Y2 CONSULTANTS

y2consultants.com
307 733 2999

ENGINEERING, SURVEYING & PLANNING
LANDSCAPE ARCHITECTURE, GIS
NATURAL RESOURCE SERVICES

JC RANCHES SUB-DIVISION
2023 AQUATIC RESOURCE INVENTORY

JANUARY 3, 2024

Prepared by:
Y2 Consultants, LLC
PO Box 2870
180 S. Willow St.
Jackson, WY 83001

Prepared for:
J. C. Herbert 1994 Revocable Trust
4750 S Courtland Drive
Jackson, WY 83001

- This Page Intentionally Left Blank –

Contents

EXECUTIVE SUMMARY

A routine Aquatic Resource Inventory (ARI) was conducted on JC Ranches Subdivision in Teton County, Idaho on June 1, 2022 (Appendix A – Figure 1). The study area consisted of the 80-acre parcel, efforts were focused where irrigation influences cross through the property as an irrigation ditch, and water-holding areas along the lower topography. The inventory and delineation were conducted on the 80-acre area by wetland scientist staff for Y2 Consultants, Danielle Goodman, at the request of the new property owners (the "Client").

The purpose of the study was to determine if any wetlands, as per wetland definitions in the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, 1987), occurred within the study area; and if present, to determine the locations and boundaries of all wetlands within the study area.

The ARI provides the USACE the necessary information to make a final determination of wetland presence, boundaries, and jurisdiction as per their responsibility under Section 404 of the Federal Clean Water Act.

WETLANDS

DEFINITION OF A WETLAND & WETLAND PROTECTION

Wetlands, according to the USACE under the Clean Water Act, are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (Environmental Laboratory, 1987).

Topographically, wetlands are transitional areas between well-drained uplands and permanently or periodically flooded aquatic habitats. Wetlands serve important ecosystem functions. Such ecological functions include food chain production, unique habitat, nesting and spawning sites, and rearing and resting landscapes for aquatic and land species. They also provide function through protection of adjacent areas from erosion, storage for storm and flood waters, natural recharge where ground and surface water are interconnected, and natural water filtration and purification functions.

WETLAND PROTECTION

Given that wetlands provide beneficial services considered valuable—as a result of their inherent and unique ecological characteristics—and because of the tremendous threats to existing wetland resources, the federal government included wetland protections when it enacted the Clean Water Act in 1972. The Act, specifically Section 404, grants protection to "Waters of the United States, including wetlands" and prohibits activities that convert wetlands to upland or open water environments. This protection is given to aquatic habitats that meet the definitional criteria of a wetland and are determined to be 'jurisdictional' by the USACE. Depending on the purpose of a project and the characteristics of a specific wetland, some impacts may be allowed, but only after project evaluation and permit issuance by the USACE and other local agencies.

Other federal agencies are also involved in regulations associated with Section 404 of the Clean Water Act. The U.S. Fish and Wildlife Service (USFWS) reviews wetland permit applications to evaluate any potential impacts a

project may have on species listed as threatened or endangered under the Endangered Species Act. The U.S. Environmental Protection Agency (EPA) also reviews all permit applications submitted to the USACE and holds the legal authority to enforce wetland regulations.

Teton County, Idaho has further enacted wetland protection measures. The Teton County Title 8 Zoning Regulations require development occur within 'upland' areas, where able, when "jurisdictional" wetlands are present (Teton County ID, 2009).

DETERMINATION AND DELINEATION

Site-specific wetland identification and delineation requires the evaluation of three wetland parameters: vegetation, soils, and hydrology. All three parameters must meet the specific definitional criteria described in the USACE Wetland Delineation Manual (Environmental Laboratory, 1987).

WETLAND VEGETATION & INDICATORS

To meet wetland vegetation criteria, an area must be dominated by plants adapted for survival in saturated soil conditions (i.e., hydrophytes). All plants known to occur in or near wetlands have been assigned a wetland indicator status. This status generally reflects the frequency at which a particular species occurs in a wetland as outlined below:

Wetland indicator status	Frequency of occurrence in a wetland
Upland (UPL)	< 1%
Facultative-upland (FACU)	1%-33%
Facultative (FAC)	33%-67%
Facultative-wetland (FACW)	67%-99%
Obligate wetland (OBL)	99%-100%

WETLAND SOILS & INDICATORS

A wetland or hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper horizons. Hydric soil characteristics develop over long periods of time. Indicators of hydric soils include such characteristics as a dull blue-gray color (gleyed) and/or reddish-brown speckles or nodules (ferrous iron concentrations). To meet definitional criteria, these hydric soil indicators must be at or near the soil surface (Environmental Laboratory, 1987).

WETLAND HYDROLOGY & INDICATORS

Wetland hydrology refers to the presence of water at or above the soil surface for a sufficient period of the year to significantly influence the plant types and soils that occur in the area. An area is required to be inundated or saturated to the surface for at least 5% of the growing season in most years (Environmental Laboratory, 1987). Both running water (lotic) and standing water (lentic) as well as ground water, surface water, and intermittent water can support wetlands. Lotic wetlands are associated with creek, stream, and river channels and floodplains, while lentic wetlands are associated with lakes, vernal pools, ponds, seeps, marshes, and bogs.

Although both definitional and jurisdictional wetlands meet specific vegetative, soil, and hydrologic criteria, the latter are wetlands determined by USACE personnel as subject to the regulations inherent in Section 404 of the Clean Water Act. Determination of a definitional wetland is a technical process, while determination of a

jurisdictional wetland is a decision based on an examination of the driving forces, current conditions, and relationship of a definitional wetland in relation to its surroundings.

JC RANCHES SUBDIVISION STUDY AREA

LOCATION AND PHYSIOGRAPHY

The ARI inventory consisted of the entire 80-acre property, owned by JD ID WY LLC. The study area spanned the property while focusing on the irrigation ditch and associated areas. The study area included the irrigation ditch that crosses the property at an angle, depressional areas along the central portions of the property that collect and hold irrigation water, and the associated uplands.

The property is located approximately 4.5 miles north of Driggs, Idaho. Current access to the property is gained by driving north on Highway 33 approximately 4 miles, then west onto W 4000 N for about 0.3 miles. The site is located south of W 4000 N in a portion of Section 10, T5N, R45E, Teton County, Idaho.

The study property has an approximate average elevation of 6,100 ft. and is characterized by relatively flat to rolling terrain formed during the deposition of gravel throughout the Teton Valley approximately 60-80 million years ago by major ancestral watercourses coming from the Teton River. Melting glaciers and the accompanying scouring effects of runoff leveled the valley and deposited silt, clay, and loams throughout the region. The surface aspect of the property is nearly flat with slight undulation in topography.

LAND USE

The study area is currently undeveloped and has been used for agriculture. The area is slated to be developed into a subdivision.

SURFACE HYDROLOGY

The property is located in the Hydrologic Unit Code (HUC) 170402 – Upper Snake River Basin. The subject property contains seasonal surface water in the form of an irrigation ditch. Some surface water may accumulate as overland flooding during the irrigation season, generally from late May or early June to late August. Water is fed onto the property from the Leigh Creek Canal, a diversion of Hog Canal, and from irrigation ditches on the bordering properties to the east through lateral ditch lines (Appendix A – Figure 2 and Appendix A – Figure 3).

The subject property does not contain other natural springs or wetlands. Drainage off the property is through the low areas and drainage ways present. The study area is not located within any of the FEMA Flood Zones.

STUDY AREA SOILS

The dominant soil type for this property is the Alpine – St. Anthony complex, 0 to 2 percent slopes (Appendix A – Figure 4). This is the dominant soil type within the wetland areas. This soil type is characterized with slopes of 0 to 3 percent, well-drained with a moderately high capacity to transmit water, and has an average depth to the

seasonal high water table of greater than 72 inches. Other soils present on site are the Redfish- Foxcreek and the Feltonia-Arimo complexes. Soil characteristics for each sample plot can be found in the data sheets in Appendix C.

STUDY AREA VEGETATION COVERTYPES

The majority of the upland communities within the study area are dominated by smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*) with assorted upland forbs in the understory. There is no overstory present.

Dominant plant species on the more hydric sites include Nebraska sedge (*Carex nebrascensis*), tufted hairgrass (*Deschampsia cespitosa*), and meadow foxtail (*Alopecurus pratensis*), in addition to other FACW and FAC forbs and grasses in lower frequency. There are no trees or shrubs present on the site.

CLIMATE

The 'growing season' for Driggs (NCDC DRIGGS Station 102676-0) according to the United States Department of Agriculture (USDA) WETS table is approximately 100 days. The average high temperature annually is 54°F and the average low is 26°F, and the average precipitation is 16 inches.

PRIOR DELINEATIONS

There are no known prior wetland delineations on the study area.

WETLAND DELINEATION

METHODS

This ARI was completed according to the USACE Walla Walla District Regulatory Office Guidance for Aquatic Resource Delineation Reports public notice dated June 24th, 2019. The ARI included a routine wetland delineation using the 1987 USACE Wetland Delineation Manual and the Western Mountains, Valleys and Coast Regional Supplement.

Preliminary data for the wetland delineation were gathered from several sources prior to the onsite inspection including the USFWS's National Wetlands Inventory (NWI) mapping, the Teton County soil survey (Young, 1982), the Teton County Hydric Soils List (Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture, 2017), the USACE 2016 National Wetland Plant List, version 3.24 (Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner, 2016) and aerial photography.

Onsite inspections occurred on June 1, 2022. Field data associated with the wetland delineation and boundary mapping were collected from four (4) sample plots distributed to represent the areas with different vegetative communities and that could have potential impacts within the proposed development to the property. Wetland boundaries were mapped using an EOS Arrow 100 submeter GPS. Wetland boundaries have been digitally mapped onto color, 2021, aerial photography using ArcGIS 10.5 and are included herein (Appendix A – Figure 6). The mapped wetland areas were along the center of the property following the depressional swale crossing the property near-perpendicular to the irrigation ditch. Irrigation was observed to have a large influence on the wetland areas that

were mapped. Photographic documentation of the sample plots on the property were also collected and are presented in Appendix B.

RESULTS

Mostly artificial (i.e., irrigation) conditions have influenced the creation, perpetuation, and development of wetlands within the study area. Existing proximate and adjacent land activities, which consist of livestock grazing, common agricultural practices, and residential development are at least 5 years old and are defined by the 1987 USACE Manual as "normal circumstances".

The NWI mapping indicated the presence of Freshwater Emergent wetlands habitat within the study area (Appendix A – Figure 5).

Field data collected during this study confirmed the presence of one wetland type within the inventory boundary, Freshwater Emergent. Subsequent delineation analysis and spatial mapping of wetland boundaries revealed that approximately 7.88-acres (10% of the study area) conformed to the definitional criteria for wetlands as per the 1987 USACE Manual and the Regional Supplement. Two (2) sample plots met all three wetland criteria (vegetation, soils, and hydrology) and were determined to be wetlands. Two (2) sample points met one or two of the three criteria and were determined to be upland. Wetland locations, wetland boundaries, and sample plots are depicted in Appendix A – Figure 6.

The field site investigation was performed during the late spring season (June), which indicates that groundwater and surface water elevations were higher compared to drier times of the year, as early June is typically high water runoff. However, the site is highly irrigation influenced and the irrigation water was in the process of being turned on for the season at the time of the visit. The site may expect to see increases in water later in the season as more irrigation ditches are turned on throughout the area. The irrigation ditches on and surrounding the property associated with the Teton River complex provide the hydrology for the site throughout the growing season. Water monitoring well installation was attempted in the summer of 2022 and no water was found when drilling. This is most likely due to the combination of the restrictive layer present in the soil units on site, and the water on site being irrigation fed via overland flow during the irrigation season.

Table 1. Summary of individual sample plots and wetland criteria for JC Ranches study area, Teton County, Idaho.

Sample Point	Hydrophytes	Hydric Soils	Wetland Hydrology	Wetland Determination
SP01	No	No	Yes	No
SP02	Yes	Yes	Yes	Yes
SP03	No	Yes	Yes	No
SP04	Yes	Yes	Yes	Yes

The following describes the vegetation, soils, and hydrology of these aquatic sites and adjacent uplands.

Vegetation – There is one wetland community type within the study area, freshwater emergent. Herbaceous vegetation within wetland sample plots were Nebraska sedge (*Carex nebrascensis*), tufted hairgrass (*Deschampsia cespitosa*), and meadow foxtail (*Alopecurus pratensis*). There was no shrub or tree community present.

Soils – The dominant soil type for the property is the Alpine- St. Anthony complex. Soil surveys are a predictive tool and are not an accurate map of occurrence, hence field surveys were conducted at all sample plots. Hydric indicators for soils found that definitional wetlands exhibited a sandy redox (S5). Soil characteristics associated with sample plots are presented on the respective data sheets which can be found in Appendix C.

Hydrology – Study area freshwater emergent wetlands are located in low seep areas along the depressional topography across the property. The hydrologic regime of delineated wetlands appears to be seasonally flooded (surface water present for several months during the growing season). The wetland hydrology indicators found in the wetland sample plots are surface water (A1), oxidized rhizospheres on living roots (C3), drainage patterns (B10), and FAC-Neutral test (D3). Hydrologic indicators associated with the sample plots are presented on the respective data sheets in Appendix C.

DESCRIPTIONS OF STUDY AREA AQUATIC RESOURCES

For the purposes of this report, aquatic resources in the study area have been lumped into two general groups. The wetland classification within this group is based off the system most commonly used today in the U.S., "The Classification of Wetlands and Deepwater Habitats of the United States" by Cowardin et al., 1979. Within this system, wetlands are classified primarily on geologic and hydrologic considerations, with vegetation life form or substrate type used as a class modifier.

The two types of wetlands are Palustrine Scrub-Shrub (NWI classification of Freshwater Forested/Shrub) and Palustrine Emergent (NWI classification of Freshwater Emergent). Only the Palustrine Emergent was found on the property. Palustrine refers to wetlands that are not tidal. In addition, Leigh Creek Canal, classified as riverine by the National Wetland Inventory, is a large man-mad irrigation conveyance that supplies water across the property.

Palustrine Emergent – Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytic plants, excluding mosses and lichens (Cowardin, 1979). According to the standard definition, wetland vegetation must be present for most of the growing season in most years and is usually dominated by perennial plants. Palustrine emergent wetlands may exist in a variety of geomorphic settings and water regimes, both of which strongly influence plant species composition. Palustrine emergent wetlands within the study area make up 7.88 acres. These areas occur in depressional areas that collect surface runoff and have a high water table. These areas occurred mostly within the ditch areas and in the depressional areas of the property that were determined to have wetland characteristics (Appendix A – Figure 6).

Palustrine Scrub-Shrub – This class of wetlands is characterized by woody vegetation less than 6 m (20 feet) tall, including true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions (Cowardin, 1979). Palustrine scrub-shrub wetlands most often occur in depressional areas. Palustrine scrub-shrub wetlands within the study area make up 0.0-acres.

Leigh Creek Canal – This aquatic resource is classified as riverine in the National Wetland Inventory. It runs from the near center northern border of the property to the southwest corner of the parcel. On site investigation did not identify wetlands associated with the Leigh Creek Canal along the majority of its banks on the property. Emergent wetlands were identified in the low topographical areas along the center of the property. Wetlands do border the canal in this area. These wetlands appear to be fed by multiple irrigation points. Leigh Creek Canal spans 2,050 linear feet on the property.

A listing of aquatic features by aquatic resource type and a discussion of specific characteristics of the groupings is provided below.

Table 2. Summary of aquatic resource type, Cowardian classification, acreages and associated notes and sample points, JC Ranches, Teton County, Idaho.

Aquatic Resource Type	Cowardian Classification	Associated Sample Points	Notes	Linear Feet	Acres
Palustrine Emergent Wetland	PEM1	SP02, SP04	Located in depositional areas of Lake Creek.	-	7.88
Palustrine Scrub-Shrub Wetland	PSS1			-	0
Leigh Creek Canal	R5UBFx	SP01, SP03	Runs diagonally through the center of the property.	2,050	-
			total of Aquatic Features	***2,050 linear feet***	***7.88 acres***

SUMMARY AND CONCLUSIONS

A routine ARI was conducted on the 80-acre study area at the JC Ranches property on W 4000 N in Teton County, Idaho on June 1, 2022, focusing on the areas surrounding irrigation features and mapped hydric soils. Field data collected from four (4) sample plots indicated that approximately 7.88-acres of the study area conformed to the definitional criteria for wetlands as per the USACE Wetland Delineation Manual. Wetlands were classified as palustrine emergent (7.88 acres). In addition, 2,050 linear feet of canal are present on the property.

REGULATORY REQUIREMENTS

Pursuant to the approval by the USACE of the said mapping and delineation, on-site wetlands may constrain the development potential within the study area. Any development plans must address impacts to the wetlands and waterways, and permits will be required to fill or modify wetlands or other Waters of the United States. Teton County, Idaho, further requires a wetland disturbance approval process via their Title B Zoning regulations for areas mapped as jurisdictional wetlands by the USACE or defined as wetlands by the Clean Water Act(Teton County, ID, 2009). Both permitting agencies require that a wetland fill permit applicant demonstrate that wetlands have been avoided or impacts minimized to the maximum extent practicable, and mitigation may be required in accordance with the quantity and type of wetland disturbance.

WORKS CITED

Cowardin, L. M. (1979). *Classification of wetlands and deepwater habitats of the United States. FWS/OBS-79/31.* Washington, DC: USDI Fish and Wildlife Service.

Environmental Laboratory. (1987). *Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1.* Vicksburg, MS: U.S. Army Engineer Waterways Experiment Station.

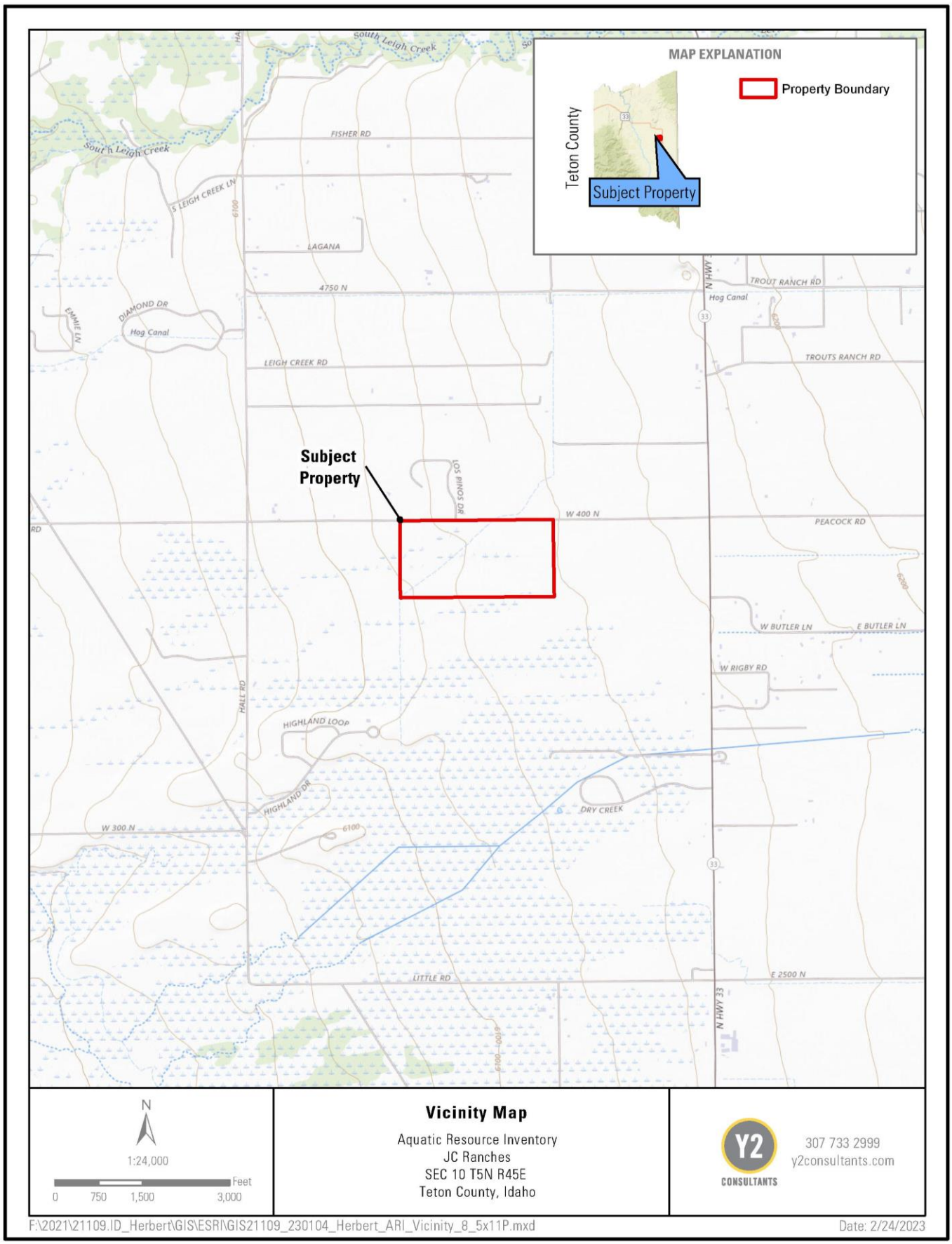
Lichvar, R.W., M. Butterwick, N.C. Melvin, and W.N. Kirchner. (2016). *The National Wetland Plant List: 2016 Update of Wetland Ratings.* Phytoneuron 2016-41: 1-42.

NRCS. (2004). *USDA Field Office, WETs Climate Data.*

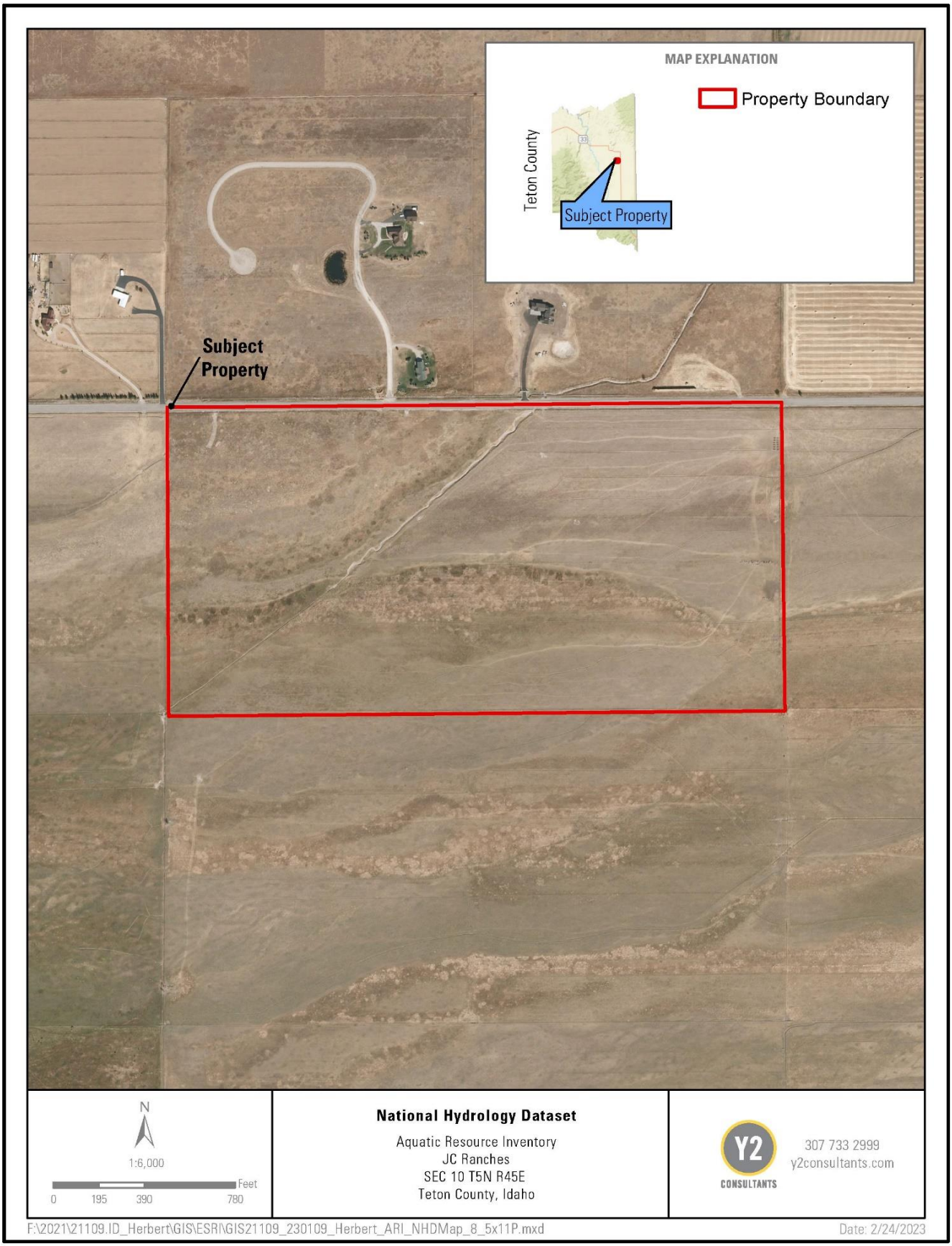
Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. (2017). *Web Soil Survey*. Retrieved from http://websoilsurvey.nrcs.usda.gov/

Young, J. F. (1982). *Soil survey of Teton County, Idaho, Grand Teton National Park area.* USDA Soil Cons. Serv.

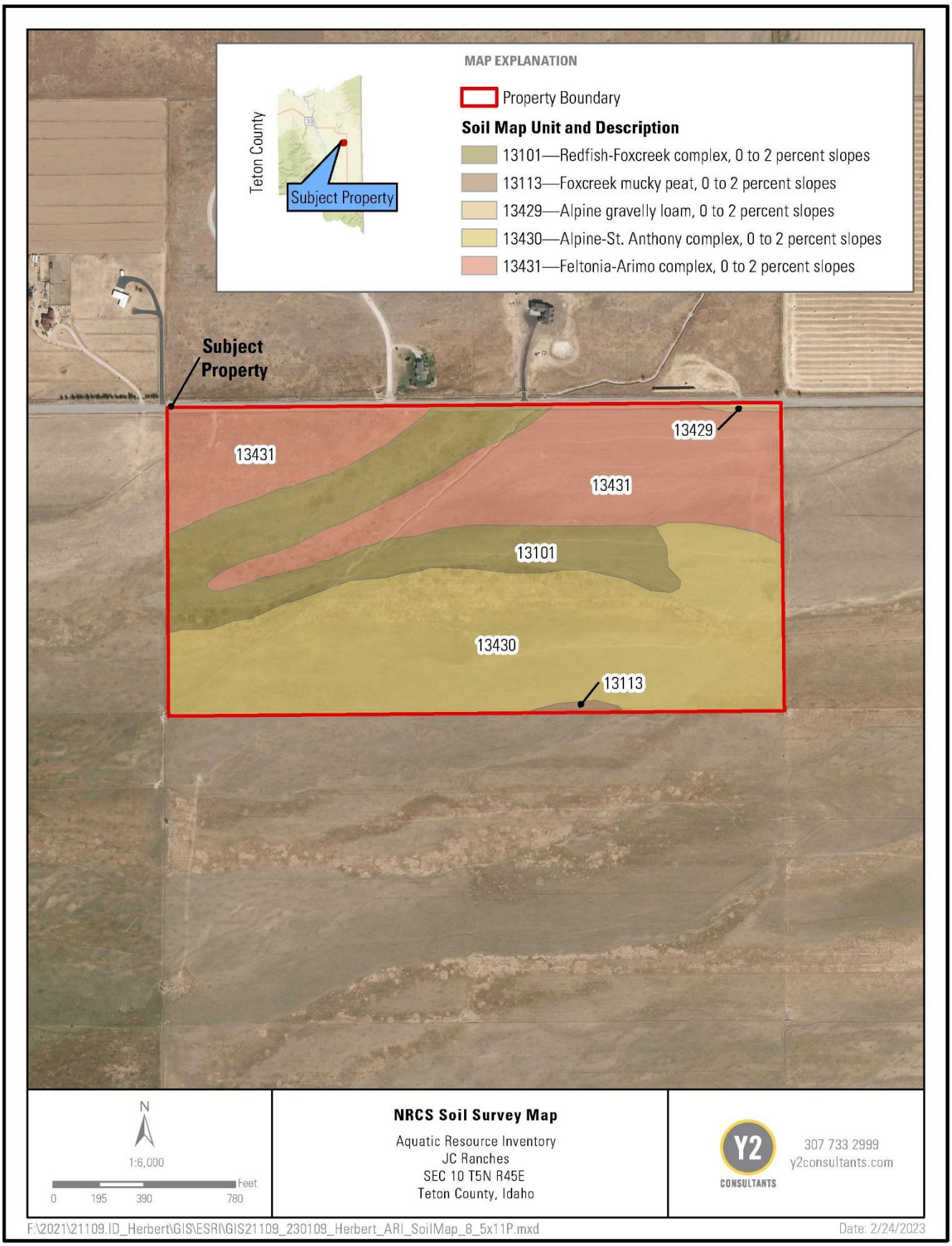
APPENDIX A – FIGURES



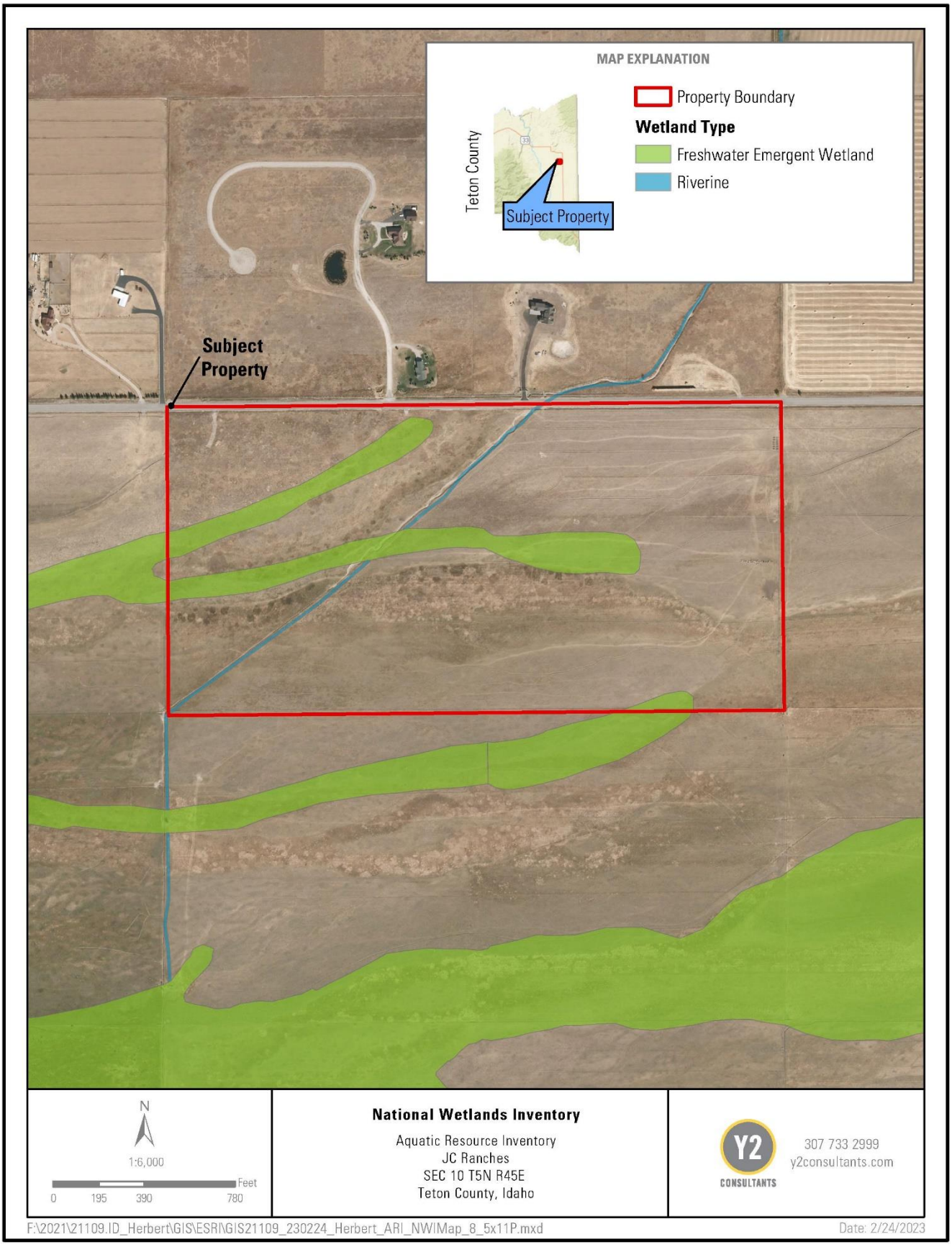
Appendix A - Figure 1. Vicinity Map, JC Ranches Subdivision, Teton County, Idaho.



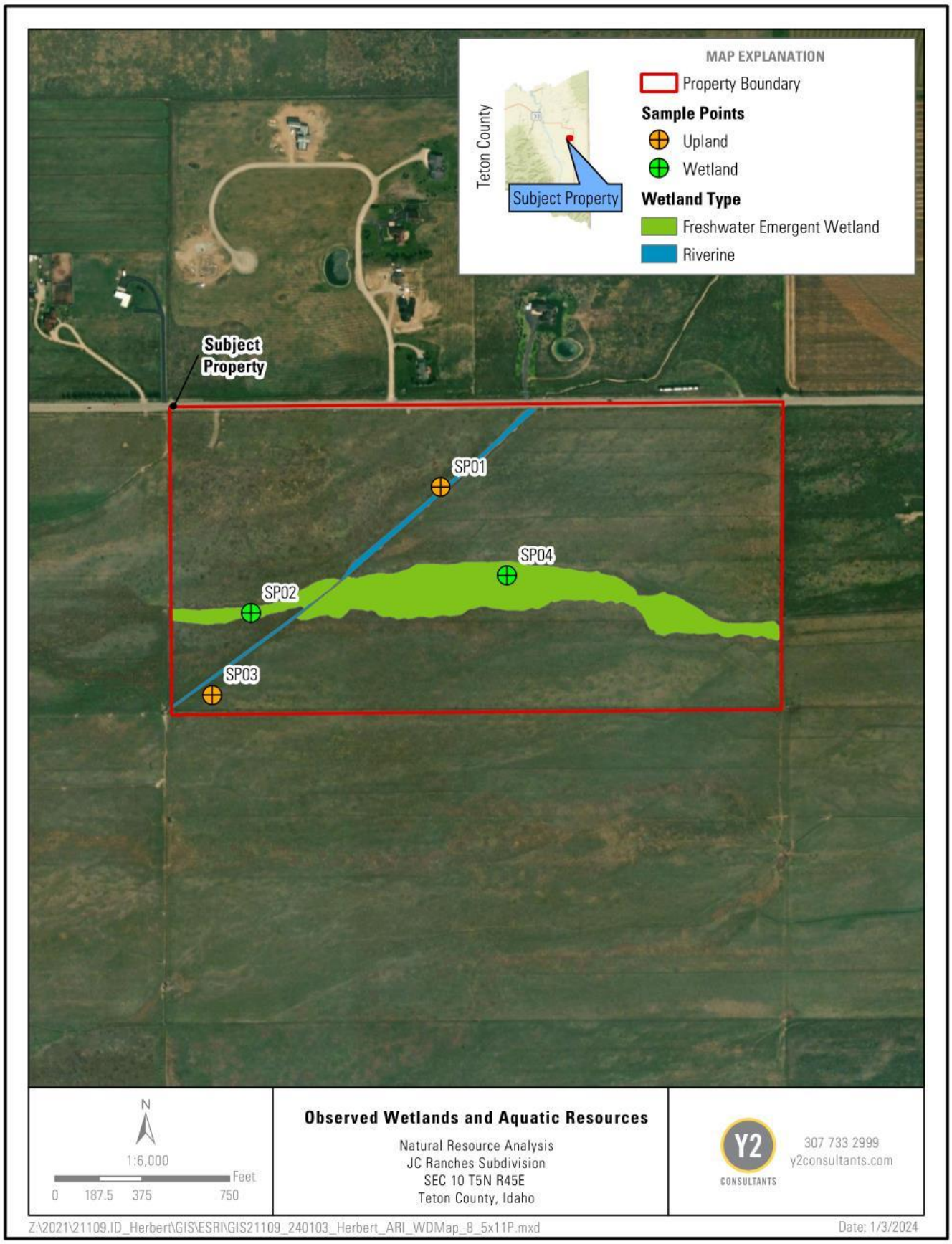
Appendix A - Figure 2. National Hydrology Dataset, JC Ranches Subdivision, Teton County, Idaho.



Appendix A - Figure 3. Soil map units and Descriptions, JC Ranches Subdivision, Teton County, ID.



Appendix A - Figure 4. National Wetlands Inventory, JC Ranches Subdivision, Teton County, ID.



Appendix A - Figure 5. Observed wetlands and Aquatic Resources with sample points, JC Ranches Subdivision, Teton County, ID.

APPENDIX B – SAMPLE PLOT PHOTOS

SAMPLE POINT 01

Photo 1. SP01 hydrology, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 2. SP01 vegetation, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 3. SP01 soil pit, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

SAMPLE POINT 02

Photo 4. SP02 hydrology, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 5. SP02 vegetation, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 6. SP02 soil pit, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

SAMPLE POINT 03

Photo 1. SP03 hydrology, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 2. SP03 vegetation, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 9. SP03 soil pit, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

SAMPLE POINT 04

Photo 10. SP04 hydrology, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 11. SP04 vegetation, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

Photo 12. SP02 soil pit, JC Ranches Subdivision, Teton County, ID, June 1, 2022.

APPENDIX C – DATA FORMS

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

Project/Site: 21109 - Herbert City/County: Tetonia/Teton Sampling Date: 6/1/2022

Applicant/Owner: JD ID WY LLC State: ID Sampling Point: SP 01

Investigator(s): D. Goodman, N. Buchanan Section, Township, Range: Sec 10 T5N R45E

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): convex Slope (º): 1%

Subregion (LRR): E - RM Region Lat: 43.53184 Long: -110.83664 Datum: WGS84

Soil Map Unit Name: Feltonia - Arimo Complex, 0-2% slope NWI classification: Riverine, R5UBFx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◆ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ◆ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: Irrigation ditch bank. The irrigation water was turned on this morning (6/1). Surface water present during irrigation season, but the water primarily leaves site for irrigation down stream throughout the pasture. Multiple birds observed on site.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft. radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *NA - None*			
2.			
3.			
4.			
50% = 0 20% = 0	0 % = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *None*			
2.			
3.			
4.			
5.			
50% = 0 20% = 0	0 % = Total Cover		
Herb Stratum (Plot size: 5 ft. radius)			
1. *Achillea millefolium*	10		FACU
2. *Taraxacum officinale*	15		FACU
3. *Bromus inermis*	50	yes	UPL
4. *Trifolium douglasii*	5		FACW
5. *Poa pratensis*	15		FAC
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50 20% = 20	100 % = Total Cover		
Woody Vine Stratum (Plot size: 30 ft. radius)			
1. *None*			
2.			
50% = 0 20% = 0	0 % = Total Cover		
% Bare Ground in Herb Stratum 5 %			

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)

Percent of Dominant Species That Are OBL, FACW, or FAC: 200 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	15	x 3 =	45
FACU species	25	x 4 =	100
UPL species	50	x 5 =	250
Column Totals:	95 (A)		405 (B)

Prevalence Index = B/A = 4.26

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ◆

Remarks:

Irrigation ditch bank is upland vegetation dominated. Irrigation ditch is ~ 4 feet deep.

SOIL

Sampling Point: SP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 2/2	100	None				SCL	Roots prevalent
4-13"	10YR 3/3	100	None				SCL	Distinct horizon changes
13+"	10YR 5/3	100	none				SCL	
Depth 25"								No cobble

[1]Type: C=Concentration, D=Depletion Texture: Si = Silty, C = Clay, S = Sand, L = Loam [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes _____ No ◆

Remarks:
Soil has distinct horizon boundaries and no cobbles or gravel.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ◆ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

Water Table Present? Yes _____ No ◆ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ◆ Depth (inches): _____

Wetland Hydrology Present? Yes ◆ No _____

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

Remarks:
Irrigation ditch is flowing seasonally - (turned on 6/1/22). Surface water is present seasonally, though it does not appear to reach the bank vegetation. Ditch is eroded with primarily unstable banks, Some stretches of the ditch have slumps vegetated.

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

Project/Site: 21109 - Herbert City/County: Tetonia/Teton Sampling Date: 6/1/2022

Applicant/Owner: JD ID WY LLC State: ID Sampling Point: SP 02

Investigator(s): D. Goodman, N. Buchanan Section, Township, Range: Sec 10 T5N R45E

Landform (hillslope, terrace, etc.): Plain (Swale) Local relief (concave, convex, none): none Slope (º): 0%

Subregion (LRR): E - RM Region Lat: 43.77875 Long: -111.12965 Datum: WGS84

Soil Map Unit Name: Redfish Foxcreek Complex 0-2% slope NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◆ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ◆ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: Site is in a swale west of irrigation ditch. Slight vegetation hummocking around bunch grasses.Irrigation fed site - irrigation turned on for season 6/1/22. Grazed pasture - not yet grazed at visit.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft. radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *NA - None*			
2.			
3.			
4.			
50% = 0 20% = 0	0 % = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *None*			
2.			
3.			
4.			
5.			
50% = 0 20% = 0	0 % = Total Cover		
Herb Stratum (Plot size: 5 ft. radius)			
1. *Carex nebrascensis*	45	yes	OBL
2. *Deschampsia cespitosa*	32	yes	FACW
3. *Taraxacum officinale*	3	no	FACU
4. *Rumex occidentalis*	2	no	FACW
5. *Calamagrostis canadensis*	15	no	FACW
6. *Phleum pratense*	3		FAC
7.			
8.			
9.			
10.			
11.			
50% = 50 20% = 20	100 % = Total Cover		
Woody Vine Stratum (Plot size: 30 ft. radius)			
1. *None*			
2.			
50% = 0 20% = 0	0 % = Total Cover		
% Bare Ground in Herb Stratum 0 %			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	49	x 2 =	98
FAC species	3	x 3 =	9
FACU species	3	x 4 =	12
UPL species	0	x 5 =	0
Column Totals:	100 (A)		164 (B)

Prevalence Index = B/A = 1.64

Hydrophytic Vegetation Indicators:

◆ 1 - Rapid Test for Hydrophytic Vegetation

◆ 2 - Dominance Test is >50%

◆ 3 - Prevalence Index is ≤3.0[1]

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

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ◆ No ____

Remarks:

Vegetation is dominated by carex & deschampsia in a swale. Calamagrostis & deschampsia create slight hummocking.

SOIL

Sampling Point: SP 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3"	7.5YR 2.5/2	100	None				SCL	
3-13"	7.5YR 3/3	95	5YR 4/6	5	C	M	SCL	small gravel
13-20"	7.5YR 3/3	97	7.5YR 4/4	3	C	M	SCL	large gravel slight black mottle (1/%)
20"+	7.5YR 3/3	100	None				SCL	small cobble common

[1]Type: C=Concentration, D=Depletion Texture: Si = Silty, C = Clay, S = Sand, L = Loam [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ◆ No ___

Remarks:
Roots are not quite oxidized but redox in the matrix from 3-13" is prevalent.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

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

Wetland Hydrology Present? Yes ◆ No ___

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

Remarks:

Site is in a drainage swale associated with the irrigation ditch. During the dry season the site is problematic and drainage/seep pattern is barely visible.

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

Project/Site: 21109 - Herbert City/County: Tetonia/Teton Sampling Date: 6/1/2022

Applicant/Owner: JD ID WY LLC State: ID Sampling Point: SP 03

Investigator(s): D. Goodman, N. Buchanan Section, Township, Range: Sec 10 T5N R45E

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): none Slope (º): 0%

Subregion (LRR): E - RM Region Lat: 43.77779 Long: -111.13028 Datum: WGS84

Soil Map Unit Name: Alpine - St. Anthony Complex 0-2% slopes NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◆ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ◆ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: Irrigation flood overflow during peak seasons. The vegetation fails, does not indicate a wetland. Soil shows faint indicators, colors aren't bright, seasonal effects.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft. radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *NA - None*			
2.			
3.			
4.			
50% = 0 20% = 0	0 % = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *None*			
2.			
3.			
4.			
5.			
50% = 0 20% = 0	0 % = Total Cover		
Herb Stratum (Plot size: 5 ft. radius)			
1. *Poa pratensis*	15	yes	FAC
2. *Bromus inermis*	35	yes	UPL
3. *Taraxacum officinale*	12		FACU
4. *Trifolium Douglasii*	3		FACW
5. *Dactylis glomerata*	20	yes	FACU
6. *Alopecurus pratensis*	10		FAC
7.			
8.			
9.			
10.			
11.			
50% = 50 20% = 20	100 % = Total Cover		
Woody Vine Stratum (Plot size: 30 ft. radius)			
1. *None*			
2.			
50% = 0 20% = 0	0 % = Total Cover		
% Bare Ground in Herb Stratum 5 %			

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33333% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	3	x 2 =	6
FAC species	25	x 3 =	75
FACU species	32	x 4 =	128
UPL species	35	x 5 =	175
Column Totals:	95 (A)		384 (B)

Prevalence Index = B/A = 4.04

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

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

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes _____ No ◆

Remarks:

Vegetation is not hydrophilic.

SOIL

Sampling Point: SP 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/2	100	n/a				SC	
3-7"	10YR 3/2	97	10YR 5/4	3	D	M	SC	Depletion Mottling faint
7-17"	10YR 4/3	97	5YR 4/6	3	C	PL	SCL	Redox oxidized rhizopheres
17"+	10YR 5/3	100	None	both H2			SCL	Gravel increases with depth
Depth 25"								

[1]Type: C=Concentration, D=Depletion Texture: Si = Silty, C = Clay, S = Sand, L = Loam [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ◆ No ___

Remarks:
Depletions in H2 continue into H3. Redox in H2&H3. Appears to be seasonally influenced as features are faint.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ◆ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ◆ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

Surface Water Present? Yes ◆ No ___ Depth (inches): seasonally

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

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

Wetland Hydrology Present? Yes ◆ No ___

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

Remarks:

Surface water is present in a ponding area where irrigation water overflows from the ditch. (~50' west) site matches ponding area/depression.

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

Project/Site: 21109 - Herbert City/County: Tetonia/Teton Sampling Date: 6/1/2022

Applicant/Owner: JD ID WY LLC State: ID Sampling Point: SP 04

Investigator(s): D. Goodman, N. Buchanan Section, Township, Range: Sec 10 T5N R45E

Landform (hillslope, terrace, etc.): Plain (Swale) Local relief (concave, convex, none): none Slope (º): 0%

Subregion (LRR): E - RM Region Lat: 43.77916 Long: -111.12547 Datum: WGS84

Soil Map Unit Name: Redfish Foxcreek Complex 0-2% slope NWI classification: n/a

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◆ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ◆ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

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

Remarks: Plot located in a slight swale/low lying area adjacent to irrigation ditch. Site is grazed annually. Sporadically overcast.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30 ft. radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *NA - None*			
2.			
3.			
4.			
50% = 0 20% = 0	0 % = Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft. radius)			
1. *None*			
2.			
3.			
4.			
5.			
50% = 0 20% = 0	0 % = Total Cover		
Herb Stratum (Plot size: 5 ft. radius)			
1. *Carex nebrascensis*	55	yes	OBL
2. *Alopecurus pratensis*	20	yes	FAC
3. *Taraxacum officinale*	3		FACU
4. *Poa pratensis*	15		FAC
5. *Thlaspi arvense*	2		UPL
6.			
7.			
8.			
9.			
10.			
11.			
50% = 50 20% = 20	100 % = Total Cover		
Woody Vine Stratum (Plot size: 30 ft. radius)			
1. *None*			
2.			
50% = 0 20% = 0	0 % = Total Cover		

% Bare Ground in Herb Stratum 5 %

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	0	x 2 =	0
FAC species	35	x 3 =	105
FACU species	3	x 4 =	12
UPL species	2	x 5 =	10
Column Totals:	95 (A)		182 (B)

Prevalence Index = B/A = 1.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

◆ 2 - Dominance Test is >50%

◆ 3 - Prevalence Index is ≤3.0[1]

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

___ 5 - Wetland Non-Vascular Plants[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Hydrophytic Vegetation Present? Yes ◆ No ____

Remarks:

Carex dominates. Site fluctuates in the amount of Carex but throughout swale area it is common.

SOIL

Sampling Point: SP 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4"	10YR 2/1	100	None				SCL	Lots of OM
4-11"	10YR 3/3	95	2.5YR 4/8	5	C	M	SCL	Small pockets of depletion/gleying. oxidiz
11-19"	10YR 4/3	90	2.5YR 4/6	5	C	M	SC	black mottling(5%gley and BM), increase
19"+	10YR 5/3	100	None				LS	sand with gravel
Depth 24"								

[1]Type: C=Concentration, D=Depletion Texture: Si = Silty, C = Clay, S = Sand, L = Loam [2]Location: PL=Pore Lining, M=Matrix.

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

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if present):

Type: NA

Depth (inches): NA

Hydric Soil Present? Yes ◆ No ___

Remarks:
Oxidized rhizospheres in horizon 4-11". Bottom horizon is gravelly loamy sand and is wet. Beginning to feel saturated.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9) (**except MLRA 1, 2, 4A, and 4B**)
- ___ Salt Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ◆ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Stunted or Stressed Plants (D1) (**LRR A**)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

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

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ◆ No ___ Depth (inches): 24"

Wetland Hydrology Present? Yes ◆ No ___

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

Remarks:

Site is in a swale with drainage patterns evident among the hummocks from grazing.