



December 21, 2020

Ms. Laura Morland, PE  
Environmental Practice Leader  
Mead & Hunt  
2440 Demming Way  
Middleton, WI 53562-1562

Dear Ms. Morland,

Carlson McCain, Inc. is pleased to submit the Aquatic Resources Delineation Report of the Stanley Municipal Airport located near Stanley, North Dakota for your review.

Please call me at 701-595-7004 if you have any questions or need additional information

Sincerely,

A handwritten signature in black ink that reads "Gregory W. Meyer". The signature is written in a cursive style.

Greg Meyer M.S.  
Ecologist

# AQUATIC RESOURCES DELINEATION REPORT

Stanley Municipal Airport  
Stanley, North Dakota  
Carlson McCain Project No.: 9065

Prepared for:  
Ms. Laura Morland  
Environmental Practice Leader  
Mead & Hunt  
2440 Deming Way  
Middleton, WI 53562-1562

December 21, 2020

Prepared by:



3831 LOCKPORT STREET, SUITE C  
BISMARCK, ND 58503

TEL 701.255.1475  
FAX 701.255.1477

[CARLSONMCCAIN.COM](http://CARLSONMCCAIN.COM)

ENGINEERING \ LAND SURVEYING \ ENVIRONMENTAL

## EXECUTIVE SUMMARY

The Aquatic Resource Delineation was conducted in accordance with the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Wetland Manual). Wetlands are defined by Clean Water Act Section 404; 33 CFR Part 328.3 – Definition of the Waters of the U.S. as, “*The term wetlands means those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas.*”

The Aquatic Resource Delineation was conducted in accordance with the 2008 “A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States” and the 2014 “Occurrence and Distribution of Ordinary High Water Mark (OHWM) Indicators in Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. USACE OHWM Delineation Cover and Sheets were completed for each delineated Water of the US. A detailed description of Waters of the US can be found Under Title 33, Chapter II, Code of Federal Regulations (CFR), Part 328 “Definition of Waters of the United States”.

The Stanley Municipal Airport is planning future improvements. Numerous aquatic resources were delineated within the airport. Seven wetlands and three ephemeral drains were delineated. Wetlands comprised approximately 0.88 acres and the constructed ephemeral drains comprised approximately 0.38 acres and 1,712 linear feet. The Project Area comprises 114 acres near Stanley, North Dakota.

**TABLE OF CONTENTS**

I. INTRODUCTION..... 1  
II. LOCATION ..... 1  
III. METHODS..... 1  
IV. EXISTING CONDITIONS..... 2  
    4.1 Landscape Setting ..... 2  
        4.1.2 Overview ..... 2  
        4.1.3 Aquatic Resource Systems ..... 4  
    4.2 Soil Descriptions ..... 4  
    4.3 Climatic Conditions ..... 4  
V. REFERENCES..... 5

**TABLES**

Table 1 Summary of aquatic resources identified within the Stanley Municipal Airport Project Area. 3

**EXHIBITS**

- Exhibit 1 – Project Location Map
- Exhibit 2 – Project Access Map and Google Map Directions
- Exhibit 3 – Aquatic Resources Map
- Exhibit 4 – USGS Topo Map
- Exhibit 5 – Historical Aerial Map
- Exhibit 6 – Soil Map Units

**APPENDICES**

- Appendix A Project Photographs
- Appendix B Plant List
- Appendix C USACE Wetland Determination Data Sheets
- Appendix D Project Area Permission Sheet
- Appendix E Aquatic Resources Excel Table

## ACRONYMS AND ABBREVIATIONS

**Airport** Stanley Municipal Airport  
**BMP** best management practice  
**Carlson McCain** Carlson McCain, Inc.  
**cfs** cubic feet per second  
**CR** County Route  
**Mountrail** Mountrail County  
**FAC** facultative  
**FACU** facultative upland  
**FACW** facultative wetland  
**HUC** Hydrologic Unit Code  
**LIDAR** Light Detection and Ranging  
**LWD** large woody debris  
**MP** Mile Post  
**NAIP** National Agriculture Imagery Program  
**NDAWN** North Dakota Agricultural Weather Network  
**NHD** National Hydrography Dataset  
**NI** No Information  
**NRCS** Natural Resources Conservation Service  
**NWI** National Wetland Inventory  
**NWPL** National Wetland Plant List  
**OBL** Obligate  
**OHWM** ordinary high water mark  
**PAB** palustrine aquatic bed  
**PEM** palustrine emergent  
**PFO** palustrine forested  
**PLSS** Public Land Survey System  
**PSS** palustrine scrub-shrub  
**ROW** right-of-way  
**SR** State Route  
**USACE** U.S. Army Corps of Engineers  
**USDA** U.S. Department of Agriculture  
**USFWS** U.S. Fish and Wildlife Service  
**USGS** United States Geological Survey  
**UTM** Universal Transverse Mercator coordinate system  
**WRIA** Water Resource Inventory Area

## I. INTRODUCTION

Stanley Municipal Airport (Airport) is planning future improvements within its boundaries located in Section 29, Township (T) 156 North (N), Range (R) 91 West (W). **Please refer to Exhibit 1, Project Location Map.**

Contact Information:

Project Manager – Laura Morland, PE  
Mead & Hunt  
608-443-0608  
laura.morland@meadhunt.com

The purpose of this report is to identify and describe aquatic resources and facilitates efforts to:

1. Avoid and minimize impacts to aquatic resources during the design process
2. Document aquatic resource boundaries for review by regulatory authorities.

## II. LOCATION

The Airport is located approximately one-half mile southwest of Stanley, North Dakota. It can be accessed by traveling west on US Highway 2 to its intersection with 82<sup>nd</sup> Ave. Turn south onto 82<sup>nd</sup> Ave. and proceed for approximately 0.75 miles to the entrance of the Airport. The Project Area is located at (lat: 48.300808; long: -102.401787). Additional directions are contained in the Google Map Directions. **Please refer to Exhibit 2, Project Access Map and Google Map Directions.**

## III. METHODS

The aquatic resource delineation was conducted in accordance with the USACE *1987 Wetland Delineation Manual* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)* (Wetland Manual). Wetlands are defined by Clean Water Act Section 404; 33 CFR Part 328.3 – Definition of the Waters of the U.S. as, “*The term wetlands means those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas.*”

In addition, the field delineation was conducted in accordance with the North Dakota Century Code 43-46, Professional Soil Classifiers.

Prior to field work existing resource information was used to aid in identifying and delineating aquatic resources located within the Project Area. These resources included: Mountrail County NAIP 2020, 2019, 2018, 2017, 2016, 2015, 2014, 2012, 2010, and 2009 aerial photographs; USFWS NWI (USFWS, 2020); digital web soil survey of Mountrail County (USDA-NRCS, 2020); and the USGS National Hydrography Dataset (USGS, 2020).

All wetland areas were documented with paired upland and wetland observation points. A description of the wetland type and documentation of the vegetation, hydrology, and soils were recorded on the associated USACE Wetland Determination Data Forms of the Great Plains Manual (**Appendix C**) and are identified by an observation point number (i.e., 1, 2).

Existing vegetation was classified using hydrophytic vegetation criteria outlined in the Wetland Manual and the *National Wetland Plant List* (Lichvar, 2016). Hydric soil indicators were determined using the *Field Indicators of Hydric Soils in the United States; Guide for Identifying and Delineating Hydric Soils, Version 7.0* (USDA-NRCS, 2010). Hydrology was determined on-site by observation of hydrologic indicators as defined by the Wetland Manual.

Soils, vegetation, hydrology, and landscape indicators were evaluated along the wetland edge to accurately delineate the wetland boundaries. Aquatic resources were recorded with a Samsung Galaxy tablet with the assistance of an EOS Positioning Systems Arrow Lite GPS receiver for sub-meter accuracy.

The Project was also evaluated for Waters of the US besides wetlands during the aquatic resource delineation. The Project was evaluated in accordance with the guidelines set forth by the 2008 “A Field Guide to the Identification of the OHWM in the Arid West Region of the Western United States” and the 2014 “Occurrence and Distribution of Ordinary High Water Mark (OHWM) Indicators in Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. A detailed description of Waters of the US can be found Under Title 33, Chapter II, Code of Federal Regulations (CFR), Part 328 “Definition of Waters of the United States”. These aquatic resources may include traditional navigable waters (rivers, streams, and lakes), lakes, ponds, and impoundments of and adjacent wetlands to jurisdictional waters, tributaries; and waters upon which Interstate or Foreign commerce has occurred.

## IV. EXISTING CONDITIONS

### 4.1 Landscape Setting

The Project is located on the Missouri Coteau Slope, which is part of the Northwestern Great Plains Ecoregion. The Missouri Coteau Slope has rolling topography with a simple drainage pattern and fewer wetlands than more recently glaciated areas located to the north and east. Dryland agriculture, livestock production, and oil and gas extraction activities are common in the area (Bryce et al. 1998). Common agriculture crops grown in the area are small grains, alfalfa, soybeans, and sunflowers. Livestock graze pastures located on steep slopes along drainages such as the Little Knife River. **Please refer to Exhibit 3 Aquatic Resources Map, Exhibit 4 USGS Topo Map, and Appendices A and B for Project Photographs and Plant List.**

The Airport was not constructed in 1958. **Please refer to Exhibit 5 Historical Aerial Map.**

The entire Project Area was evaluated during the field delineation by Greg Meyer, Ecologist of Carlson McCain and Darrell VanderBusch, Registered Professional Soil Classifier. The field delineation was conducted on September 24, 2020, during pleasant conditions (65 degrees Fahrenheit temperature and southwest winds at 10-15 miles per hour). The Project Area covers approximately 114 acres.

The Project Area is located within the Lake Sakakawea (10110101) HUC Watershed that comprises approximately 6,813 square miles. The Little Knife River, located approximately 0.25 miles south of the Project Area, is a direct tributary of Lake Sakakawea. From near the Project Area, The Little Knife River flows approximately 30 miles to Lake Sakakawea.

#### 4.1.1 Aquatic Resources

##### 4.1.2 Overview

Seven wetlands and three ephemeral drains were delineated. Wetlands comprised approximately 0.88 acres and the constructed ephemeral drains comprised approximately 0.38 acres and 1,712 linear feet. Four wetlands (1c, 2a, 2b, and 5b) are part of the Airport’s storm water removal system. Wetlands 1a,

3b, and 4 are naturally-occurring pothole wetlands. Wetland 3b is partially drained by the Airport's storm water removal system. Constructed drains 1b, 3a, and 5a, convey water away from the Airport and only flow in an ephemeral fashion following snow-melt or significant precipitation events. **Please refer to Exhibits 3 Aquatic Resource Map, Appendix A Project Photographs, Appendix B Plant List, Appendix C USACE Wetland Determination Data Sheet.**

No aquatic resources were depicted on the topographic quadrangle within the Project Area. **Please refer to Exhibit 4 USGS Topo Map.** Table 1 summarizes the delineated aquatic resource located within the Project Area.

**Table 1 Summary of aquatic resources identified within the Stanley Municipal Airport Project Area.**

Aquatic Resource	Test Hole (in wetland)	Aquatic Resources Classification		LONG West (Dec. Deg.)	LAT North (Dec. Deg.)	Aquatic Resource Size (acres)	Aquatic Resource Length (linear feet)	Aquatic Resource Type
		Cowardin*	Location					
# 1a	1	PEMA	Section 29, T156N-R91W	-102.398409	48.299551	0.28	NA	Wetland
# 1b	NA	NA	Section 29, T156N-R91W	-102.399052	48.300018	0.01	104	Drain (constructed)
# 1c	3	PEMAx	Section 29, T156N-R91W	-102.399052	48.300018	0.01	NA	Wetland (ditch)
# 2a	9	PEMAx	Section 29, T156N-R91W	-102.401181	48.300036	0.05	NA	Wetland (ditch)
# 2b	7	PEMAx	Section 29, T156N-R91W	-102.401974	48.30012	0.04	NA	Wetland (ditch)
# 3a	30	NA	Section 29, T156N-R91W	-102.403363	48.301539	0.27	819	Drain (constructed)
# 3b	5	PEMA <sub>d</sub>	Section 29, T156N-R91W	-102.404435	48.300672	0.26	NA	Wetland
# 4	11	PEMA	Section 29, T156N-R91W	-102.411615	48.302414	0.22	NA	Wetland
# 5a	34	NA	Section 29, T156N-R91W	-102.407597	48.300629	0.1	788	Drain (constructed)
# 5b	13	PEMAx	Section 29, T156N-R91W	-102.407618	48.298473	0.02	NA	Wetland (ditch)

\*Cowardin Classification from NWI layer <http://wetlandsfws.er.usgs.gov/NWI/> and from Classification of wetlands and deepwater habitats of the United States, (Cowardin 1979). Wetlands without designated classifications were assigned classifications during the aquatic resources delineation.



### 4.1.3 Aquatic Resource Systems

Wetlands 1a, 3b, and 4 are natural pothole wetlands located within the Airport. Prevalent hydrophytic vegetation within these wetlands include: prairie cordgrass (*Spartina pectinata* - FACW), reed canary grass (*Phalaris arundinacea* - FACW), foxtail barley (*Hordeum jubatum* - FACW), and curly dock (*Rumex crispus* - FAC). Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were the prevalent hydric soil indicators in the wetlands. Sediment Deposits (B2), Geomorphic Position (D2), and FAC-Neutral Test (D5) were all noted as indicators of hydrology within the wetland areas. Portions of the Airport's storm water removal system flows into Wetland 1a. Wetland 3b is partially drained by the Airport's storm water removal system but pockets of hydrophytic vegetation still exist in the wetland area. Wetland 4 is an isolated pothole wetland as no surface connection to other aquatic resources or ephemeral ditches were noted. The wetlands were all considered to be palustrine, emergent, temporary flooded hydrologic regime (PEMA).

Wetlands 1c, 2a, 2b, and 5b consist of shallow wetlands located in the Airport's storm water removal system. These wetlands are shallow scrapes that retain some of the water that is being conveyed within the storm water system. These wetlands contained cattails (*Typha angustifolia* - OBL), reed canary grass, foxtail barley, common spike rush (*Eleocharis palustris* - OBL), and clustered field sedge (*Carex praegracilis* - FACW). Depleted Matrix (F3) was the prevalent hydric soil indicator in the wetlands. Sediment Deposits (B2), Geomorphic Position (D2), and FAC-Neutral Test (D5) were all noted as indicators of hydrology within the wetland areas. The wetlands were all considered to be palustrine, emergent, temporary flooded hydrologic regime, excavated (PEMAx).

Ephemeral Drains 1b, 3a, and 5a were all constructed to convey hydrology away from the Airport. Ephemeral Drain 1b conveys hydrology from Wetland 1c into Wetland 1a and away from the eastern portion of the Airport. The constructed drain is approximately 12-inches wide and 8-inches in depth. Upland vegetation grows throughout the drain. Ephemeral Drain 3a was constructed to convey hydrology away from the western portion of the Airport facilities. The constructed drain is approximately 10-feet wide and 15-inches in depth. Slender wheatgrass (*Elymus trachycaulus* - FACU) is prevalent throughout the constructed drain. Ephemeral Drain 5a is a large constructed drain that flows water south away from the Airport. Hydrology from the western portion of the Airport is conveyed to an inlet culvert on the north side of the runway. The culvert conveys water to the south under the runway and flows into Ephemeral Drain 5a. Upland vegetation is prevalent in the drain except for the southern end where it enters Wetland 5b. Kentucky bluegrass (*Poa pratensis* - FACU) and Canada thistle (*Cirsium arvense* - FACU) are prevalent in the northern portion near the culvert while smooth brome (*Bromus inermis* - UPL) is prevalent throughout the rest of the drain.

## 4.2 Soil Descriptions

Mountrail County Soil Survey: The USDA Web Soil Survey indicates that the Airport is located on somewhat hydric soils (1-32% rating). Prevalent soils include C154C – Zahl-Williams-Bowbells loams, 3-9% slopes, C132B – Williams-Zahl loams, 3-6% slopes, C360B – Livona fine sandy loam 0-6% slopes, and C800B – Appam sandy loam 2-6% slopes . **Please refer to Exhibit 6, Soil Survey Map.**

## 4.3 Climatic Conditions

Precipitation data from the NDAWN Ross 4E weather station was analyzed as this was the closest weather station with a complete dataset. Rainfall / precipitation within 2020 should be considered "dry" (7.36 inches) as precipitation amounts were approximately 53% of normal amounts (13.86 inches) (NDAWN, 2020).

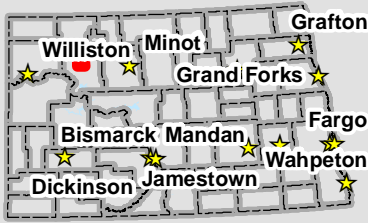
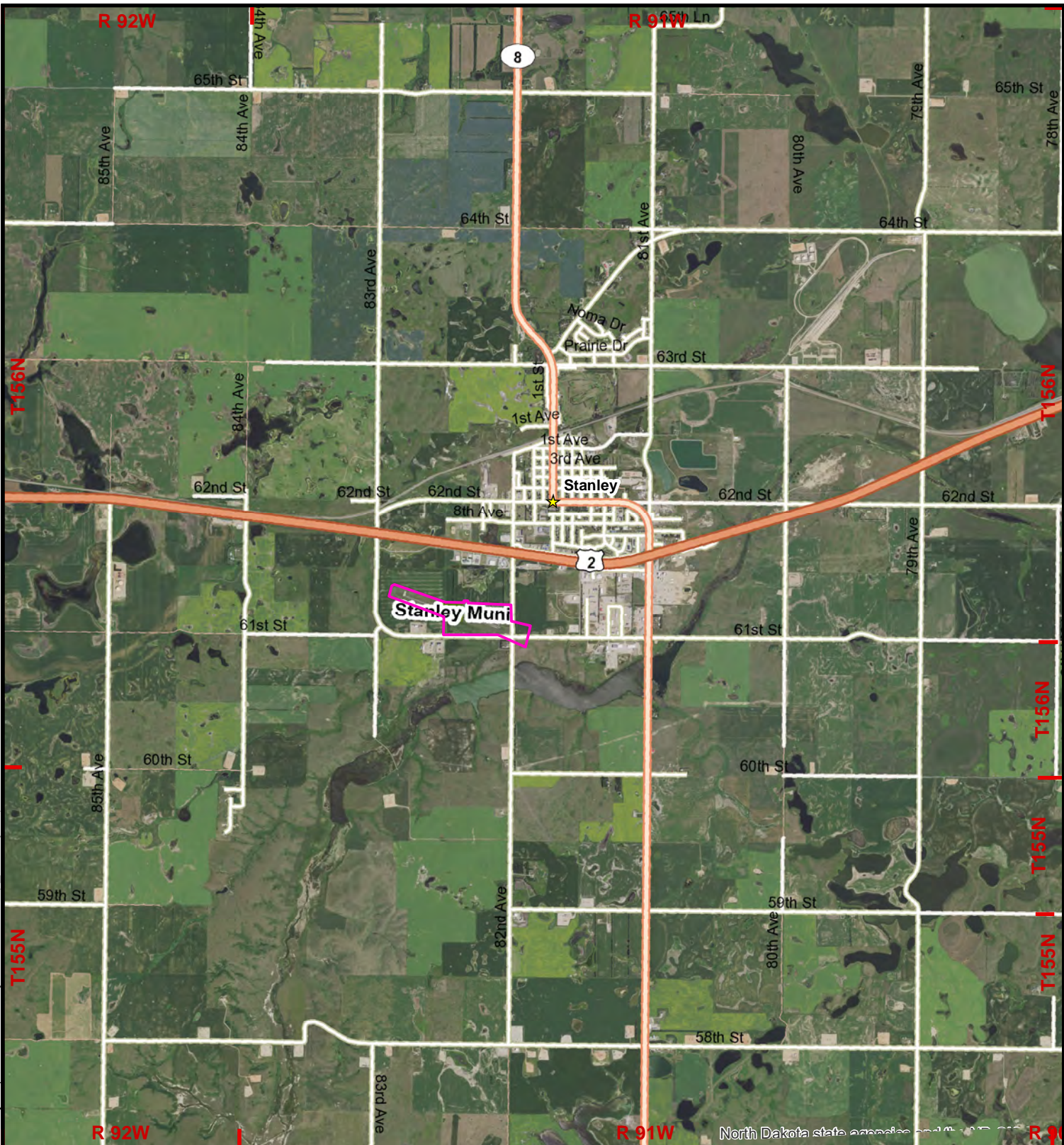
No interstate or foreign commerce was observed during the field delineation. It is unknown but possible that interstate or foreign commerce has occurred within the delineated aquatic resources.

## V. REFERENCES

- Bryce, S., J.M. Omemik, D.E. Pater, M. Ulmer, J. Schaar, J. Freeouf, R. Johnson, P. Kuck, and S.H. Azevedo. 1998. Ecoregions of North Dakota and South Dakota. Jamestown, North Dakota: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/index.htm>
- Cowardin, L. M., V. Carter, F. C. Golet, E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. Jamestown, ND: Northern Prairie Wildlife Research Center Online. <http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm> (Version 04DEC1998) > Accessed September 2020.
- Environmental Laboratory. 1987. *Corp of Engineers Wetlands Delineation Manual*. Wetlands Research Program. Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, US Army Corp of Engineers., Vicksburg, Mississippi, USA.
- Environmental Laboratory. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0)*. U.S. Army Corps of Engineers, U.S. Army Engineer Research and Development Center Vicksburg, Mississippi, USA.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. *The National Wetland Plant List*. 2016 Wetland Ratings. Phytoneuron 2016 – 30:1-17. <http://wetland-plants.USACE.army.mil> Accessed September 2020.
- Lichvar, R. W., and S. M. McColley. 2008. A Field Guide to the Identifications of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States A Delineation Manual. ERDC/CRREL TR-08-12. Hanover, NH: U.S. Army Engineer Research and Development Center.
- Mersel, M. K., R. W. Lichvar, J. J. Gillrich, L. E. Lefebvre. 2014. Occurrence and Distribution of Ordinary High Water Mark (OHWM) Indicators in Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States. ERDC/CRREL TR-14-11. Hanover, NH: U.S. Army Engineer Research and Development Center.
- North Dakota Agricultural Weather Network. 2020. Ross 4E weather station. [https://ndawn.ndsu.nodak.edu/get-table.html?station=66&variable=mdr&dfn=&year=2020&ttype=monthly&quick\\_pick=1\\_y&begin\\_date=2019-12&count=12](https://ndawn.ndsu.nodak.edu/get-table.html?station=66&variable=mdr&dfn=&year=2020&ttype=monthly&quick_pick=1_y&begin_date=2019-12&count=12) Accessed September 2020.
- USDA-NRCS. 2010. *Field Indicators of Hydric Soils in the United States—Guide for Identifying and Delineating Hydric Soils, Version. 7.0* in G.W. Hurt, L.M. Vasilas, and C.V. Noble, editors. USDA-NRCS in cooperation with the National Technical Committee for Hydric Soils.
- USDA-NRCS. 2020. Soil Survey of Mountrail County, North Dakota. <http://websoilsurvey.nrcs.usda.gov/app> Accessed September 2020.
- USFWS. 2020. United States Fish and Wildlife Service. National Wetlands Inventory. <http://wetlandsfws.er.usgs.gov/NWII/> Accessed September 2020.
- USGS. 1981. U.S. Geological Survey Topographic Quadrangle Map. Stanley (48102c4). 1:24,000 scale

USGS. 2020. U.S. Geological Survey, National Hydrography Dataset. <https://www.usgs.gov/core-science-systems/ngp/national-hydrography/access-national-hydrography-products> Accessed September 2020.

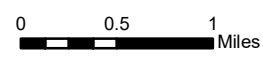




- Legend**
- ★ City
  - Stanley Municipal Airport



### Exhibit 1 Project Location Map Stanley Municipal Airport Stanley, North Dakota

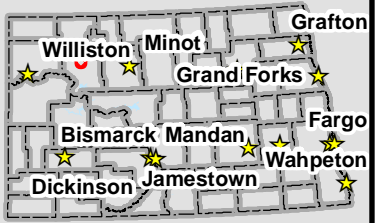
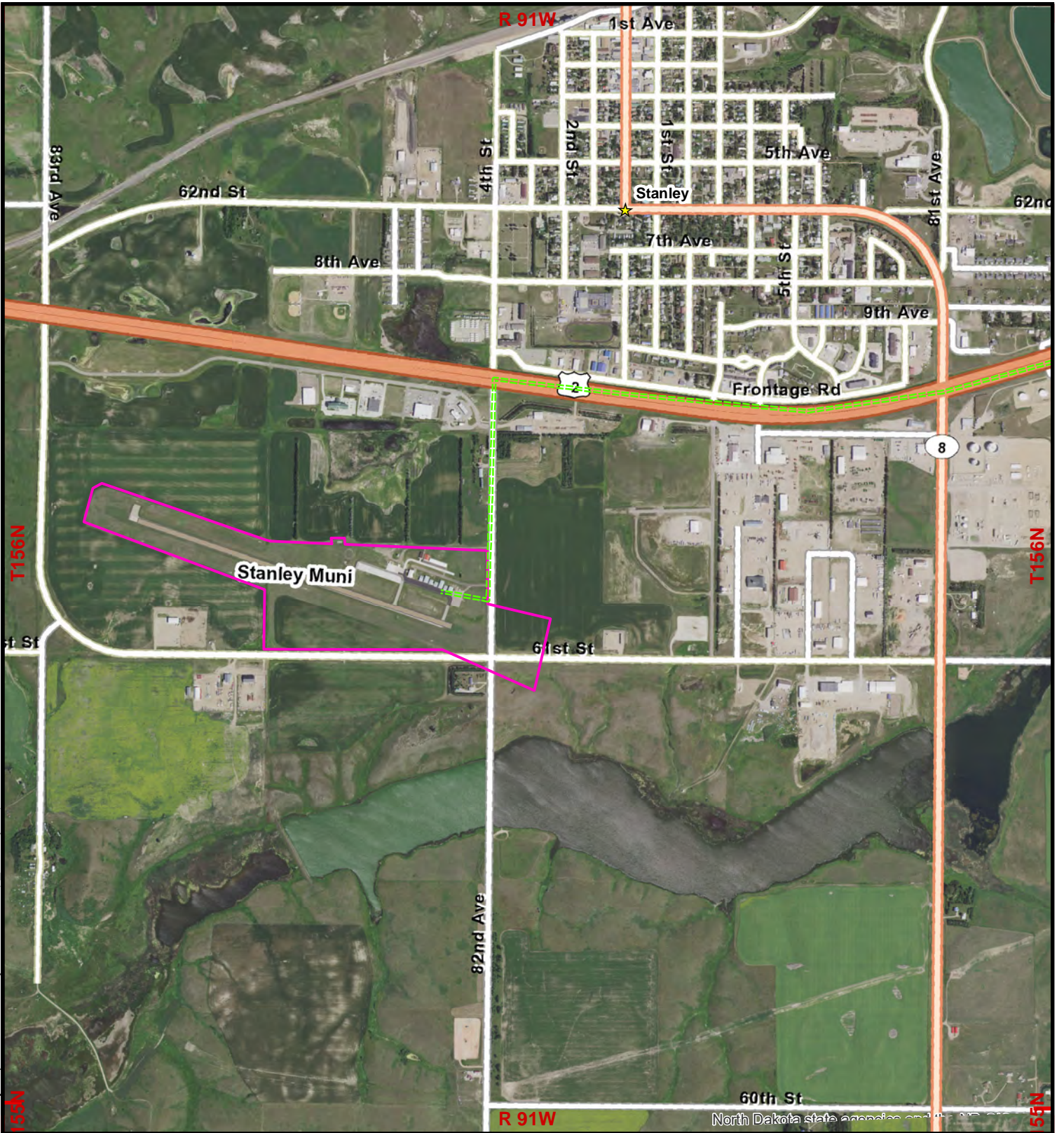


1:63,360





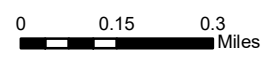
E:\Projects\Meach-Hunt\Stanley Airport\Exhibits\Project Access Map\_ Stanley Airport.mxd  
December 2020



- Legend**
- ★ City
  - Project Access
  - Stanley Municipal Airport



**Exhibit 1**  
**Project Access Map**  
**Stanley Municipal Airport**  
**Stanley, North Dakota**



1:19,008



Basemap: Orthophotos\NAIP\_2020\NAIP Mountrail County, North Dakota



**A** University Dr, Bismarck, ND 58504  
**B** 6135 82nd Ave NW, Stanley, ND 58784

2 hr 40 min , 169 miles  
 Light traffic  
 Via US-83 N, US-2 W

Type your route notes here

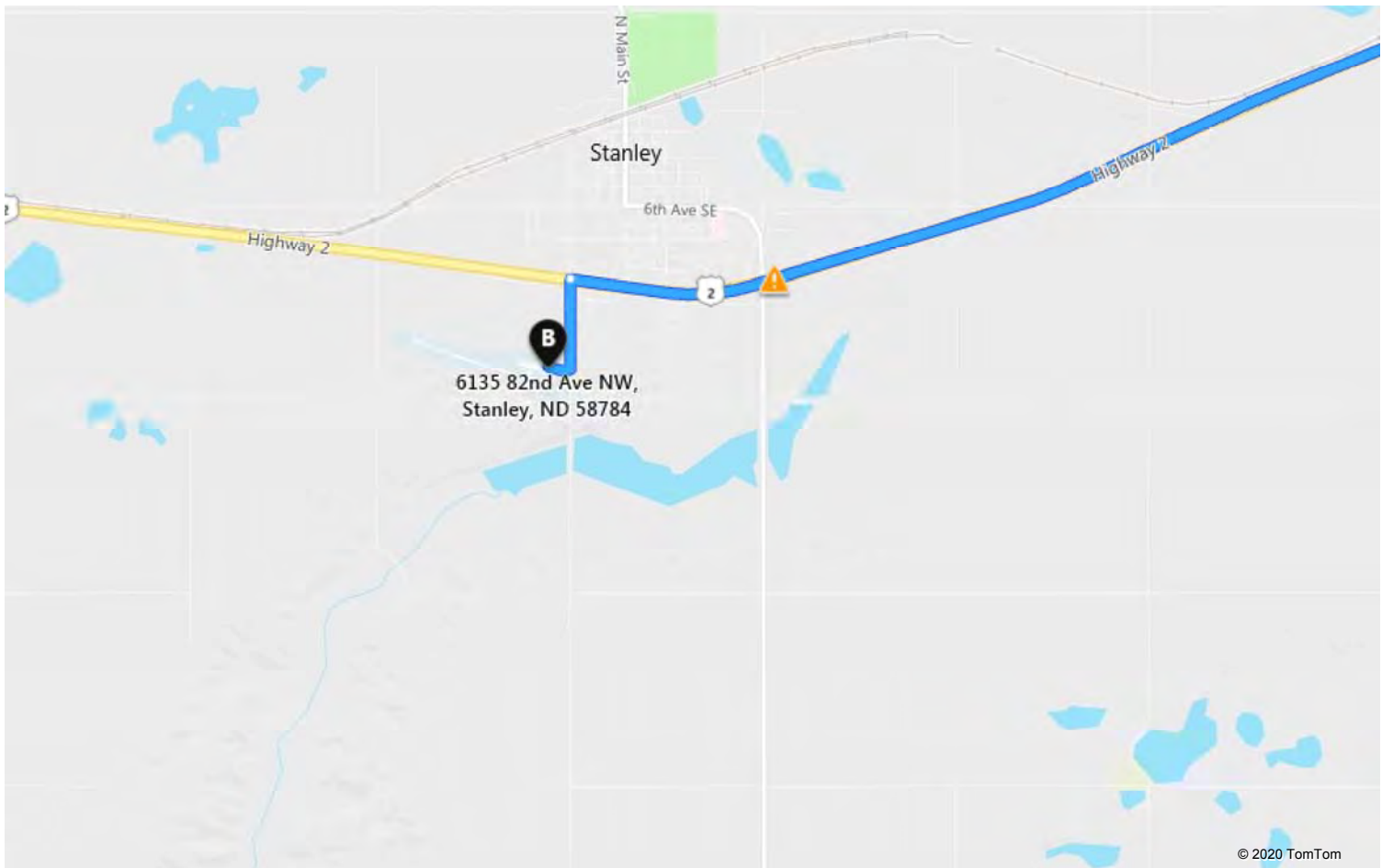
**A** University Dr, Bismarck, ND 58504

↑	1. Head <b>north</b> on <b>ND-1804 / University Dr</b> toward 26th St SE	1.3 mi
↘	2. Turn <b>right</b> onto <b>Airport Rd</b>	0.9 mi
↘	3. Turn <b>right</b> onto <b>ND-810 / E Bismarck Expy</b> ▲ <i>Minor Congestion</i>	2.1 mi
	4. Keep <b>straight</b> onto <b>I-94 E Bus Loop / ND-810 / N Bismarck Expy</b> ▲ <i>Moderate Congestion</i>	1.7 mi
	5. Take ramp <b>left</b> for <b>I-94 W / US-83 N</b>	1.8 mi
↘	6. At exit <b>159</b> , take ramp <b>right</b> for <b>US-83 North</b> toward <b>Minot / Wilton</b>	0.2 mi
↘	7. Turn <b>right</b> onto <b>US-83 N / ND-1804 / State St</b> toward <b>Minot / Wilton</b> ▲ <i>Moderate Congestion</i>	106.1 mi, 1 hr 39 min
	8. Take ramp <b>right</b> for <b>US-83 Byp W / US-2 West / US-52 West</b> toward <b>Williston</b> Pass Subway in 3.1 mi	13.1 mi, 14 min
↙	9. Bear <b>left</b> onto <b>US-2 W / Highway 2 W</b> Pass Hot Stuff Pizza on the left in 9.9 mi ▲ <i>Minor Congestion</i>	41.5 mi, 31 min
↙	10. Turn <b>left</b> onto <b>82nd Ave NW</b>	0.5 mi
↘	11. Turn <b>right</b>	0.1 mi

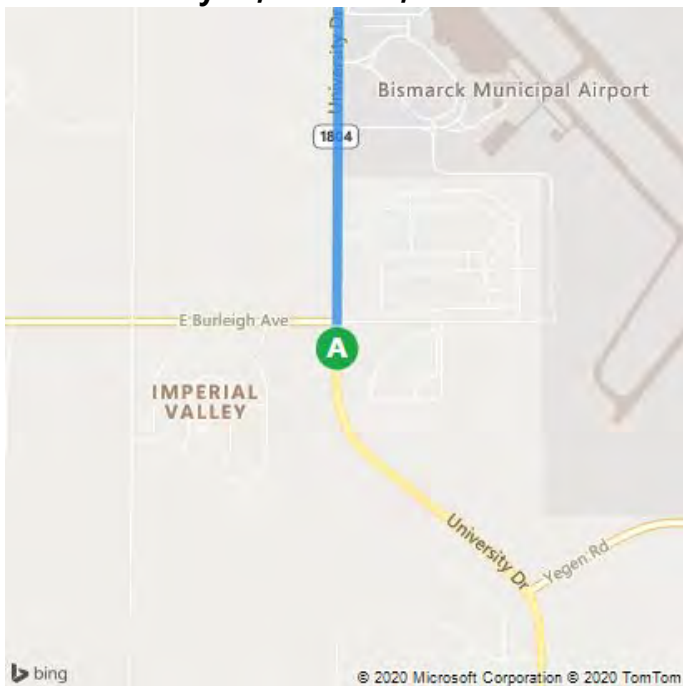
12. Arrive at your destination on the left  
The last intersection is 82nd Ave NW

**B** 6135 82nd Ave NW, Stanley, ND 58784

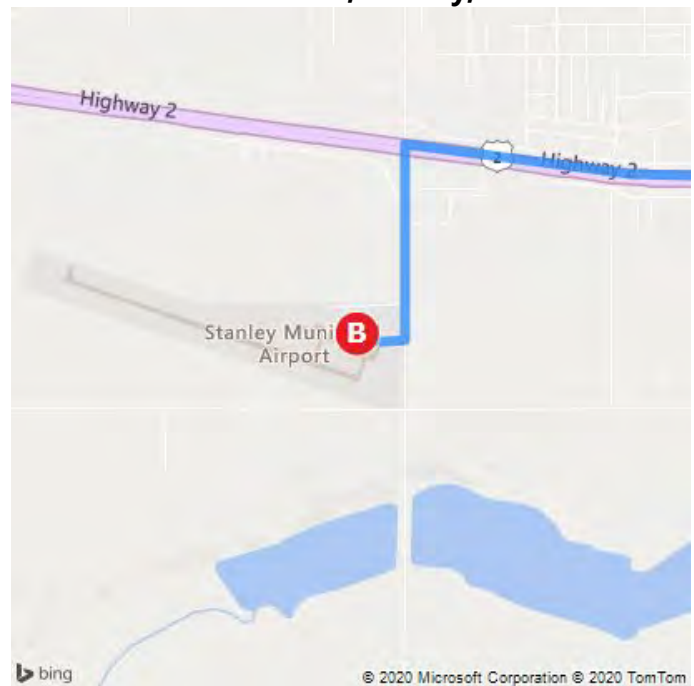




**A University Dr, Bismarck, ND 58504**



**B 6135 82nd Ave NW, Stanley, ND 58784**



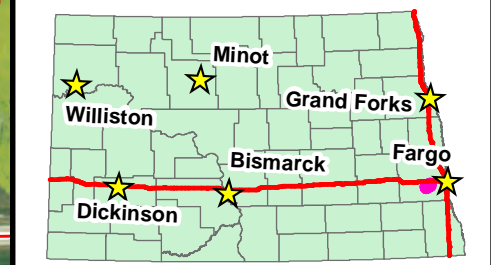
These directions are subject to the Microsoft® Service Agreement and are for informational purposes only. No guarantee is made regarding their completeness or accuracy. Construction projects, traffic, or other events may cause actual conditions to differ from these results. Map and traffic data © 2020 TomTom.



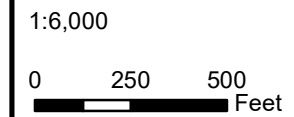
December 2020 E:\Projects\Mead-Hunt\Stanley Airport\Aquatic Resource Stanley Airport 3.mxd



- ### Legend
- Upland Observation Point
  - ▲ Wetland Observation Point
  - Ephemeral Drain
  - Wetland
  - Storm Water Flow Path
  - Ephemeral swale
  - Culvert
  - Stanley Municipal Airport
  - PLSS Section



Survey: Stanley Airport  
 Delineators: GWM & DV  
 Map Date: 12/2/2020  
 Version: 1  
 Revision Date: NA



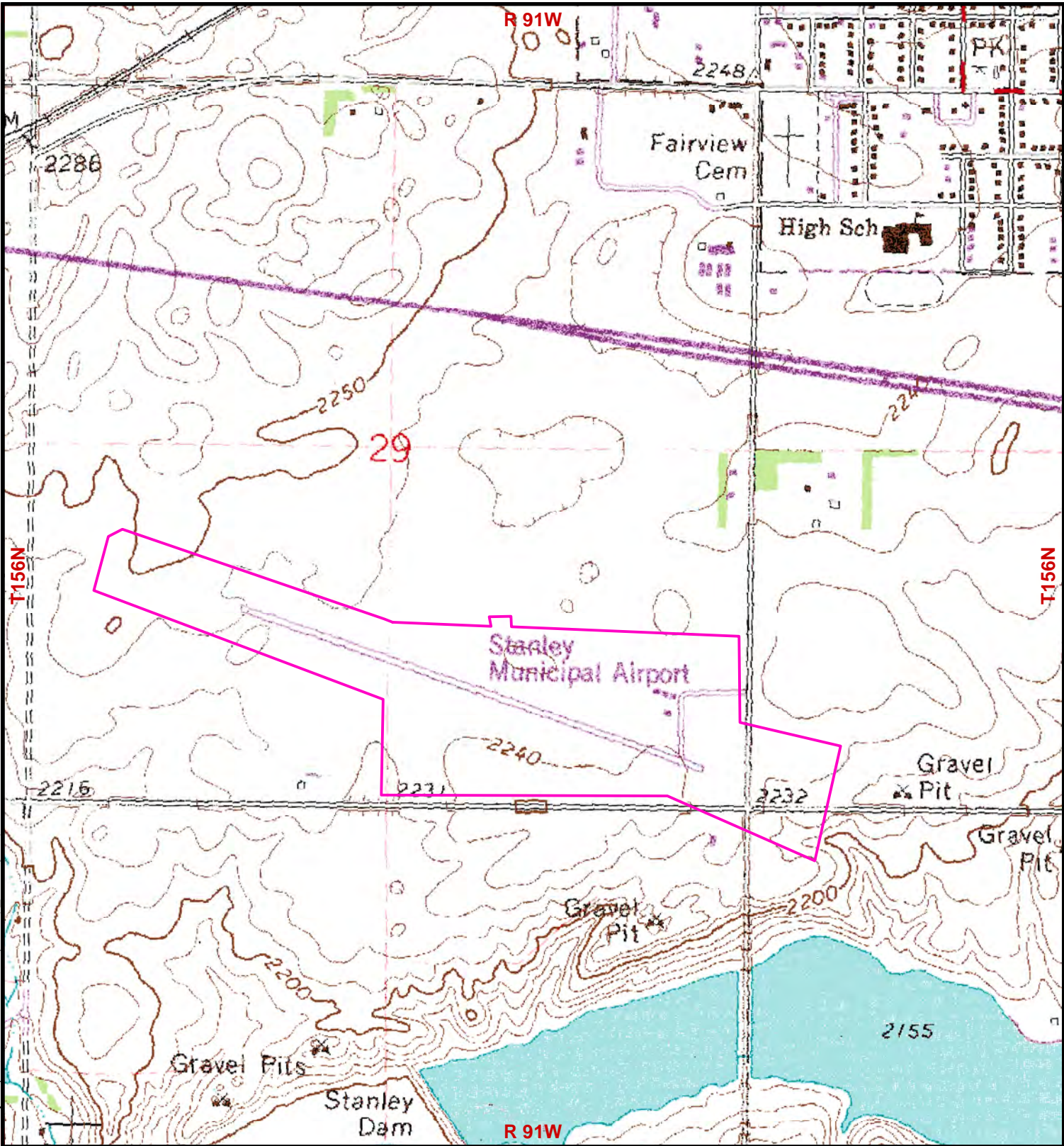
Stanley Municipal Airport

Stanley, North Dakota

Exhibit 3  
 Aquatic Resources Map

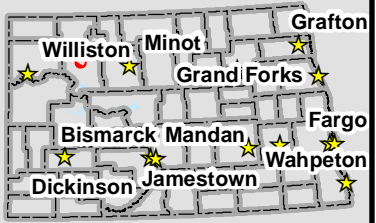
Basemap: NAIP Mountrail County 2019 Aerial Image





E:\Projects\Meach-Hunt\Stanley Airport\Exhibits\USGS Topo Map Stanley Airport.mxd

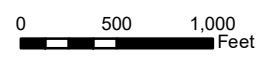
December 2020



**Legend**  
 Stanley Municipal Airport



**Exhibit 1**  
**USGS Topo Map**  
**Stanley Municipal Airport**  
**Stanley, North Dakota**

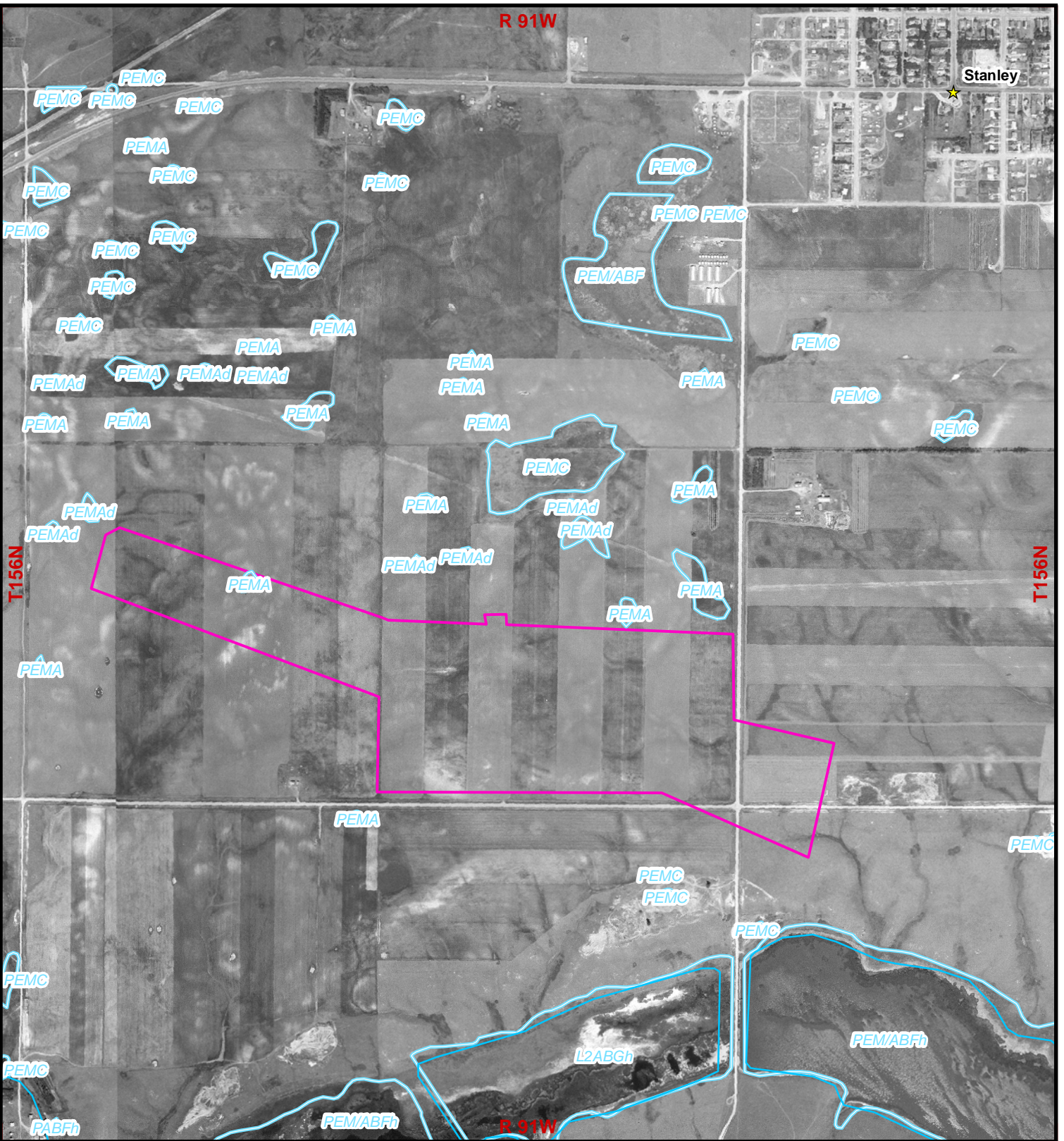


1:12,000

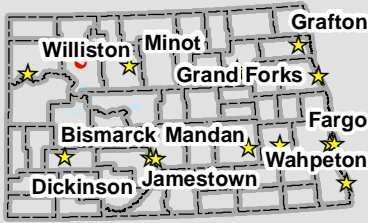


Basemap: USGS Topographic Quadrangle Stanley (4810204) 1981





E:\Projects\Meach-Hunt\Stanley Airport\Exhibits\Historic Aerial Map - Stanley Airport.mxd  
December 2020

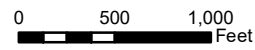


**Legend**

- ★ City
- USGS Streams
- National Wetland Inventory
- Stanley Municipal Airport



**Exhibit 1  
Historic Aerial Map - 1958  
Stanley Municipal Airport  
Stanley, North Dakota**



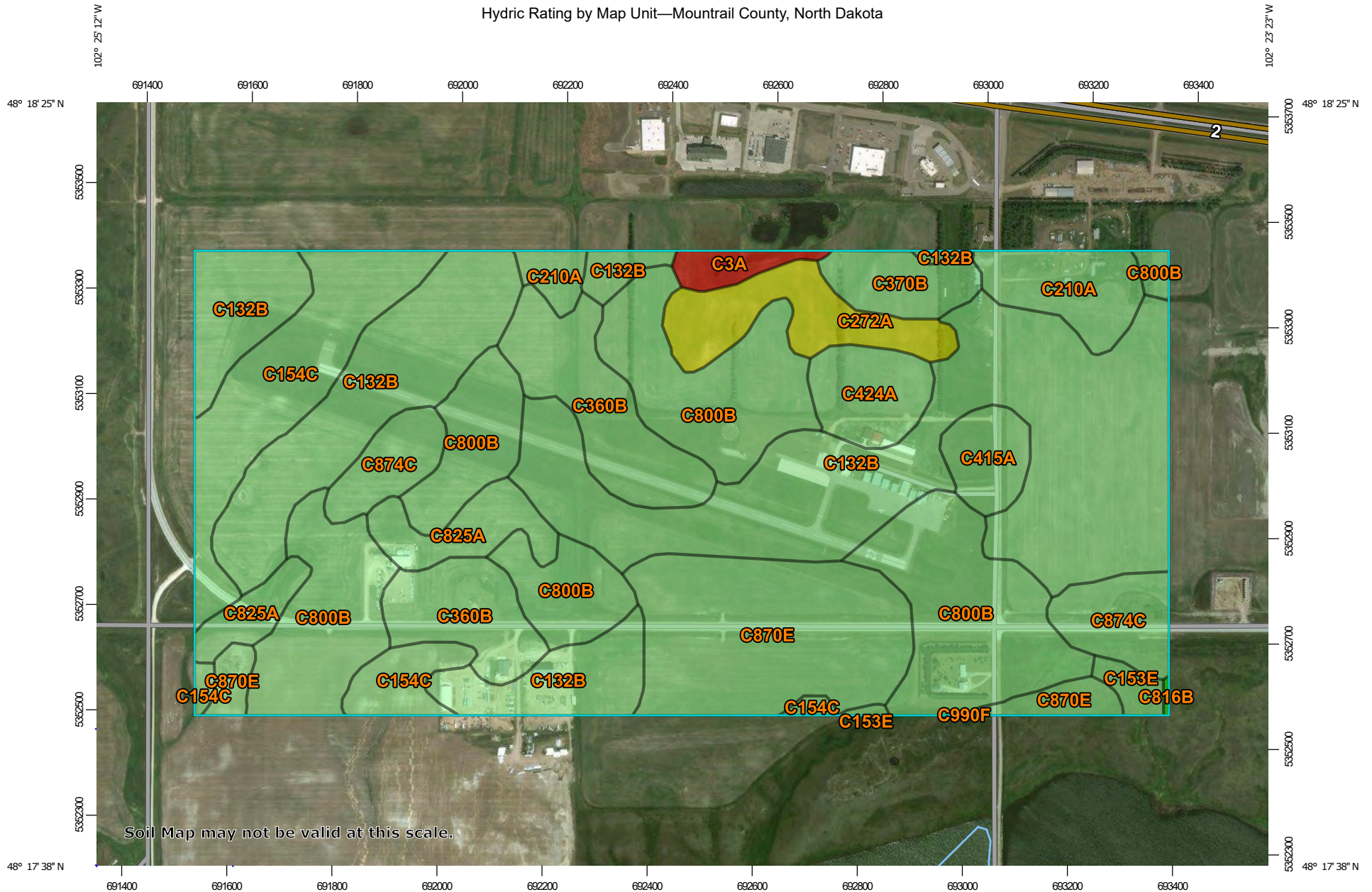
1:12,000



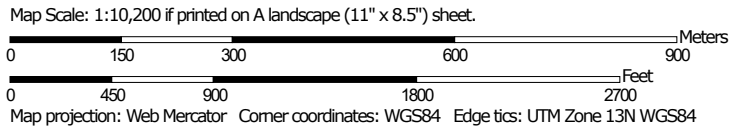
Basemap: Orthophotos\19580\Mountrail County, North Dakota



Hydric Rating by Map Unit—Mountrail County, North Dakota



Soil Map may not be valid at this scale.









## MAP LEGEND

### Area of Interest (AOI)







 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


#### Soil Rating Lines

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available






#### Soil Rating Points

-  Hydric (100%)
-  Hydric (66 to 99%)
-  Hydric (33 to 65%)
-  Hydric (1 to 32%)
-  Not Hydric (0%)
-  Not rated or not available


### Water Features

 Streams and Canals

### Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mountrail County, North Dakota  
 Survey Area Data: Version 24, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2016—Jun 23, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
C3A	Parnell silty clay loam, 0 to 1 percent slopes	100	3.4	0.8%
C132B	Williams-Zahl loams, 3 to 6 percent slopes	2	131.4	32.4%
C153E	Zahl-Max loams, 15 to 25 percent slopes	8	2.6	0.7%
C154C	Zahl-Williams-Bowbells loams, 3 to 9 percent slopes	2	31.2	7.7%
C210A	Williams-Bowbells loams, 0 to 3 percent slopes	3	13.2	3.2%
C272A	Hamerly-Tonka complex, 0 to 3 percent slopes	41	13.9	3.4%
C360B	Livona fine sandy loam, 0 to 6 percent slopes	3	29.2	7.2%
C370B	Krem-Lihen loamy fine sands, 0 to 6 percent slopes	2	7.6	1.9%
C415A	Tansem loam, 0 to 2 percent slopes	1	6.7	1.7%
C424A	Minot silty clay, 0 to 2 percent slopes	2	9.3	2.3%
C800B	Appam sandy loam, 2 to 6 percent slopes	1	87.8	21.6%
C816B	Lehr loam, 2 to 6 percent slopes	0	0.2	0.0%
C825A	Divide loam, 0 to 2 percent slopes	10	12.8	3.2%
C870E	Wabek-Lehr-Appam complex, 9 to 25 percent slopes	2	41.1	10.1%
C874C	Wabek-Appam complex, 6 to 9 percent slopes	1	15.3	3.8%
C990F	Pits, gravel and sand, 0 to 60 percent slopes	0	0.0	0.0%
<b>Totals for Area of Interest</b>			<b>405.7</b>	<b>100.0%</b>

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## **Rating Options**

*Aggregation Method: Percent Present*

*Component Percent Cutoff: None Specified*

*Tie-break Rule: Lower*



***Appendix A***

*Project Photographs*



**Photograph 1. View of Wetland 1a taken facing southeast from Ephemeral Drain 1b. Hydrophytic vegetation is prevalent in the naturally occurring wetland.**



**Photograph 2. View of Ephemeral Drain 1b taken facing northwest. The constructed drain conveys water away from the airport into Wetland 1a.**



**Photograph 3. View of Wetland 1c taken facing west. Wetland 1c is part of the storm water removal system and is a slightly deeper area at the lip of the culvert. The culvert connects to Ephemeral Drain 1b and flows water away from the Airport.**



**Photograph 4. View of Wetland 2b taken facing west. Wetlands 2a and 2b are slightly deeper areas of the Airport's storm water removal system. Storm water is conveyed to the west into a large culvert under the runway and then it flows south.**





**Photograph 5.** View of Ephemeral Drain 3a taken facing west. The constructed drain conveys water from the Airport Facilities to the west and away from the hangers. The constructed drain is well vegetated with slender wheatgrass. Observation Point 30 was evaluated within the drain near the vehicles in the background off the photograph.



**Photograph 6.** View of the edge of Wetland 3b. Wetland 3b appears to be a naturally-occurring wetland that has been partially drained by the Airport's storm water system. Water flows west from the wetland area to a large culvert and then south under the runway and away from the Airport.



**Photograph 7.** View of culvert that flows storm water south under the runway and into Ephemeral Drain 5a. Photograph taken facing south. Ephemeral Drain 5a conveys water south and under 61<sup>st</sup> Street. Observation Point 32 was evaluated near the culvert location.



**Photograph 8.** View of Ephemeral Drain 5a taken facing south. The Airport's storm water removal system conveys water into this constructed drain. Upland vegetation was prevalent throughout the drain.





**Photograph 9. View of Wetland 5b and Ephemeral Drain 5a (background). Photograph taken facing north. Wetland 5b is located at the southern end of Ephemeral Drain 5a and 61<sup>st</sup> Street. Reed canary grass is prevalent in the wetland.**



**Photograph 10. View of Wetland 4, taken facing west. Wetland 4 is a naturally-occurring pothole wetland located to the north of the western end of the runway. It appears isolated as no surface connection to any other aquatic resource was noted. Reed canary grass and curly dock was prevalent in the wetland area.**



**Photograph 11. View of an Ephemeral Swale located across 61<sup>st</sup> Street in Section 33. The swale conveys water to the south and east and flows into a deeper cut and ultimately into the Stanley Reservoir (impoundment of Little Knife River). Only upland vegetation was noted within the swale in the Airport. It appears that hydrophytic vegetation may be present in the swale as it deepens outside of the Airport boundary. Observation Point 36 was evaluated in the area of the photograph.**

***Appendix B***

*Plant List*



### Plant species list within Stanley Municipal Airport Project Area

Genus	Species	Common Name	Wetland Indicator
<i>Bromus</i>	<i>inermis</i>	Smooth brome	UPL
<i>Cirsium</i>	<i>arvense</i>	Canada thistle	FACU
<i>Eleocharis</i>	<i>palustris</i>	Common spikerush	OBL
<i>Elymus</i>	<i>repens</i>	Quackgrass	FACU
<i>Elymus</i>	<i>trachycaulus</i>	Slender wheatgrass	FACU
<i>Hordeum</i>	<i>jubatum</i>	Foxtail barley	FACW
<i>Medicago</i>	<i>sativa</i>	Alfalfa	UPL
<i>Persicaria</i>	<i>amphibia</i>	Water smartweed	OBL
<i>Phalaris</i>	<i>arundinacea</i>	Reed canarygrass	FACW
<i>Poa</i>	<i>pratensis</i>	Kentucky bluegrass	FACU
<i>Rumex</i>	<i>crispus</i>	Curly dock	FAC
<i>Spartina</i>	<i>pectinata</i>	Prairie cordgrass	FACW
<i>Thalspi</i>	<i>arvense</i>	Pennycress	FACU
<i>Typha</i>	<i>angustifolia</i>	Narrowleaf cattail	OBL

OBL = occurs in aquatic resources > 99% of time

FACW = occurs in aquatic resources 67-99% of time

FAC = occurs in aquatic resources 34-66% of time

FACU = occurs in aquatic resources 1-33% of time

UPL = occurs in uplands 99% of time

NI = indicator status not known in this region

***Appendix C***

*USACE Wetland Determination Data Sheets*

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 1  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.299551 Long: -102.398409 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	<b>Is the Sampling Area within a Wetland?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Natural depression wetland. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Spartina pectinata</u>	<u>100</u>	<u>yes</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/1	100					!	
7-16	2.5Y 4/2	94	7.5YR 5/4	6	c	m	sil	

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

<b>Hydric Soil Indicators:</b> (Applicable to all LRRs, unless otherwise noted.)		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<b>(LRR H outside of MLRA 72 &amp; 73)</b>	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>		

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

Remarks: \_\_\_\_\_

**Hydric Soils Present?** Yes  No

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<b>(where not tilled)</b>	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**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: \_\_\_\_\_

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 2  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.299655 Long: -102.398381 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>2</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Poa pratensis</u>	<u>50</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Bromus inermis</u>	<u>40</u>	<u>yes</u>	<u>UPL</u>	
3. <u>Lactuca serriola</u>	<u>10</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100	_____	_____	_____	_____	↓	_____
6-16	2.5Y 4/2	100	_____	_____	_____	_____	↓	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 3  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.300018 Long: -102.399052 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Constructed wetland along storm water removal system. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)  Total Number of Dominant Species Across All Strata: <b>3</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>67</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Hordeum jubatum</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Echinochloa crus-galli</u>	<u>20</u>	<u>yes</u>	<u>FAC</u>	
3. <u>Ambrosia psilostachya</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>	
4. <u>Sonchus arvensis</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>80</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>20</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	96	7.5YR 5/4	6	c	m	!	
7-16	2.5Y 4/2	100					cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:



## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 4  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.300037 Long: -102.398993 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>2</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Poa pratensis</u>	<u>50</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Bromus inermis</u>	<u>50</u>	<u>yes</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>				
Remarks:				

**SOIL**

Sampling Point: 4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100	_____	_____	_____	_____	↓	_____
6-16	2.5Y 4/2	100	_____	_____	_____	_____	↓	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

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

<b>Hydric Soil Indicators:</b> (Applicable to all LRRs, unless otherwise noted.)		<b>Indicators for Problematic Hydric Soils<sup>3</sup>:</b>
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<b>(LRR H outside of MLRA 72 &amp; 73)</b>
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>	

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

Remarks: \_\_\_\_\_

**Hydric Soils Present?** Yes  No

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<b>(where not tilled)</b>	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Thin Muck Surface (C7)	
<input type="checkbox"/> Other (Explain in Remarks)	

**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: \_\_\_\_\_

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 5  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.300672 Long: -102.404435 Datum: NAD 83  
 Soil Map Unit Name: C360B Livona fine sandy loam, 0-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Naturally-occurring wetland that has been partially drained. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Phalaris arundinacea</u>	<u>70</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Poa pratensis</u>	<u>20</u>	<u>no</u>	<u>FACU</u>	
3. <u>Melilotus officinalis</u>	<u>20</u>	<u>no</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>110</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/1	100					!	
5-16	2.5Y 6/1	94	7.5YR 5/4	6	c	m	cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 6  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.300637 Long: -102.404433 Datum: NAD 83  
 Soil Map Unit Name: C360B Livona fine sandy loam, 0-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Poa pratensis</u>	<u>100</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100	_____	_____	_____	_____	↓	_____
8-16	2.5Y 4/2	100	_____	_____	_____	_____	clay	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:



## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 7  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.300120 Long: -102.401974 Datum: NAD 83  
 Soil Map Unit Name: C132B Williams-Zahl loams, 3-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Shallow scrape within Airport storm water system. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>3</b> (A)  Total Number of Dominant Species Across All Strata: <b>3</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Phalaris arundinacea</u>	<u>60</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Typha angustifolia</u>	<u>20</u>	<u>yes</u>	<u>OBL</u>	
3. <u>Hordeum jubatm</u>	<u>20</u>	<u>yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Indicators:</b> _____ 1 – Rapid Test for Hydrophytic Vegetation <b>x</b> 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 7

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/1	100					!	
5-16	2.5Y 5/1	94	7.5YR 5/4	6	c	m	cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**HYDROLOGY**

**Wetland Hydrology Indicators:**

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

Secondary Indicators (2 or more required)

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Surface Water (A1)</li> <li><input type="checkbox"/> High Water Table (A2)</li> <li><input type="checkbox"/> Saturation (A3)</li> <li><input type="checkbox"/> Water Marks (B1)</li> <li><input type="checkbox"/> Sediment Deposits (B2)</li> <li><input type="checkbox"/> Drift Deposits (B3)</li> <li><input type="checkbox"/> Algal Mat or Crust (B4)</li> <li><input type="checkbox"/> Iron Deposits (B5)</li> <li><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</li> <li><input type="checkbox"/> Water-Stained Leaves (B9)</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Salt Crust (B11)</li> <li><input type="checkbox"/> Aquatic Invertebrates (B13)</li> <li><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</li> <li><input type="checkbox"/> Dry Season Water Table (C2)</li> <li><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <b>(where not tilled)</b></li> <li><input type="checkbox"/> Presence of Reduced Iron (C4)</li> <li><input type="checkbox"/> Thin Muck Surface (C7)</li> <li><input type="checkbox"/> Other (Explain in Remarks)</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Surface Soil Cracks (B6)</li> <li><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</li> <li><input type="checkbox"/> Drainage Patterns (B10)</li> <li><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <b>(where tilled)</b></li> <li><input type="checkbox"/> Crayfish Burrows (C8)</li> <li><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</li> <li><input checked="" type="checkbox"/> Geomorphic Position (D2)</li> <li><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</li> <li><input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)</li> </ul> |
|--|--|--|

**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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 8  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.300158 Long: -102.401950 Datum: NAD 83  
 Soil Map Unit Name: C132B Williams-Zahl loams, 3-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>2</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <b><u>Poa pratensis</u></b>	<b><u>40</u></b>	<b><u>yes</u></b>	<b><u>FACU</u></b>	
2. <b><u>Bromus inermis</u></b>	<b><u>60</u></b>	<b><u>yes</u></b>	<b><u>UPL</u></b>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b><u>100</u></b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 8

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	100	_____	_____	_____	_____	↓	_____
7-16	2.5Y 4/2	100	_____	_____	_____	_____	clay	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:



## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 9  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.300036 Long: -102.401181 Datum: NAD 83  
 Soil Map Unit Name: C132B Williams-Zahl loams, 3-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Shallow scrape within Airport storm water system. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>2</b> (A)  Total Number of Dominant Species Across All Strata: <b>2</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Eleocharis palustris</u>	<u>50</u>	<u>yes</u>	<u>OBL</u>	
2. <u>Typha angustifolia</u>	<u>15</u>	<u>no</u>	<u>OBL</u>	
3. <u>Hordeum jubatum</u>	<u>30</u>	<u>yes</u>	<u>FACW</u>	
4. <u>Carex praegracilis</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>105</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>				

Remarks:

**SOIL**

Sampling Point: 9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/1	100					!	
5-16	2.5Y4/2	92	7.5YR 5/4	8	c	m	cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 10  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.300059 Long: -102.401245 Datum: NAD 83  
 Soil Map Unit Name: C360B Livona fine sandy loam, 0-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A) Total Number of Dominant Species Across All Strata: <b>1</b> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      _____ x1 = _____ FACW species      _____ x2 = _____ FAC species      _____ x3 = _____ FACU species      _____ x4 = _____ UPL species      _____ x5 = _____ Column Totals:      _____ (A)      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Poa pratensis</u>	<u>90</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Grindelia squarrosa</u>	<u>10</u>	<u>no</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 2/2	100	_____	_____	_____	_____	↓	_____
6-16	2.5Y 4/2	100	_____	_____	_____	_____	clay	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 11  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.302414 Long: -102.411615 Datum: NAD 83  
 Soil Map Unit Name: C132B Williams-Zahl loams, 3-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Natural pothole wetland. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Phalaris arundinacea</u>	<u>90</u>	<u>yes</u>	<u>FACW</u>	
2. <u>Rumex crispus</u>	<u>10</u>	<u>no</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></b>				

Remarks:



**SOIL**

Sampling Point: 11

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/1	94	7.5YR 5/6	6	c	pl	!	
8-16	2.5Y 4/2	96	7.5YR 5/4	4	c	m	cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

Appears isolated as no surface connection to another aquatic resource or drainage was noted.

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 12  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.302392 Long: -102.411502 Datum: NAD 83  
 Soil Map Unit Name: C132B Williams-Zahl loams, 3-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Poa pratensis</u>	<u>100</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>				

Remarks:

**SOIL**

Sampling Point: 12

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	100	_____	_____	_____	_____	↓	_____
7-16	2.5Y 4/2	100	_____	_____	_____	_____	clay	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 13  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): Concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.298473 Long: -102.407618 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Remarks: <b>Wetland along road ditch. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>1</b> (A) Total Number of Dominant Species Across All Strata: <b>1</b> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <b>100</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b> Total % Cover of:      Multiply by: OBL species      _____ x1 = _____ FACW species      _____ x2 = _____ FAC species      _____ x3 = _____ FACU species      _____ x4 = _____ UPL species      _____ x5 = _____ Column Totals:      _____ (A)      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <b><u>Phalaris arundinacea</u></b>	<b><u>100</u></b>	<b><u>yes</u></b>	<b><u>FACW</u></b>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b><u>100</u></b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 13

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/1	92	7.5YR 5/6	8	c	pl	!	
8-16	2.5Y 4/2	96	7.5YR 5/4	6	c	m	cl	

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:



## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 14  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): convex Slope (%): 2  
 Subregion (LRR): E Lat: 48.298491 Long: -102.407534 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NW1 classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Upland comparison point. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <b><u>Bromus inermis</u></b>	<b>90</b>	<b>yes</b>	<b>FACU</b>	
2. <b><u>Hordeum jubatum</u></b>	<b>10</b>	<b>no</b>	<b>FACW</b>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
% Bare Ground in Herb Stratum <b>0</b>				
<b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>				
Remarks:				

**SOIL**

Sampling Point: 14

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-7	10YR 2/2	100	_____	_____	_____	_____	↓	_____
7-16	10YR 3/2	100	_____	_____	_____	_____	↓	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 30  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): drain Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR): E Lat: 48.301539 Long: -102.403363 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Constructed ephemeral drain. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Elymus trachycaulus</u>	<u>100</u>	<u>yes</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>				

Remarks:

**SOIL**

Sampling Point: 30

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/2	100	_____	_____	_____	_____	↓	_____
5-16	10YR 3/2	100	_____	_____	_____	_____	↓	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 32  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): drain Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): F Lat: 48.301381 Long: -102.407183 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Edge of inlet culvert of the Airport's storm water removal system. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
			= Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <b><u>Bromus inermis</u></b>	<b><u>100</u></b>	<b><u>yes</u></b>	<b><u>FACU</u></b>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b><u>100</u></b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>				

Remarks:



**SOIL**

Sampling Point: 32

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 2/2	100	_____	_____	_____	_____	!	_____
5-16	2.5Y 4/2	100	_____	_____	_____	_____	!	<u>no redoximorphic features</u>
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR I, J)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<b>(LRR H outside of MLRA 72 &amp; 73)</b>
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Very Shallow Dark Surface (TF 12)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)	<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<b>(MLRA 72 &amp; 73 of LRR H)</b>	

**Restrictive Layer (if present):**

Type: \_\_\_\_\_

Depth (Inches): \_\_\_\_\_

Remarks: \_\_\_\_\_

**Hydric Soils Present?** Yes  No

**HYDROLOGY**

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<b>(where tilled)</b>
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)	<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)

**Field Observations:**

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____	

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

Remarks:  
Water is conveyed to this location but flows off through the adjacent culvert and south under the runway.

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 34  
 Investigator(s): GWM & DEV Section, Township, Range: 29-156-91  
 Landform (hillslope, terrace, etc.): drain Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): F Lat: 48.301381 Long: -102.407183 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Constructed drain. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>3</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			= Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Total % Cover of:</td> <td style="text-align: center;">Multiply by:</td> </tr> <tr> <td>OBL species _____</td> <td>x1 = _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 = _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 = _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 = _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 = _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = _____</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species _____	x1 = _____	FACW species _____	x2 = _____	FAC species _____	x3 = _____	FACU species _____	x4 = _____	UPL species _____	x5 = _____	Column Totals: _____	(A) _____ (B) _____	Prevalence Index = B/A = _____	
Total % Cover of:	Multiply by:																			
OBL species _____	x1 = _____																			
FACW species _____	x2 = _____																			
FAC species _____	x3 = _____																			
FACU species _____	x4 = _____																			
UPL species _____	x5 = _____																			
Column Totals: _____	(A) _____ (B) _____																			
Prevalence Index = B/A = _____																				
<b>Sapling/Shrub Stratum (Plot Size: _____)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
			= Total Cover																	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>																				
1. <u>Poa pratensis</u>	<u>45</u>	<u>yes</u>	<u>FACU</u>																	
2. <u>Thlaspi arvense</u>	<u>35</u>	<u>yes</u>	<u>FACU</u>																	
3. <u>Cirsium arvense</u>	<u>20</u>	<u>yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
			<b>100</b> = Total Cover																	
<b>Woody Vine Stratum (Plot Size: _____)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
			= Total Cover																	
% Bare Ground in Herb Stratum <b>0</b>																				
<b>Hydrophytic Vegetation Indicators:</b> _____ 1 – Rapid Test for Hydrophytic Vegetation _____ 2 - Dominance Test is >50% _____ 3 – Prevalence Index is ≤3.0 <sup>1</sup> _____ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																				
<b>Hydrophytic Vegetation Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				
Remarks:																				

**SOIL**

Sampling Point: 34

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-8	10YR 2/2	100	_____	_____	_____	_____	!	_____
8-16	2.5Y 4/2	100	_____	_____	_____	_____	cl	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

Water is conveyed to this location but flows south within the constructed drain.

## WETLAND DETERMINATION DATA FORM – Great Plains Region

Project Site: Stanley Municipal Airport City/County: Stanley / Mountrail Sampling Date: 9/24/2020  
 Applicant/Owner: Mead & Hunt State: ND Sampling Point: 36  
 Investigator(s): GWM & DEV Section, Township, Range: 33-156-91  
 Landform (hillslope, terrace, etc.): swale Local relief (concave, convex, none): concave Slope (%): 2  
 Subregion (LRR): E Lat: 48.297893 Long: -102.395526 Datum: NAD 83  
 Soil Map Unit Name: C800A Appam sandy loam, 2-6% slopes NWI classification: na  
 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampling Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Remarks: <b>Ephemeral swale that conveys water indirectly to the Stanley Reservoir. Dry conditions at time of the delineation.</b>			

### VEGETATION – Use scientific names of plants

Tree Stratum (Plot Size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A)  Total Number of Dominant Species Across All Strata: <b>1</b> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <b>0</b> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			= Total Cover	<b>Prevalence Index worksheet:</b>  Total % Cover of:                      Multiply by: OBL species                      _____ x1 = _____ FACW species                      _____ x2 = _____ FAC species                      _____ x3 = _____ FACU species                      _____ x4 = _____ UPL species                      _____ x5 = _____ Column Totals:                      _____ (A)                      _____ (B) Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum (Plot Size: <u>15'</u>)</b>				
1. <u>Symphoricarpos occidentalis</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
			<u>5</u> = Total Cover	
<b>Herb Stratum (Plot Size: <u>5'</u>)</b>				
1. <u>Bromus inermis</u>	<u>95</u>	<u>yes</u>	<u>FACU</u>	
2. <u>Cirsium arvense</u>	<u>5</u>	<u>no</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
			<b>100</b> = Total Cover	
<b>Woody Vine Stratum (Plot Size: _____)</b>				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
			= Total Cover	
<b>% Bare Ground in Herb Stratum <u>0</u></b>				
<b>Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></b>				

Remarks:

**SOIL**

Sampling Point: 36

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (Moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-10	10YR 2/2	100	_____	_____	_____	_____	↓	_____
10-17	2.5Y 4/3	100	_____	_____	_____	_____	cs	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____

<sup>1</sup>Type: C= Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. <sup>2</sup>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)
- Stratified Layers (A5) (LRR F)
- 1 cm Muck (A9) (LRR F, G, H)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 2.5 CM Mucky Peat or Peat (S2)(LRR G, H)
- 5 cm Mucky Peat or Peat (S3) (LRR F)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- High Plains Depressions (F16)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 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 (TF 12)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if present):**

Type: \_\_\_\_\_  
Depth (Inches): \_\_\_\_\_

**Hydric Soils Present?** Yes  No

Remarks:

**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)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Salt Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry Season Water Table (C2)
- Oxidized Rhizospheres along Living Roots (C3) **(where not tilled)**
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres along 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 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:

***Appendix D***

*Project Area Permission Sheet*



Property Access Authorization:

Primary Contact:

JEN BOEHM, PE, LEED AP BD+C

CIVIL ENGINEER, AVIATION

Mead & Hunt

Direct: 701-566-6449 | Cell: 303-704-0726 |

Arrange/schedule any site access with Ms Boehm. Escorting may be required and needs to be coordinated with Ms. Boehm and the Airport.

***Appendix E***

*Aquatic Resources Excel Sheet*

