ	Fine Sandy Lo	bam
08-12+	2.5Y	4/2	100						Sand	Horizon contains 90% cobbl
	_			-		_	_	_		
Type: C=Co Hydric Soil II								ed Sand		cation: PL=Pore Lining, M=Matrix.
Black His Hydroger Stratified 1 cm Mud Depleted Thick Da	oipedon (A: stic (A3) n Sulfide (A I Layers (A ck (A9) (LI Below Da ark Surface lucky Mine	A4) (5) (LRR F RR F, G, H ark Surface (A12) (al (S1)	l) : (A11)	t G, H)	Sandy R Stripped Loamy M Loamy G Depleted Redox D Depleted Redox D High Plai	l Dark Su epression ins Depre) S6) atrix (F2) F3) ace (F6) Irface (F7 ns (F8) essions (I	') F16)	Coast Dark S High F (LF Reduc Red P Very S Other ³ Indicators	Muck (A9) (LRR I, J) Prairie Redox (A16) (LRR F, G, H) Surface (S7) (LRR G) Plains Depressions (F16) RR H outside of MLRA 72 & 73) ced Vertic (F18) Parent Material (TF2) Shallow Dark Surface (TF12) (Explain in Remarks) of hydrophytic vegetation and
2.5 cm M	cky Peat o			F)	(MLF	RA 72 & 7	73 of LR	К Н)		d hydrology must be present, a disturbed or problematic
2.5 cm M 5 cm Mu	cky Peat o	or Peat (S3		F)	(MLF	RA 72 & 7	73 of LR	к н)		d hydrology must be present, s disturbed or problematic.
2.5 cm M 5 cm Mud Restrictive L	cky Peat o	or Peat (S3		")	(MLF	RA 72 & 7	73 of LR	К Н)		and the second se
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc	cky Peat o _ayer (if pi ches):	or Peat (S3 resent):) (LRR F	_					unless Hydric Soil	s disturbed or problematic.
2.5 cm M 5 cm Mud Restrictive L Type: Depth (inc Remarks: Dis	cky Peat o ayer (if pr ches): stinct red	or Peat (S3 resent):) (LRR F	_					unless Hydric Soil	s disturbed or problematic.
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG	cky Peat o _ayer (if pr ches): stinct red GY	or Peat (S3 resent):) (LRR F	_					unless Hydric Soil	s disturbed or problematic.
2.5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG	cky Peat o Layer (if pro- ches): stinct red GY drology In-	or Peat (S3 resent): loximorph dicators:) (LRR F	entration	s common v	within th			Unless Hydric Soil layer.	s disturbed or problematic.
2.5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOO Wetland Hyd Primary Indica	cky Peat o ayer (if pro- ches): stinct red GY drology In- cators (min	or Peat (S3 resent): loximorph dicators: imum of or) (LRR F	entration	s common v all that apply	within th			Unless Hydric Soil layer. Seconda	s disturbed or problematic.
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V	cky Peat o ayer (if pro- ches): stinct red GY drology In sators (mini- Water (A1)	or Peat (S3 resent): oximorph dicators: imum of or) (LRR F	entration:	s common v all that apply Salt Crust (within the	e dark s		Hydric Soil layer. <u>Seconda</u>	s disturbed or problematic.
2.5 cm Mu 5 cm Mu Crype: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wat	cky Peat o Layer (if pro- ches): stinct red GY drology In cators (mini- Water (A1) ter Table (or Peat (S3 resent): oximorph dicators: imum of or) (LRR F	entration:	s common v all that apply Salt Crust (Aquatic Inv	within the	e dark s		Hydric Soil layer. <u>Seconda</u>	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8)
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Y High Wat Y Saturatio	cky Peat o Layer (if pro- ches): stinct red GY drology In- cators (mini Water (A1) ter Table (on (A3)	or Peat (S3 resent): oximorph dicators: imum of or) (LRR F	entration:	s common v all that apply Salt Crust (Aquatic Inv Hydrogen S	within the) B11) ertebrate Sulfide Oo	e dark s s (B13) dor (C1)	urface	Hydric Soil layer. Seconda Sur Spa Dra	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10)
2.5 cm Mu 5 cm Mu Cestrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indic: Surface V High Wat Saturatio Water Ma	cky Peat o ayer (if pro- ches): stinct red GY drology In- cators (mini- Water (A1) ter Table (on (A3) arks (B1)	or Peat (S3 resent): loximorph dicators: imum of or) A2)) (LRR F	entration:	s common v all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor	within the) B11) ertebrate Sulfide Oc n Water T	e dark s s (B13) dor (C1) Table (C2	urface	Hydric Soil layer. Second: Sur Spa Dra Oxi	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indic: Surface V High Wat G Saturatio Water Ma Sedimen	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): loximorph dicators: imum of or) A2) (B2).) (LRR F	entration:	s common v all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized R	within the within	e dark s s (B13) dor (C1) "able (C2 res on Li	urface	Hydric Soil layer. Seconda Sur Spa Dra Oxi ots (C3) (v	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled)
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wate High Wate Saturatio U Saturatio U Sediment Drift Dep	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2)) (LRR F	entration:	s common v all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n	within the within the bill B11) ertebrate Sulfide Od hizosphe ot tilled)	e dark s s (B13) dor (C1) Table (C2 res on Li	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Dra Oxiots (C3) (v Cra	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C vhere tilled) yfish Burrows (C8)
2.5 cm Mu 5 cm Mu Cestrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2)) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o	within the within the bill B11) ertebrate Sulfide Oc h Water T hizosphe ot tilled) of Reduce	e dark s s (B13) dor (C1) Table (C2 res on Li ed Iron (C	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Dra Oxio ots (C3) (v Cra Sat	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C vhere tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9)
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo	cky Peat o Layer (if pro- ches): stinct red GY drology In- cators (mini- Water (A1) ter Table (on (A3) arks (B1) it Deposits posits (B3) it or Crust i osits (B5)	or Peat (S3 resent): oximorph dicators: imum of or A2) (B2) (B2)) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o Thin Muck	within the within the bill entebrate Sulfide Oc n Water T hizosphe ot tilled) of Reduce Surface (e dark s s (B13) dor (C1) "able (C2 res on Li ed Iron (C C7)	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Dra Oxio ots (C3) (v Cra Sat V Geo	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
2.5 cm Mu 5 cm Mu Cestrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dep Algal Mat Iron Depc Inundatio	cky Peat o ayer (if pro- ches): stinct red GY drology In- cators (mini- Water (A1) ter Table (on (A3) arks (B1) th Deposits posits (B3) tor Crust (posits (B5) on Visible (or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2) (B2) (B4) on Aerial Ir) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o	within the within the bill entebrate Sulfide Oc n Water T hizosphe ot tilled) of Reduce Surface (e dark s s (B13) dor (C1) "able (C2 res on Li ed Iron (C C7)	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Oxions (C3) (V Cra Sati V Geo V FAC	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOG Wetland Hyd Primary Indica Surface V High Wat Saturatio Water Ma Sediment Drift Dept Algal Mat Iron Dept Water-St	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2) (B2) (B4) on Aerial Ir) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o Thin Muck	within the within the bill entebrate Sulfide Oc n Water T hizosphe ot tilled) of Reduce Surface (e dark s s (B13) dor (C1) "able (C2 res on Li ed Iron (C C7)	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Oxions (C3) (V Cra Sati V Geo V FAC	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2)
2.5 cm M 5 cm Mu 5 cm Mu Restrictive L Type: Depth (inc Remarks: Dis YDROLOO Wetland Hyd Primary Indica Surface V High Wate Saturatio Water Ma Sediment Drift Dept Algal Mate Iron Dept Inundatio Water-Sta Field Observ	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): loximorph dicators: imum of or) A2) (B2) (B2) (B4) on Aerial Ir ves (B9)) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized RI (where n Presence o Thin Muck : Other (Expl	within the within the B11) ertebrate Sulfide Oo h Water T hizosphe ot tilled) of Reduce Surface (lain in Re	e dark s s (B13) dor (C1) "able (C2 res on Li ed Iron (C C7)	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Oxions (C3) (V Cra Sati V Geo V FAC	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
	cky Peat o Layer (if pro- ches):	or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2) (B2) (B4) on Aerial Ir ves (B9) ? Ye) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o Thin Muck	within the within the B11) ertebrate Sulfide Od hizosphe ot tilled) of Reduce Surface (lain in Re hes):	e dark s s (B13) dor (C1) "able (C2 res on Li ed Iron (C C7) emarks)	urface) ving Roc	Hydric Soil layer. Seconda Sur Spa Dra Oxions (C3) (V Cra Sati V Geo V FAC	ary Indicators (minimum of two required face Soil Cracks (B6) arsely Vegetated Concave Surface (B8) inage Patterns (B10) dized Rhizospheres on Living Roots (C where tilled) yfish Burrows (C8) uration Visible on Aerial Imagery (C9) omorphic Position (D2) C-Neutral Test (D5)
2.5 cm Mu 5 cm Mu Kestrictive L Type: Depth (inc Remarks: Dis VDROLOG Wetland Hyd Primary Indica V Surface V High Wat Saturatio Water Ma Sediment Drift Dept Algal Mat Iron Dept Inundatio	cky Peat o ayer (if pro- ches):	or Peat (S3 resent): oximorph dicators: imum of or) A2) (B2) (B2) (B4) on Aerial Ir ves (B9) ? Ye Ye Ye) (LRR F	entration:	all that apply all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized Ri (where n Presence o Thin Muck 3 Other (Expl	within the within the B11) ertebrate Sulfide Oc n Water T hizosphe ot tilled) of Reduce Surface (lain in Re hes): hes):	e dark s s (B13) dor (C1) Table (C2 res on Li ed Iron (C C7) smarks) 3	urface) ving Roc 4)	Hydric Soil layer. Seconda Sur Spa Dra Oxions (C3) (V Cra Sati V Geo V FAC	A disturbed or problematic.

Project/Site: JTX Tunnicliff	c	City/Co	unty: Bi	ig Horn		_	Sampling	Date:	6/16/2022
Applicant/Owner: MDT		1			State: N	Iontana	Sampling I	Point: _	DP09U
Investigator(s): R Jones, M Hickey	s	Section	n, Towns	ship, Rang	ge: 15	5 11	N	33E	
Landform (hillslope, terrace, etc.). Floodplain		Local r	relief (co	ncave, co	onvex, none):	Hummo	cky	Slop	e (%): 9
Subregion (LRR): LRR E	Lat:		45.	.839548	Long:	-1	07.600206	Datun	NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils,	wet				N	VI classifi	cation: Not i	nappe	d
Are climatic / hydrologic conditions on the site typical for this	time of yea	ar? Ye	s 🗸	No_	(If no, e	xplain in f	Remarks.)		
Are Vegetation, Soil, or Hydrology sig	gnificantly d	disturbe	ed?	Are "N	Iormal Circum	stances"	present? Y	es 🔽	No
Are Vegetation, Soil, or Hydrology na	turally prob	blemati	ic?	(If nee	ded, explain a	any answ	ers in Remar	ks.)	
SUMMARY OF FINDINGS – Attach site map s	howing	samp	pling p	oint lo	cations, tr	ansects	s, importa	nt fea	atures, etc.
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No Wetland Hydrology Present? Yes No Remarks: Upland sample point adjacent to DP09w an soil pit, the sample point did not contain we	d wetland	l cell 1	within a	ampled A Wetland	1? marginal hy	dric soils	No	erved v	vithin the d within a
wetland.		0,	,						
VEGETATION - Use scientific names of plant		امرا	licator						
Image: Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Species?		atus		Dominance				
					Number of that are OB			() (A)
					Total Numb Species Ac			З	³ (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)					Percent of I That Are Ol			0.0) % (A/B)
					Prevalence				
					OBL specie	<u>% Cover</u>	of: 0 X 1	Mu	ltiply by: 0
					FACW specie		0 X 2		0
					FAC specie		1 X 3		3
Herbaceous Stratum Plot size (5 Foot Radius)					FACU spec		40 X 4		160
Bromus inermis 5		UPL			UPL specie	S	46 X 5		230
Bromus japonicus 1		NL			Column Tot	als	87 (A)		393 (B)
Elymus hispidus 40	\checkmark	NL			Prevale	ence Inde	ex = B/A =		4.52
Elymus repens 20		FAC				-	tion Indicate		
Elymus trachycaulus20Lepidium perfoliatum1		FACI FAC			_	•	t for Hydropl		egetation
		TAO			2 - [Dominanc	e Test is >50)%	
					🗌 3-F	Prevalenc	e Index is <=	3.0	
						porting da	jical Adaptat ita in remark		
					🗌 5 - V	Vetland N	lon-Vascular	Plants	
Woody Vine Stratum Plot size (30 Foot Radius)					Prot	lematic F	lydrophytic \	/egetati	on (Explain)
					Indicators of present, unle				
Percent Bare Ground 13					Hydrophyti Present?	c Vegeta	tion Ye	s 🗌	NO 🗹

Remarks:

Due to the high proportions of upland and FACU species, no hydrophytic vegetation indicators are present.

Profile Description									Sampling Point: DP09U
	on: (De	scribe to the de	pth neede	d to docum	nent the i	ndicator	or confi	rm the absence of	indicators.)
Depth		Matrix oist) %	Calor		K Features		Loc ²	Texture	Demode
	Color (m		Color	(moist)	%	Type			Remarks
0-05 10)YR 4	4/2 100						Sandy Clay Loan	1
05-16 2.5	5Y 4	4/2 99	10YR	4/3	1	С	Μ	Sandy Loam	Very faint redox.
16+								Cobble Bottom	
			_					=	
						-			
			-						
Type: C=Concer							ed Sand		on: PL=Pore Lining, M=Matrix.
lydric Soil Indic	ators:	(Applicable to a	ll LRRs, u					Indicators fo	r Problematic Hydric Soils ³ :
Histosol (A1)					leyed Ma				:k (A9) (LRR I, J)
Histic Epiped			_		edox (S5				airie Redox (A16) (LRR F, G, H)
Black Histic (_		Matrix (S				ace (S7) (LRR G)
Hydrogen Su			_		Aucky Min	and the second second			ns Depressions (F16)
Stratified Lay			-		Sleyed Ma				H outside of MLRA 72 & 73)
1 cm Muck (A					d Matrix (F				Vertic (F18)
Thick Dark Si		Surface (A11)	-		ark Surfa d Dark Su				nt Material (TF2) llow Dark Surface (TF12)
Sandy Mucky			_		epression		,		plain in Remarks)
and the second sec		r Peat (S2) (LRF	G H)		ins Depre		16)		hydrophytic vegetation and
		Peat (S3) (LRR I			RA 72 & 7				ydrology must be present,
	, our or ,	our (00) (Eritti	<i>i</i>	(0 01 210			sturbed or problematic.
Restrictive Layer	r (if pres	sent):							
Туре:	1.1.1								
Depth (inches)	10							Hydric Soil Pr	esent? Yes 🗹 No 🗌
				1000111111		coa maa			
of con		wetland expan					N. 1 100		rphic features may be indicative
YDROLOGY	ntinued	wetland expan							
YDROLOGY Wetland Hydrolo	ntinued v	wetland expan	sion.	all that apply					Indicators (minimum of two required
YDROLOGY Wetland Hydrolo Primary Indicators	ogy India s (minim	wetland expan	sion.		0			Secondary	Indicators (minimum of two required
YDROLOGY Wetland Hydrolo Primary Indicators	ogy India s (minim er (A1)	wetland expan cators: um of one requir	sion.	Salt Crust ((B11)	s (B13)		Secondary	Indicators (minimum of two required e Soil Cracks (B6)
YDROLOGY Netland Hydrolo Primary Indicators Surface Wate High Water T	ogy India s (minim er (A1) fable (A2	wetland expan cators: um of one requir	sion.	Salt Crust (Aquatic Inv	() (B11) ertebrate:	1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C 1 C		<u>Secondary</u> Surface Sparse	Indicators (minimum of two required
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A	ogy India s (minim er (A1) fable (A2 3)	wetland expan cators: um of one requir	sion.	Salt Crust (Aquatic Inv Hydrogen S	/) (B11) rertebrate Sulfide Oc	lor (C1)		Secondary	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10)
YDROLOGY Netland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks	ogy India s (minim er (A1) Table (A2 3) (B1)	wetland expan cators: um of one requir ?)	sion.	Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor	() (B11) rertebrate: Sulfide Oc n Water T	lor (C1) able (C2)		Secondary	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C
YDROLOGY Netland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep	ogy India s (minim er (A1) fable (A2 .3) (B1) posits (B	wetland expan cators: um of one requir ?)	sion.	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R	() (B11) Sulfide Oc n Water T hizospher	lor (C1) able (C2)		Secondary Surface Sparse Draina Oxidize ss (C3) (whe	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled)
YDROLOGY Vetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift Deposits	tinued of ogy India s (minim er (A1) Table (A2 .3) (B1) .posits (B s (B3)	wetland expan	sion.	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n	() (B11) rertebrate: Sulfide Oc n Water T hizospher tot tilled)	tor (C1) able (C2) res on Liv	ing Root	Secondary Surface Sparse Draina Cxidize ts (C3) (whe Crayfis	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8)
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Vater Marks Sediment Dep Drift Deposits Algal Mat or C	tinued of ogy India s (minim er (A1) fable (A2 (B1) (B1) oposits (B s (B3) Crust (B-	wetland expan	sion.	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o	() (B11) rertebrate: Sulfide Od n Water T hizospher not tilled) of Reduce	lor (C1) able (C2) res on Liv d Iron (C	ing Root	Secondary Surface Sparse Draina Coxidize ts (C3) (whe Crayfis Satura	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9)
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	tinued of ogy India s (minim er (A1) Table (A2 .3) (B1) posits (B s (B3) Crust (B- s (B5)	wetland expan cators: um of one requir ?) 32) 4)	ed: check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o Thin Muck	() (B11) rertebrate: Sulfide Oc n Water T hizospher not tilled) of Reduce Surface ()	tor (C1) able (C2) res on Liv d Iron (C C7)	ing Root	Secondary Surface Sparse Draina Oxidize (C3) (whe Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2)
YDROLOGY Vetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits	ogy India s (minim er (A1) fable (A2 3) (B1) posits (B s (B3) Crust (B s (B5) isible on	wetland expan cators: um of one requir 2) 32) 4) Aerial Imagery (ed: check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o	() (B11) rertebrate: Sulfide Oc n Water T hizospher not tilled) of Reduce Surface ()	tor (C1) able (C2) res on Liv d Iron (C C7)	ing Root	Secondary Surface Sparse Draina Coxidize Ss (C3) Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) eutral Test (D5)
YDROLOGY Vetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or C Iron Deposits Inundation Vi Water-Staine	tinued of ogy India s (minim er (A1) Table (A2 3) (B1) posits (B s (B3) Crust (B s (B3) Crust (B s (B5) isible on ed Leave	wetland expan cators: um of one requir 2) 32) 4) Aerial Imagery (ed: check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o Thin Muck	() (B11) rertebrate: Sulfide Oc n Water T hizospher not tilled) of Reduce Surface ()	tor (C1) able (C2) res on Liv d Iron (C C7)	ing Root	Secondary Surface Sparse Draina Coxidize Ss (C3) Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2)
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vi Water-Staine Field Observatio	tinued of ogy India s (minim er (A1) fable (A2 (B1) (B1) (B1) (B1) (B1) (Crust (B4) s (B3) Crust (B4) s (B5) isible on s (Leave ons:	wetland expan cators: um of one requir 2) 32) 4) Aerial Imagery (ed: check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck Other (Exp	() (B11) rertebrate: Sulfide Oc n Water T hizospher iot tilled) of Reduce Surface () lain in Re	tor (C1) able (C2) res on Liv d Iron (C C7)	ing Root	Secondary Surface Sparse Draina Coxidize Ss (C3) Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) eutral Test (D5)
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A) Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vi Water-Staine Field Observatio Surface Water Pro-	tinued of ogy India s (minim er (A1) Table (A2 (B1) (B1) (B1) (B1) (B1) (Crust (B- s (B3) Crust (B- s (B5)) isible on ed Leave ons: resent?	vetland expan	ed; check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o Thin Muck Other (Exp	() (B11) rertebrate: Sulfide Oc n Water T hizospher tot tilled) of Reduce Surface (lain in Re	tor (C1) able (C2) res on Liv d Iron (C C7)	ing Root	Secondary Surface Sparse Draina Coxidize Ss (C3) Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) eutral Test (D5)
Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dej Drift Deposits Algal Mat or O Iron Deposits Inundation Vi Water-Staine Field Observatio Surface Water Pres	tinued of ogy India s (minim er (A1) Table (A2 3) (B1) posits (B3) Crust (B4 s (B3) Crust (B4 s (B5) isible on ed Leave ons: resent? sent?	xetland expan cators: <u>um of one requir</u> 2) 32) 4) Aerial Imagery (s (B9) Yes Yes	ed: check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence of Thin Muck Other (Exp	() (B11) rertebrate: Sulfide Oc n Water T hizospher toot tilled) of Reduce Surface (lain in Re shes):	tor (C1) able (C2) res on Liv d Iron (C C7)	fing Root	Secondary Surface Sparse Draina Oxidize (C3) (whe Crayfis Satura Geome FAC-N Frost-F	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) eutral Test (D5) feave Hummocks (D7) (LRR F)
YDROLOGY Wetland Hydrolo Primary Indicators Surface Wate High Water T Saturation (A Water Marks Sediment Dep Drift Deposits Algal Mat or C Iron Deposits Inundation Vi Water-Staine Field Observatio Surface Water Pre	tinued of ogy India s (minim er (A1) Gable (A2 (B1) (B1) (B1) (B1) (Crust (B- s (B3) (Crust (B- s (B3)) (Crust (B- s (B5)) isible on ed Leave ons: resent? esent?	vetland expan	ed; check a	Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence of Thin Muck Other (Exp	() (B11) rertebrate: Sulfide Oc n Water T hizospher toot tilled) of Reduce Surface (lain in Re shes):	tor (C1) able (C2) res on Liv d Iron (C C7)	fing Root	Secondary Surface Sparse Draina Coxidize Ss (C3) Crayfis Satura Geomo	Indicators (minimum of two required e Soil Cracks (B6) ly Vegetated Concave Surface (B8) ge Patterns (B10) ed Rhizospheres on Living Roots (C re tilled) h Burrows (C8) tion Visible on Aerial Imagery (C9) orphic Position (D2) eutral Test (D5) feave Hummocks (D7) (LRR F)

Remarks No evidence of wetland hydrology observed.

Project/Site: JTX Tunnicliff	City/County: Big Horn		Sampling Date: 6/16/20			2022		
Applicant/Owner: MDT		State	Mon	tana	Sampling Po	int: D	P09W	
Investigator(s): R Jones, M Hickey	Section, Township, Range: _		15	1N		33E		
Landform (hillslope, terrace, etc.). Floodplain	_ Local relief (concave, convex, none): Conve				ex Slope (%		e (%):	4
Subregion (LRR); LRR E Lat:	45.839463 Long:				07.600228 Datum: NAD 83			83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet			NWI c	lassific	ation: Not m	appeo	ł	
Are climatic / hydrologic conditions on the site typical for this time of year vegetation, Soil, or Hydrology significantly Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed,	al Circu explaii	imstai n any	nces" p answei	emarks.) present? Yes rs in Remarks importan	5.)	No_	
Hydrophytic Vegetation Present? Yes No	Is the Sampled Area				,			

Hydric Soil Present?	Yes V No	within a Wetland?	Voc V No
Wetland Hydrology Present?	Yes 🗸 No	within a wetana:	
Remarks: PEM wetland located	within wetland cell 10/11.		

VEGETATION - Use scientific names of plant	S	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 5 X 1 5
		FACW species 30 X 2 60
		FAC species 0 X 3 0
		FACU species 5 X 4 20
Herbaceous Stratum Plot size (5 Foot Radius)		UPL species 0 X 5 0
Distichlis spicata 20	FACW	Column Totals 40 (A) 85 (B)
Elymus repens 5	FACU	
Juncus balticus 10	✓ FACW	Prevalence Index = B/A = 2.13
Schoenoplectus pungens 5	OBL	Hydrophytic Vegetation Indicators
		1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		Problematic Hydrophytic Vegetation (Explain)
<u>Woody Vine Stratum</u> Plot size (30 Foot Radius)		
		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
		Hydrophytic Vegetation Yes ✔ NO □
Percent Bare Ground 60		

Remarks:

-

A positive dominance test and a prevalence index below 3 indicate the presence of hydrophytic vegetation.

Depth	Matrix				x Features			-
(inches) Co	lor (moist)	%	Color	(moist)	%	Type ¹	Loc ²	
)-03 10YI	R 3/1	88	Ν	2.5/0	5	D	Μ	Sandy Loam
0-03 10YF	R 3/1	88	7.5YR	4/4	7	С	М	Sandy Loam
03-16 2.5Y	4/1	100						Loamy Sand Many cobbles throughout.
Type: C=Concentr lydric Soil Indicat				nless other	wise note	ed.)	ed Sand	Indicators for Problematic Hydric Soils ² :
Histosol (A1) Histic Epipedon Black Histic (A3 Hydrogen Sulfid Stratified Layen 1 cm Muck (A9) Depleted Below Thick Dark Surf Sandy Mucky M 2.5 cm Mucky Pe	a) de (A4) s (A5) (LRR) (LRR F, G) Dark Surfa face (A12) fineral (S1) Peat or Peat	, H) ce (A11) (S2) (LRR	G, H)	Sandy R Stripped Loamy M Depleted Redox D Depleted Redox D High Pla	Bleyed Ma Redox (S5 Mucky Min Bleyed Ma d Matrix (F Dark Surfa d Dark Su Depression ins Depre RA 72 & 7) 6) atrix (F1) F3) ce (F6) rface (F7) ns (F8) ssions (') F16)	 1 cm Muck (A9) (LRR I, J) Coast Prairie Redox (A16) (LRR F, G, H) Dark Surface (S7) (LRR G) High Plains Depressions (F16) (LRR H outside of MLRA 72 & 73) Reduced Vertic (F18) Red Parent Material (TF2) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) ³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
Restrictive Layer (i Type: Depth (inches): _ Remarks: Required required	ments for r	_	surface	indicator n	net, with	the exc	eption o	Hydric Soil Present? Yes <u>No</u> No of thickness. Surface is 3" thick, as opposed to the
YDROLOGY								
Vetland Hydrology	Indicators							A CARL A ALL ALL
rimary Indicators (i	minimum of	one require	d; check	all that apply	()			Secondary Indicators (minimum of two required
Surface Water Tab High Water Tab Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (I Algal Mat or Cri Iron Deposits (E Inundation Visit Water-Stained I Field Observations	ole (A2) sits (B2) 33) ust (B4) 35) ole on Aerial Leaves (B9)			Salt Crust of Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence of Thin Muck Other (Exp	vertebrate: Sulfide Oc n Water T hizospher not tilled) of Reduce Surface (i	tor (C1) able (C2 res on Li d Iron (C C7)	ving Roo	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Field Observations Surface Water Prese Water Table Presen Saturation Present? (includes capillary fr Describe Recorded	ent? It? inge)	Yes 🔽 Yes 🔽 Yes 🔽	No No No	_ Depth (inc _ Depth (inc	ches): ches):	8 0 evious in	1	etland Hydrology Present? Yes No s) if available:
	e of wetlan eres on liv		gy preser	nt in soil sa	turation	to the s	urface, a	a water table depth at 8 inches, and oxidized

Project/Site: JIX Tunnicliff		City/County: Big Horn			Sampling Date: 6/16/2022	
Applicant/Owner: MDT			State: Mo	ntana	Sampling Poin	t: DP10U
Investigator(s): R Jones, M Hickey		Section, Township, Range: _	15	1N		
Landform (hillslope, terrace, etc.). Floodplain		Local relief (concave, conve	x, none): <u>Hu</u>	ummoc	ky s	lope (%):2
Subregion (LRR): LRR E	Lat:	45.839807 Long	g:	-10	7.598504 Da	tum: NAD 83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils,	wet		NWI	classific	ation: Not map	ped
	gnificantly aturally pr	v disturbed? Are "Norma roblematic? (If needed,	explain any	ances" p / answei	resent? Yes _ rs in Remarks.)	
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No		Is the Sampled Area within a Wetland?				-

Remarks: Upland sample point adjacent to DP10w and wetland cell 12/13. Although hydric soils were observed within the soil pit, the sample point did not contain wetland hydrology or hydrophytic vegetation and therefore is not located within a wetland.

VEGETATION - Use scientific names of plants									
Tree Stratum Plot size ((30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet						
			Number of Dominant Species that are OBL, FACW or FAC:	0 (A)					
			Total Number of Dominant Species Across All Strata:	1 (B)					
Sapling/Shrub Stratum	Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 % (A/B)					
	(10 11111)		Prevalence Index worksheet						
			Total % Cover of:	Multiply by:					
			OBL species 0 X 1	0					
			FACW species 0 X 2	0					
			FAC species 0 X 3	0					
			FACU species 15 X 4	60					
Herbaceous Stratum	Plot size (5 Foot Radius)		UPL species 75 X 5	375					
Elymus hispidus	75	▼ NL	Column Totals 90 (A)	435 (B)					
Poa pratensis	10	FACU							
Schedonorus pratensis	5 5	FACU	Prevalence Index = B/A =	4.83					
			Hydrophytic Vegetation Indicators						
			1 - Rapid Test for Hydrophytic Vegetation						
			☐ 2 - Dominance Test is >50%						
			3 - Prevalence Index is <= 3.0						
			4 - Morphological Adaptatior supporting data in remarks of sheet.						
			5 - Wetland Non-Vascular Pl	lants					
			Problematic Hydrophytic Veg	getation (Explain)					
Woody Vine Stratum Plot size (30 Foot Radius)			Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.						
Percent Bare Grou	und 10		Hydrophytic Vegetation Present? Yes	□ NO 🗹					
Remarks:									

No hydrophytic vegetation indicators observed.

Sampling Point: DP10U

Depth	-	Matrix				x Feature	s	1.122		
(inches)	Color	(moist)	%	Color	(moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-10	10YR	4/2	100						Clay Loam	
10-22	2.5Y	5/2	90	7.5YR	4/4	10	С	Μ	Clay Loam	
							<u>i</u>			
							<u> </u>			
	-			_						
				-						
			-							
			-		_			_		
	Concentratio							ed Sand G		ation: PL=Pore Lining, M=Matrix.
Hydric Soil		s: (Applic	able to a	ll LRRs, u						for Problematic Hydric Soils ² ;
Histoso		21		_		Gleyed Ma				luck (A9) (LRR I, J)
	pipedon (A listic (A3)	(2)				Redox (S5 d Matrix (S				Prairie Redox (A16) (LRR F, G, H) urface (S7) (LRR G)
	en Sulfide	(A4)				Mucky Mir				lains Depressions (F16)
	d Layers (/		=)			Gleyed Ma				R H outside of MLRA 72 & 73)
	uck (A9) (L			-	✓ Deplete				Reduce	ed Vertic (F18)
	ed Below D		e (A11)	-		Dark Surfa				arent Material (TF2)
	ark Surfac			_		d Dark Su Depressio)		hallow Dark Surface (TF12)
the second se	Mucky Mine Mucky Pea		52) /I RR	G H)	and the second se	ains Depressio		16)		Explain in Remarks) of hydrophytic vegetation and
	ucky Peat		and the second second			RA 72 & 1				hydrology must be present,
			1.00	÷						disturbed or problematic.
Restrictive	Layer (if p	oresent):								
Type:										
Depth (ir Remarks: F	1.1.1					ion withir	the dep	oleted ma	the second se	Present? Yes <u>V</u> No of redoximorphic features may be
Depth (ir Remarks: F ir	Prominent ndicative o					ion withir	i the dep	pleted ma	the second se	a dealer and an
Depth (ir Remarks: F ir YDROLC	Prominent ndicative o	of continu	ed wetla			ion withir	i the dep	leted ma	the second se	a dealer and an
Depth (ir Remarks: F ir YDROLC	Prominent ndicative o DGY ydrology Ir	of continu	ed wetla	ind expan	ision.		i the dep	oleted ma	trix.Presence	of redoximorphic features may be
Depth (ir Remarks: F Ir YDROLC Wetland Hy Primary Indi	Prominent Indicative of DGY ydrology Ir icators (mir	of continu ndicators: nimum of o	ed wetla	ind expan	ision. all that appl	y)	i the dep	oleted ma	trix.Presence	of redoximorphic features may be
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface	Prominent Indicative of OGY vdrology In icators (min e Water (A1	of continu ndicators: nimum of o	ed wetla	ind expan	sion. all that appl Salt Crust	y) (B11)		oleted ma	trix.Presence <u>Seconda</u>	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6)
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface High W	Prominent ndicative of OGY vdrology In icators (min icators (min water (A1	of continu ndicators: nimum of o	ed wetla	ind expan	all that appl Salt Crust Aquatic In	y) (B11) vertebrate	s (B13)	oleted ma	trix.Presence <u>Seconda</u> Surf	of redoximorphic features may be ry Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8)
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface High W Saturat	Prominent ndicative of OGY vdrology In icators (min e Water (A1	of continu ndicators: nimum of o	ed wetla	ind expan	sion. all that appl Salt Crust	y) (B11) vertebrate Sulfide Or	s (B13) dor (C1)		trix.Presence Seconda Surf Surf Drai	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6)
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface High W Saturat Water M	Prominent ndicative of OGY vdrology In icators (min a Water (A1 vater Table ion (A3)	of continu ndicators: nimum of o) (A2)	ed wetla	ind expan	all that appl Salt Crust Aquatic In Hydrogen	y) (B11) vertebrate Sulfide O on Water 1	s (B13) dor (C1) Table (C2)	trix.Presence Seconda Surf Spa Drai Oxic	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8) nage Patterns (B10)
Depth (ir Remarks: F Ir YDROLC Wetland Hy Primary Indi Surface High W Saturat Water M Sedime	Prominent ndicative of OGY vdrology Ir icators (mir a Water (A1 ater Table ion (A3) Marks (B1)	of continu ndicators: nimum of o) (A2) s (B2)	ed wetla	ind expan	all that appl Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate Sulfide O on Water 1	s (B13) dor (C1) Table (C2 res on Liv)	trix.Presence Seconda Surf Spai Contact (C3) Surf Surf Surf	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8) nage Patterns (B10) lized Rhizospheres on Living Roots (C3
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface High W Saturat Water M Sedime Drift De	Prominent ndicative of OGY vdrology Ir icators (mir e Water (A1 vater Table ion (A3) Marks (B1) ent Deposite	of continu ndicators: nimum of o) (A2) s (B2)	ed wetla	ind expan	all that appl Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F	y) (B11) vertebrate Sulfide Oo on Water 1 Rhizosphe not tilled)	s (B13) dor (C1) fable (C2 res on Liv) ving Roots	trix.Presence Seconda Seconda Spai Drai Cray (C3) Cray	of redoximorphic features may be ry Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8) nage Patterns (B10) lized Rhizospheres on Living Roots (C3 here tilled)
Depth (ir Remarks: F Ir YDROLC Vetland Hy Crimary Indi Surface High W Saturat Vater M Sedime Drift De Algal M Iron De	Prominent ndicative of OGY /drology In icators (min a Water (A1 /ater Table ion (A3) Marks (B1) ant Deposits (B3) lat or Crust posits (B5)	of continu ndicators: nimum of o) (A2) s (B2) (B4)	ne requir	ed: check a	all that appl Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized F (where Presence Thin Muck	(y) (B11) vertebrate Sulfide O on Water 1 Rhizosphe not tilled) of Reduce Surface (s (B13) dor (C1) Table (C2 res on Liv ed Iron (C C7)) ving Roots	trix.Presence Seconda Surf Surf Spai Drai Oxic (C3) (W Good Satu Good Good Good Good Good Good Good Goo	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8) hage Patterns (B10) lized Rhizospheres on Living Roots (C3 here tilled) fish Burrows (C8) rration Visible on Aerial Imagery (C9) morphic Position (D2)
Depth (ir Remarks: F Ir YDROLC Vetland Hy Primary Indi Surface High W Saturat Water M Sedime Algal M Iron De Inundat	Prominent ndicative of OGY vdrology Ir icators (mir a Water (A1 a Water (A1 b Water (B1)) a Water (B1) a W	of continu ndicators: nimum of o) (A2) s (B2) (B4) on Aerial I	ne requir	ed: check a	all that appl Salt Crust Aquatic In Hydrogen Dry-Seaso Oxidized P (where Presence	(y) (B11) vertebrate Sulfide O on Water 1 Rhizosphe not tilled) of Reduce Surface (s (B13) dor (C1) Table (C2 res on Liv ed Iron (C C7)) ving Roots	trix.Presence	of redoximorphic features may be ny Indicators (minimum of two required ace Soil Cracks (B6) rsely Vegetated Concave Surface (B8) nage Patterns (B10) lized Rhizospheres on Living Roots (C3 here tilled) (fish Burrows (C8) (ration Visible on Aerial Imagery (C9) morphic Position (D2) -Neutral Test (D5)
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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: JTX Tunnicliff	City/County: Big Horn			Sampling	Date:	6/16/	2022
Applicant/Owner: MDT	S	state	Montana	Sampling	Point:	DP10W	
Investigator(s): R Jones, M Hickey	Section, Township, Range:	1	5 11	N	33E	_	
Landform (hillslope, terrace, etc.). Floodplain	Local relief (concave, convex, r	none)	Concave	e	Slop	oe (%): _	5
Subregion (LRR); LRR E Lat:	45.839866 Long:	-	-	107.59856	Datu	m: NAD	83
Soil Map Unit Name: Hh: Haverson and Lohmiller soils, wet		N	WI classifi	cation: Not	mappe	ed	
Are climatic / hydrologic conditions on the site typical for this time of years vegetation, Soil, or Hydrology significantly Are Vegetation, Soil, or Hydrology naturally pr	v disturbed? Are "Normal o oblematic? (If needed, ex	Circu xplain	any answ	present? Y ers in Remai	rks.)	-0.6	
Hydrophytic Vegetation Present? Yes Vegetation Present?	Is the Sampled Area				_		

Remarks: PEM wetland located	within watland call 12/12	1	
Wetland Hydrology Present?	Yes 🖌 Na	within a vveuana:	100 <u> </u>
Hydric Soil Present?	Yes V No	within a Wetland?	Ves V No

PEM wetland located within wetland cell 12/13.

VEGETATION - Use scientific names of plant	S	
Tree Stratum Plot size (30 Foot Radius) Absolute % Cover:	Domiant Indicator Species? Status	Dominance Test worksheet
		Number of Dominant Species that are OBL, FACW or FAC: 2 (A)
		Total Number of Dominant Species Across All Strata: 2 (B)
Sapling/Shrub Stratum Plot size (15 Foot Radius)		Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)
		Prevalence Index worksheet
		Total % Cover of: Multiply by:
		OBL species 7 X 1 7
		FACW species 20 X 2 40
		FAC species 0 X 3 0
		FACU species 5 X 4 20
Herbaceous Stratum Plot size (5 Foot Radius)		UPL species 0 X 5 0
Alopecurus arundinaceus 10	FACW	Column Totals 32 (A) 67 (B)
Eleocharis palustris 2	OBL	
Elymus repens 5	FACU	Prevalence Index = B/A = 2.09
Hordeum jubatum 10	FACW	Hydrophytic Vegetation Indicators
Typha angustifolia 5	OBL	1 - Rapid Test for Hydrophytic Vegetation
		✓ 2 - Dominance Test is >50%
		✓ 3 - Prevalence Index is <= 3.0
		4 - Morphological Adaptations (Provide supporting data in remarks or on separate sheet.
		5 - Wetland Non-Vascular Plants
		□ Problematic Hydrophytic Vegetation (Explain)
Woody Vine Stratum Plot size (30 Foot Radius)		Indicators of hydric sil and wetland hydrology must be present, unless disturbed or problematic for #3, 4, 5.
Percent Bare Ground 68		Hydrophytic Vegetation Present? Yes ✔ NO

Remarks:

Evidence of hydrophytic vegetation includes a positive dominance test and a prevalence index below three.

(inches)		Matrix	-	_		Feature			
	Color (n	noist)	%	Color	(moist)	%	Type	Loc ²	TextureRemarks
0-07	2.5Y	4/2	90	7.5YR	4/6	10	С	Μ	Sandy Loam
)7-12	2.5YR	4/2	95	7.5YR	5/8	5	CS		Gravelly Sand
				-			-	-	
-	-	-		_			_		
	-		-	-	_		-		
	oncentration							ed Sand	
lydric Soil	Indicators:	(Applicab	le to all	LRRs, u	nless other	wise not	ed.)		Indicators for Problematic Hydric Soils ² ;
Histoso	I (A1)			[Sandy G	leyed Ma	trix (S4)		1 cm Muck (A9) (LRR I, J)
Histic E	pipedon (A2)	61		[Sandy R	edox (S5)		Coast Prairie Redox (A16) (LRR F, G, H)
Black H	istic (A3)				Stripped	Matrix (S	6)		Dark Surface (S7) (LRR G)
	en Sulfide (A					Aucky Mir			High Plains Depressions (F16)
	d Layers (A5			-		Sleyed Ma			(LRR H outside of MLRA 72 & 73)
	uck (A9) (LR	COMPANY STREET			 Depleted 				Reduced Vertic (F18)
	d Below Darl	and the second se	A11)	-	and the second se	ark Surfa	1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A		Red Parent Material (TF2)
	ark Surface (-		d Dark Su		7)	Very Shallow Dark Surface (TF12)
the second se	Aucky Minera			ant A	and the second second second	epression			Other (Explain in Remarks)
	Mucky Peat of		A. A	э, H) _		ins Depre			³ Indicators of hydrophytic vegetation and
5 cm M	ucky Peat or	Peat (S3) ((LRR F)		(MLF	RA 72 & 7	3 of LR	R H)	wetland hydrology must be present, unless disturbed or problematic.
Restrictive	Layer (if pre	sent):		_				_	
Type:									Concept Carlot and The Carlot
Depth (in	ches):								Hydric Soil Present? Yes No
0.	ollapsing in		pit wan		ig in the ne				
VDBOLO	CV					JIC.			
2 2 4 C 2 2 2 E	Star Gharine	icatore:							
Wetland Hy	drology Ind		require	t check :		6			Secondary Indicators (minimum of two required
Primary Indi	drology Indicators (minin		require		all that apply	/)			Secondary Indicators (minimum of two required
Wetland Hy Primary Indi	drology Ind cators (minin Water (A1)	num of one	require		all that apply Salt Crust (/) (B11)	s /P12)		Surface Soil Cracks (B6)
Wetland Hy Primary Indi Surface	drology Ind cators (minin Water (A1) ater Table (A	num of one	require		all that apply Salt Crust (Aquatic Inv	(B11) vertebrate	10 C (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
Wetland Hy Primary Indi Surface V High Wa V Saturati	drology Indi cators (minin Water (A1) ater Table (A on (A3)	num of one	require		all that apply Salt Crust (Aquatic Inv Hydrogen S	() (B11) rertebrate Sulfide Od	dor (C1)		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10)
Wetland Hy Primary Indi Surface I High Wa Saturati	drology Ind cators (minin Water (A1) ater Table (A on (A3) Marks (B1)	num of one 2)	require		all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seaso	() (B11) rertebrate Sulfide Od n Water T	dor (C1) able (C2		Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C
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Wetland Hy Primary Indi Surface High Wa Saturati Vater N Sedime Algal Ma Iron Dep Inundati Water-S Field Obser Surface Water Saturation P	drology Indi cators (minin Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B5) at or Crust (B5) ion Visible or Stained Leave vations: ter Present? Present?	num of one 2) B2) A Aerial Ima es (B9) Yes Yes Yes Yes	agery (B		all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence c Thin Muck Other (Exp	() (B11) rertebrate Sulfide Oc n Water T hizosphe tot tilled) of Reduce Surface (lain in Re shes):	dor (C1) able (C2 res on Li d Iron (C C7) marks)	ving Root :4)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Crainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5)
Wetland Hy Primary Indi Surface High Wa Saturati Vater N Sedime Algal Ma Iron Dep Inundati Water-S Field Obser Surface Water Saturation P (includes ca	drology Indi cators (minin Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) ion Visible or Stained Leave vations: ter Present? Present? pillary fringe)	num of one 2) B2) 34) 1 Aerial Ima es (B9) Yes Yes Yes	agery (B	No No	all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Season Oxidized R (where n Presence o Thin Muck Other (Exp _ Depth (inc _ Depth (inc	() (B11) rertebrate Sulfide Od n Water T hizosphe not tilled) of Reduce Surface (lain in Re shes): shes):	dor (C1) Table (C2 res on Li d Iron (C C7) marks) 4 0	ving Root 24) We	 Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C ts (C3) (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)
Wetland Hy Primary Indi Surface High Wa Saturati Vater N Sedime Drift De Algal Ma Iron De Inundati Vater-S Field Obser Surface Wate Saturation P (includes ca Describe Re	drology Indi cators (minin Water (A1) ater Table (A on (A3) Marks (B1) nt Deposits (B3) at or Crust (B posits (B3) at or Crust (B posits (B5) ion Visible or Stained Leave vations: ter Present? Present? pillary fringe) corded Data	2) B2) A Aerial Ima es (B9) Yes Yes Yes (stream ga	agery (B	7)	all that apply Salt Crust (Aquatic Inv Hydrogen S Dry-Seasor Oxidized R (where n Presence o Thin Muck Other (Exp _ Depth (inc _ Depth (inc _ Depth (inc well, aerial p	() (B11) rertebrate Sulfide Od n Water T hizosphe tot tilled) of Reduce Surface (lain in Re Surface): thes): thes): 	dor (C1) rable (C2 res on Li d Iron (C C7) marks) 4 0 evious in	ving Root 24) We spections	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) Orainage Patterns (B10) Oxidized Rhizospheres on Living Roots (C (where tilled) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) FAC-Neutral Test (D5) Frost-Heave Hummocks (D7) (LRR F)

MDT Montana Wetland Assessment Form (revised March 2008)

1. Project name	JTX-Tu	unnicliff			2. MDT p	roject#	ST	TPP STWD	05 (05	6)	Con	trol#	9680000
3. Evaluation D	oate 6/18/2	021 4. Eva	luators	R. Jo	nes, M. Hic	key 5.	Wet	land/Site#	(s)	JTX Tun	nicliff		
6. Wetland Loca	ation(s): T	1N	R	33E	Sec1	10	Т	1N	R	33E	Sec2	15	
Approx Stationi	ng or Milepo	osts NA											
Watershed	14 - Middle Y	'ellowstone	١	Vaters	hed/County	Bighor	n						
7. Evaluating Ag	gency	CCI for MDT						8. Wetla	and s	size acres	6		11.24
Purpose of Eva	aluation							How ass	sess	əd:	Measure	ed e.g.	by GPS
- ·		ected by MDT		t				9. Asses (AA) size		nent area res)			11.24
-	•	e-constructio						How assessed: Measured e.g. by GPS			by GPS		
Mitigation V	Netlands: po	st construction	on										
Other													

10. Classification of Wetland and Aquatic Habitats in AA

HGM Class (Brinson)	Class (Cowardin)	Modifier (Cowardin)	Water Regime	% of AA
Depressional	Emergent Wetland	Excavated	Seasonal/Intermittent	100
11. Estimated Relative Ab	undance Abundant			

11. Estimated Relative Abundance

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) lists)

	Predoi	minant conditions adjacent to (within 500	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 <=30%.	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)

Vegetation in AA well established. Burn area has recovered well two years following fire.

ii. Prominent noxious, aquatic nuisance, other exotic species:

Convolvulus arvensis, Cynoglossum officinale, Cirsium arvense, Acroptilon repens arvense, Acroptilon repens, and Cynoglossum officinale.

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

Fishing Acess Site, large parcel homesites, ranching.

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 R ating	
>=3 (or 2 if 1 is forested) classes	Н	NA	NA	NA
2 (or 1 if forested) classes	М	NA	NA	NA
1 dass, but not a monoculture	м	<no< td=""><td>YES></td><td>L</td></no<>	YES>	L
1 class, monoculture (1 species comprises>=90% of total cover)	L	NA	NA	NA

Comments: Site contains multiple PEM wetlands.

SECTION PERTAINING to FUNCTIONS VALUES ASSESSMENT

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

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

Primary or critical habitat (list speci	es) 🔿 D 📿) S							
Secondary habitat (list Species)	\bigcirc d \bigcirc) S							
Incidental habitat (list species)	○ D .	S black-footed	black-footed ferret						
No usable habitat	S								
ii. Rating (use the condusions from	iabove and the m	natrix below to arriv	e at [check] the fun	ctional points and	rating)				
Highest Habitat Level doc/prima	ry sus/primary	doc/secondary	sus/secondary	doc/incidental	sus/incidental	None			
Functional Points and Rating 1H	9H	.8H	.7M	3L	.1L	OL			
Sources for USFWS T&E documented use	list for Big Horn Co	punty							

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

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

Primary or critical habitat (list species)	🔘 D 🔘 S	
Secondary habitat (list Species)	● D ○ S	Bur oak (S2) documented on site in 2017.
Incidental habitat (list species)	🔾 D 💿 S	Great Blue Heron (S3)
No usable habitat	S	

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

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

Sources for documented use

Suitable great blue heron habitat

14C. General Wildlife Habitat Rating:

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

Substantial	(based o	on anv	of the	following	[check]):
ousstantia	(buobu i	on any	01 110	ionoming	Louisourd	1.

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

Minimal (based on any of the following [check]):

few or no wildlife observations during peak use periods

Moderate

- 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 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, check 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 in terms 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)		Eve	en			Une	ven			Eve	en			Une	ven			Eve	en	
Duration of surface water in ≥ 10% of AA	P/P	S/I	T/E	A	P/P	S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	А	P/P	S/I	T/E	А
Low disturbance at AA (see #12i)	Е	E	E	н	E	E	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 [check] the functional points and rating)

Evidence of wildlife use (i)											
	Exceptional	High	Moderate	Low							
Substantial	1E	.9H	.8H	.7M							
Moderate	.9H	.7M	.5M	.3L							
Minimal	.6M	.4M	.2L	.1L							

Comments Several deer beds, and a few deer observed in 2022.

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 check **v NA** here and proceed to 14E.)

Habitat Quality and Known 7 Suspected Fish Species in AA (use matrix to annye at [check the functional points and fating)																		
Duration of surface water in AA		Pei	rmanent /	Perennia	I			Se	easonal /	Intermitten	t		Temporary / Ephemeral					
Aquatic hiding / resting / escape cover	Opt	timal	Adeq	uate	Po	oor	Opti	mal	Ade	quate	Po	or	Opti	mal	Adeo	luate	Po	oor
Thermal cover optimal/ suboptimal	ο	S	0	s	0	s	0	s	0	S	0	S	0	S	0	S	0	S
FWP Tier I fish species	1E	.9H	.8H	.7M	.6M	.5M	.9H	.8H	.7M	.6M	.5M	.4M	.7M	.6M	.5M	.4M	.3L	.3L
FWP Tier II or Native Game fish species	.9H	.8H	.7M	.6M	.5M	.5M	.8H	.7M	.6M	.5M	.4M	.4M	.6M	.5M	.4M	.3L	.2L	.2L
FWP Tier III or Introduced Game fish	.8H	.7M	.6M	.5M	.5M	.4M	.7M	.6M	.5M	.4M	.4M	.3L	.5M	.4M	.3L	.2L	.2L	.1L
FWP Non-Game Tier IV or No fish species	.5M	.5M	.5M	.4M	.4M	.3L	.4M	.4M	.4M	.3L	.3L	.2L	.2L	.2L	.2L	.1L	.1L	.1L

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

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 waterbo	ody inclu	ded on the)
current final MDEQ list of waterbodies in need of TMDL development with listed "Probable Impaired Uses" including col	d or war	m water	
fishery or aquatic life support, or do aquatic nuisance plant or animal species (see Appendix E) occur in fish habitat?	YO	N 💿	lf
yes, reduce score in i above by 0.1: Modified Rating			

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? \bigcirc Y \bigcirc N If yes, add 0.1 to the adjusted score in i or iia above:

	Modifed Rating
iii. Final Score and Rating: 0 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 inchannel or overbank flow, click NA here and proceed to 14F.)

i. Rating (working from top to bottom, use the ma	atrix below	to arrive at	[check] the	e functional	points and	rating)				
Estimated or Calculated Entrenchment (Rosgen	Slightly e	entrenched -	- C, D, E	Moderate	ely entrench	ied – B	Entrenched-A, F, G stream			
1994, 1996)	S	tream types	S	s	tream type			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	

	Slightly Entrench ER = >2.2	ed	Moderately Entrenched ER = 1.41 – 2.2			
C stream type	D stream type	E stream type	B stream type	A stream type	F stream type	G stream type



Floodprone width	700	1	Bankfull width	250	=	Entrenchment ratio	2.8
	es of wetland in the AA subject to downstream of the AA (check)?			, , , , , , , , , , , , , , , , , , ,	e sign	ificantly damaged by f	floods located
	AA subject to periodic flood Entrenchment ratio estimat						

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, dick 14G.)

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

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

Comments: Due to the depth of the excavated cells relative to the surrounding uplands, this site is capable of providing a large amount of surface water storage.

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, click **NA** here and proceed to 14H.)

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

Sediment, nutrient, and toxicant input					Waterbody	on MDEQ list of wa	aterbodies in n	eed of TMDL		
levels within AA	AA rece	eives or surro	unding land us	e with potential	development for "probable causes" related to sediment,					
			of sediments, r		nutrients, or toxicants or AA receives or surrounding land use					
				er functions are	with potential to deliver high levels of sediments, nutrients, or					
			paired. Minors		compounds such that other functions are substantially impaired.					
	soui		ntsortoxicants	, U	Major sedimentation, sources of nutrients or toxicants, or signs of eutrophication present.					
			nication presen							
% cover of wetland vegetation in AA	\geq	70%	<	70%	≥ 70% < 70%					
Evidence of flooding / ponding in AA										
	Yes	No	Yes	No	Yes	No	Yes	No		
AA contains no or restricted outlet								1		
	1H	.8H	.7M	.5M	.5M	.4M	.3L	.2L		
AA contains unrestricted outlet										
	.9H	.7M	.6M	.4M	.4M	.3L	.2L	.1L		

Comments: AA has potential to receive sediment/nutrients/toxicants from surface or groundwater.

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, click **NA** here and proceed to 14I.)

i. Rating (working from top to bottom, use the matrix below to arrive at [check] 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 / Pe	Seasonal / Intermittent			Temporary / Ephemeral				
≥ 65%	1H			.9H			.7M		
35-64%	.7M			.6M			.5M		
< 35%	.3L			.2L			.1L		

Small amounts of surface water present in 2022, but not enough to create wave action.

Comments:

14I. Production Export/Food Chain Support:

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

General Fish Habitat	Gener	al Wildlife Habitat Rati	ng (14C.iii.)
Rating (14D.iii.)	E/H	М	L
E/H	н	н	М
М	н	м	м
L	м	м	L
N/A	н	м	L

ii. Rating (Working from top to bottom, use the matrix below to arrive at [check] the functional points and rating. Factor A = acreage of vegetated wetland component in the AA; Factor B = level of biological activity rating from above (14l.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].)

	otraotior					1.1.1.1.1.1.1.1												
Α		Vege	etated comp	oonent >5 a	acres			Vegetated component 1-5 acres					Vegetated component <1 acre					
В	Hi	gh	Mode	erate	L	ow	Н	igh	Mod	erate	Lo	w	Hi	gh	Mod	erate	Lo	ow
С	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
P/P	1E	.7H	.8H	.5M	.6M	.4M	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.6M	.6M	.4M	.3L	.2L
S/I	.9H	.6M	.7H	.4M	.5M	.3L	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.5M	.5M	.3L	.3L	.2L
T/E/A	.8H	.5M	.6M	.3L	.4M	.2L	.7H	.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 \geq 30% plant cover, \leq 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 \geq 50 foot-wide vegetated upland buffer around \geq 75% of the AA circumference? Y • N · If yes, add 0.1 to the score in **ii** above and adjust rating accordingly: **Modified Rating** 5M

Comments:

Adjacent upland buffer with greater than 30% plant cover and less than 5% noxious weed 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:
	Seeps are present at the wetland edge	
	AA permanently flooded during drought periods	
	Wetland contains an outlet, but no inlet	
<u> </u>	Shallow water table and the site is saturated to the surface	
	Other:	

iii. Rating (use the information from I and II abo	ove and the table below to arrive at [check] the functional points and rating)									
		Duration of saturation at AA Wetlands <u>FROM GROUNDWATER DISCHARGE OR WITH WATER</u> <u>THAT IS RECHARGING THE GROUNDWATER SYSTEM</u>								
Criteria	P/P S/I T Non									
Groundwater Discharge or Recharge	1H	.7M	.4M	.1L						
Insufficient Data/Information		NA								

Comments: The site was designed to have excavated wetland cells that utilize a high groundwater table as the primary hydrologic source.

14K. Uniqueness:

... .

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i. R	Rating (working from to	p to bottom	use the matrix below to arrive at	[check] t	he functional po	pints and rating)
------	-------------------------	-------------	-----------------------------------	-----------	------------------	-------------------

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Replacement potential	or mature wetland or	e (>80 yr-old	iation listed	cited rar diversity (not contain p e types and #13) is high o ciation listed the MTNHP	structural or contains as "S2" by	cited ran and stru	AA does not contain p cited rare types or ass and structural diversit low-moderate		
Estimated relative abundance (#11)	rare	commo n	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	.7H	.6M	.6M	.4M	.3L	.3L	.2L	.1L	

Comments: Wetland type is common in the Bighorn River floodplain.

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

- i. Is the AA a known or potential rec./ed. site: (check) Y () N() (if 'Yes' continue with the evaluation; if 'No' then click NA here and proceed to the overall summary and rating page)
 - ii. Check categories that apply to the AA: 🗹 Educational/scientific study; 🗌 Consumptive rec.; 🛄 Non-consumptive rec.;

iii. Rating (use the matrix below to arrive at [check] the functional points and rating)

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

Comments:

Site owned by MFWP and part of larger Grant Marsh WMA property.

General Site Notes

In 2022, the site rebounded from the drought effects observed in previous two years and the wetlands expanded significantly.

Function & Value Variables	Rating	Actual Functional Points	Possible Functional Points	Functional Units: (Actual Points x Estimated AA Acreage)	Indicate the four most prominent functions with an asterisk (*)
A. Listed/Proposed T&E Species Habitat	L	0	1	0.00	
B. MT Natural Heritage Program Species Habitat	М	.6	1	6.74	
C. General Wildlife Habitat	М	.7	1	7.87	
D. General Fish Habitat	NA	0	0	0.00	
E. Flood Attenuation	М	.6	1	6.74	
F. Short and Long Term Surface Water Storage	Н	.9	1	10.12	\checkmark
G. Sediment/Nutrient/Toxicant Removal	Н	1	1	11.24	
H. Sediment/Shoreline Stabilization	NA	0	0	0.00	
I. Production Export/Food Chain Support	М	.5	1	5.62	
J. Groundwater Discharge/Recharge	М	.7	1	7.87	
K. Uniqueness	М	.4	1	4.50	
L. Recreation/Education Potential (bonus points)	Н	.2	NA	2.25	
Totals:		5.6	9	62.94	
Percent of Possible Score			62.22 %		

FUNCTION & VALUE SUMMARY & OVERALL RATING FOR WETLAND/SITE #(S): JTX Tunnicliff

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 0 or 1 functional point for Ceneral Fish Habitation
- Score of .9 or 1 functional point for General Fish Habitat; or
 - "High" to "Exceptional" ratings for both General Wildlife Habitat and General Fish/Aquatic Habitat; or
- Score of .9 functional point for Uniqueness; or

Percent of possible score > 65% (round to nearest whole #).

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

✓

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

"Low" rating for Uniqueness; **and**

- Vegetated <u>wetland</u> component < 1 acre (do <u>not</u> include upland vegetated buffer); **and**
- Percent of possible score < 35% (round to nearest whole #).

OVERALL ANALYSIS AREA RATING:

(check appropriate category based on the criteria outlined above)



APPENDIX C PROJECT AREA PHOTOGRAPHS

MDT Wetland Mitigation Monitoring JTX – Tunnicliff Ranch Big Horn County, Montana



Photo Point: 1 Bearing: 320 degrees

Location: Looking NW at Cell 4 Year: 2016



Photo Point: 1 Location: Looking west across property Bearing: 270 degrees Year: 2016



Photo Point: 1 Bearing: 220 degrees Location: Looking SW at Cell 5 Year: 2016



Photo Point: 1 Bearing: 320 degrees Location: Looking NW at Cell 4 Year: 2022



Photo Point: 1 Location: Looking west across property Bearing: 270 degrees Year: 2022



Photo Point: 1 Bearing: 220 degrees

Location: Looking SW at Cell 5 Year: 2022



Photo Point: 2 Bearing: 315 degrees

Location: Looking NW at Cell 9 Year: 2016



Photo Point: 2 Bearing: 0 degrees Location: Looking North at Cell 8/9 Year: 2016



Photo Point: 2 Bearing: 45 degrees

Location: Looking NE at Cell 8 Year: 2016



Photo Point: 2 Bearing: 315 degrees

Location: Looking NW at Cell 9 Year: 2022



Photo Point: 2 Bearing: 0 degrees

Location: Looking North at Cell 8/9 Year: 2022



Photo Point: 2 Bearing: 45 degrees

Location: Looking NE at Cell 8 Year: 2022



Photo Point: 3 Bearing: 140 degrees Location: Looking SE at Cell 13 Year: 2016



Photo Point: 3Location: Looking East at Cell 13Bearing: 100 degreesYear: 2016



Photo Point: 3 Location: W side of property Looking NE Bearing: 45 degrees Year: 2016



Photo Point: 3 Bearing: 140 degrees

Location: Looking SE at Cell 13 Year: 2022



Photo Point: 3 Bearing: 100 degrees

Location: Looking East at Cell 13 Year: 2022



Photo Point: 3 Location: W side of property Looking NE Bearing: 45 degrees Year: 2022



Photo Point: 4 Bearing: 105 degrees Location: Looking East at Cell 3 Year: 2016



Photo Point: 4Location: Looking South at Cell 3Bearing: 160 degreesYear: 2016



Photo Point: 4 Bearing: 240 degrees

Location: Looking West at Cell 2 Year: 2016



Photo Point: 4 Bearing: 105 degrees Location: Looking East at Cell 3 Year: 2022



Photo Point: 4Location: Looking South at Cell 3Bearing: 160 degreesYear: 2022



Photo Point: 4 Bearing: 240 degrees Location: Looking West at Cell 2 Year: 2022

JTX Tunnicliff: 2022 Transect Photographs



Transect 1: Start Bearing: 230 degrees Location: SE corner of property Year: 2016



Transect 1: End Bearing: 50 degrees Location: SE corner of property Year: 2016



Transect 2: Start Bearing: 350 degrees

Location: West side of property Year: 2016



Transect 1: Start Bearing: 230 degrees Location: SE corner of property Year: 2022



Transect 1: End Bearing: 50 degrees

Location: SE corner of property Year: 2022



Transect 2: Start Bearing: 350 degrees

Location: West side of property Year: 2022



Transect 2: End Bearing: 170 degrees

Location: West side of property Year: 2016



Data Point: DP01w Year: 2022

Location: Cell 1



Data Point: DP02w Year: 2022

Location: Cell 2



Transect 2: End Bearing: 170 degrees Location: West side of property Year: 2022



Data Point: DP01u Year: 2022 Location: Cell 1



Data Point: DP02u Year: 2022

Location: Cell 2



Data Point: DP03w Year: 2022 Location: Cell 3



Data Point: DP04w Year: 2022

Location: Cell 4



Data Point: DP05w Year: 2022 Location: Cell 5



Data Point: DP03u Year: 2022 Location: Cell 3



Data Point: DP04u Year: 2022 Location: Cell 4



Data Point: DP05u Year: 2022 Location: Cell 5



Data Point: DP06w Year: 2022

Location: Cell 6



Data Point: DP07w Year: 2022

Location: Cell 7



Data Point: DP08w Year: 2022

Location: Cell 8/9



Data Point: D06u Year: 2022 Location: Cell 6



Data Point: DP07u Year: 2022 Location: Cell 7



Data Point: DP08u Year: 2022 Location: Cell 8/9



Data Point: DP09w Year: 2022

Location: Cell 10/11



Data Point: DP10w Year: 2022

Location: Cell 12/13



Data Point: DP09u Year: 2022

Location: Cell 10/11



Data Point: DP10u Year: 2022

Location: Cell 12/13