
Certificate of Corridor Compatibility Application

Prepared for
Caliber Midstream Partners L.P.

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Acronyms and Abbreviations

bbl/d	barrels per day
FERC	Federal Energy Regulatory Commission
IF	isolated find
MAOP	maximum allowable operating pressure
NGL	natural gas pipeline
NRHP	National Register of Historic Places
NWP	Nationwide Permit Program
psig	pounds per square inch gauge
ROW	Right-of-way
SWPPP	Stormwater Pollution Prevention Plan

Description of Proposed Facility

1.1 Introduction

Caliber Midstream Partners, L.P. (Caliber) submits this Certificate of Corridor Compatibility Application to the North Dakota Public Service Commission (PSC or Commission) for an approximately 4.4-mile-long, 6-inch-diameter natural gas liquids (NGL) pipeline (the Project). The Project is located in McKenzie County, North Dakota, approximately 7 miles southeast of the town of Alexander. A map of the Project location is included in Appendix A. The Project will transport NGL from the Hay Butte Gas Plant (Hay Butte Plant or the Plant) to the ONEOK Partners' Bakken NGL Pipeline.

In accordance with Chapter 49-22 of the North Dakota Century Code, Section 69-06-08-02 of the North Dakota Administrative Code, and the Commission's Energy Conversion and Transmission Facility Siting Guidelines, Caliber submits the following application for a Certificate of Corridor Compatibility for the Project.

Caliber is an independent energy infrastructure company that provides a full suite of midstream services to producers in the Bakken and Three Forks shale oil plays. Caliber's services include crude oil and natural gas gathering, transportation, treating, and processing; produced water transportation and disposal; and freshwater sourcing and transportation by pipeline linked to various points of supply. Caliber's assets are located in McKenzie and Williams Counties, North Dakota.

1.2 Type of Facility

The Project consists of a 4.4-mile, 6-inch-diameter NGL pipeline. The Project enables the transportation of NGL produced in northwestern North Dakota to markets via the ONEOK NGL transmission pipeline. The Project provides needed capacity to transport increased production of NGL from the Bakken and Three Forks formations.

The Project has been installed but is not operational. There are four additional pipelines (e.g., gathering and water pipelines) located within the same 100-foot right-of-way (ROW) as the Project. All five pipelines were constructed within one ROW because Caliber has agreements with the seven private landowners affected by the Project that required Caliber to install all pipelines simultaneously within one ROW. A complete list of landowners is included as Appendix B.

Each of the five pipelines was installed at a depth and spacing that is consistent with industry standards. The first pipelines to be installed were gathering and water pipelines, which are specifically excluded from PSC jurisdiction by Chapter 49-22 of the North Dakota Century Code. Construction of the non-jurisdictional pipelines began in the summer of 2013. During the construction process, Caliber made the decision to install, within the same ROW, a pipeline capable of transporting NGL in the event the market would support the Project in the future. The Project was installed during the same construction time period so that it would not impact agricultural activities beginning in the spring of 2014.

The total cost to construct the Project was \$1,862,451.

1.3 Product Description

The Hay Butte Plant processes raw natural gas produced from the Bakken and Three Forks formations. The Plant's current capacity to produce NGL is 1,200 barrels per day (bbl/d). Future expansion of the Plant has the potential to increase capacity to a nominal 2,100 bbl/d.

1.4 Facility Size and Design

The NGL pipeline is approximately 4.4 miles long and 6 inches in diameter. It has a nominal thickness of 0.250 inches in wall thickness. The maximum allowable operating pressure (MAOP) is 1,750 pounds per square inch gauge (psig). The maximum design flow rate is a nominal 2,100 bbl/d. It is buried at a depth of 46 inches, consistent with industry standards.

During construction, the width of the Project ROW was 100 feet, consisting of a 40-foot temporary workspace and a 60-foot permanent easement. The temporary workspace was used as an access road along the length of the pipeline and to store materials.

The Project alignment is parallel and adjacent to County roads, which were used to access the ROW during construction. The Project was constructed parallel and adjacent to County roads to minimize the need for new access roads that would result in additional impacts. Ten temporary two-track access roads were used to transport vehicles and equipment from the County roads to the ROW. Impacts from the two-track roads occurred on agricultural land that will be restored to pre-construction following Project construction.

The only surface structures associated with the Project are valves and pig launchers and receivers. These structures are located at the tie-in to Caliber's Hay Butte Plant and at the tie-in to the ONEOK pipeline, approximately 4.4 miles apart. The ONEOK pipeline has an existing metering valve at the same location on ONEOK's ROW. The NGL pipeline underwent hydrostatic testing and is currently blind flanged at both ends.

1.5 Time Schedule

Caliber proposes to develop the Project on the following time schedule:

- The NGL pipeline was constructed from November 2013 to April 2014, and will be available for service in September 2014 pending PSC approval.
- The Certificate of Corridor Compatibility is expected to be issued in September 2014.
- The Route Permit is expected to be issued in September 2014.

Studies

2.1 Introduction

Caliber contracted CH2M HILL to conduct studies for the following resources within the Project area: wetlands and waterbodies, existing plant species, sensitive biological habitat, raptors and raptor nests, sensitive species, and cultural resources. A brief summary of each study is provided below, and full reports are included as Appendices C, D, and E to this application. The studies cited in this section were conducted following the construction of the Project. However, CH2M HILL scientists did conduct preliminary surveys of the Project area prior to construction. These studies were not submitted to the Commission because, at the time, they were not associated with a jurisdictional project.

2.2 Wetlands and Waterbodies

CH2M HILL contracted Hemlock Environmental Consulting, LLC (Hemlock) to conduct wetland, waterbody, and existing vegetation surveys within the Project area. Vegetation within the Project area is predominantly agricultural, consisting of active and fallow row-crop fields and pastures. Two drainages within the National Hydrography Database were crossed by the Project, Antelope Creek and one of its unnamed tributaries. Two potentially jurisdictional wetlands located along these two drainages were found within the Project area and 200-foot survey corridor. These wetland areas were determined to be potentially jurisdictional, based on the presence of hydrophytic vegetation, hydric soil indicators, wetland hydrology, and a direct connection to downstream Navigable Waters of the U.S. During construction of the Project, one wetland location (Antelope Creek) was bored to avoid impacts completely. Open-cut construction within the other wetland location (an unnamed tributary) resulted in approximately 0.15 acre of wetland impact. This impacts is consistent with coverage under the Nationwide Permit Program (NWP) of the Clean Water Act, specifically Nationwide Permit 12 – Utility Line Activities. Grading and rehabilitation of the impacted wetland were designed to adhere to the general conditions of the NWP, including returning the area to preconstruction contours and maintaining flows. The complete report prepared by Hemlock is included as Appendix C to this application.

2.3 Habitat, Raptors, and Sensitive Species

CH2M HILL contracted Sunbird Biological Consultants (Sunbird) to conduct an on-site habitat assessment, raptor nest survey, and sensitive species review of the Project area. Vegetation within the Project area is predominantly agricultural with active and inactive fields. No active raptor nests were found within the 1-mile-wide study area. The potential for sensitive species to occur within the Project area was assessed by obtaining a list of sensitive species from the U.S. Fish and Wildlife Service and North Dakota Game and Fish Department. Based on species habitat requirements and distributions, it is unlikely that federally listed threatened or endangered species would regularly occur within the Project area. No sensitive species were observed during field surveys. The complete report prepared by Sunbird is included as Appendix D to this application.

2.4 Cultural Resources

CH2M HILL contracted Alpine Archaeological Consultants, Inc. (Alpine) to conduct Class I and Class III Cultural Resource Inventories for the Project. The Class III inventory was conducted within a study corridor with a total width of 100 feet, centered on the Project centerline. The inventory resulted in the identification of one prehistoric isolated find (IF). The IF was likely impacted by the construction of the Project. However, because IFs are invariably unaffiliated with events, people, or construction of significance, and lack research potential, they are viewed as insignificant cultural resources and considered not eligible for listing in the National Register of Historic Places (NRHP). Alpine recommends that the IF is not eligible for inclusion in the

NRHP. No other known cultural or historic resources are located within the Project ROW or 1-mile-wide corridor. Alpine has submitted their findings to the North Dakota State Historic Preservation Office. An amended version of the Cultural Resources Report prepared by Alpine is included as Appendix E to this application. Due to confidential information contained in the report, the complete report is available upon request.

Purpose and Need

3.1 Facility Need

The Project enables the transportation of NGL, produced in northwestern North Dakota, to markets via the ONEOK NGL transmission pipeline. The Project provides needed capacity to transport increased production of NGL from the Bakken and Three Forks formations.

The U.S. Energy Information Agency reported in March 2014 that total natural gas production in North Dakota has grown at a rate that has outpaced the state's available pipeline and processing infrastructure. This has resulted in large quantities of non-marketed natural gas (an average of 0.31 billion cubic feet per day), the majority of which is burned-off into the atmosphere.¹

In conjunction with the increased natural gas production in North Dakota, the large volumes of NGL require increased NGL transportation and processing infrastructure. The Brookings Institution Energy Security Initiative Natural Gas Task Force conducted an analysis of the NGL market and concluded in their March 2013 report that NGL infrastructure has been unable to keep pace with the increase in supply.² According to the Interstate Natural Gas Association of America, approximately \$7.8 billion will need to be invested in new NGL pipelines by 2016 in order to meet the expected capacity need.³

The Project will enable NGL produced in the vicinity to be transported to the ONEOK NGL transmission pipeline, part of one of the largest NGL gathering systems in America. Once the NGL is transported by the Project to the ONEOK system, it can be fractionated, treated, or stored for use by petrochemical facilities or other end users.

3.2 Alternatives Analysis

Caliber analyzed various alternative tie-in locations and corridors for the Project. However, these options would involve constructing the NGL pipeline within a new ROW. By constructing the Project within the existing corridor containing four other pipelines (including gathering and produced water pipelines), Caliber was able to minimize environmental impacts and impacts to private agriculturally productive land. Any alternative outside of the existing corridor would result in additional land disturbance and potential impacts to wetlands and other sensitive areas. Caliber gave special consideration to the needs of private landowners affected by the Project. The Project was constructed during the winter and, where possible, along property lines so that agricultural production was not disrupted.

The tie-in point with the ONEOK pipeline was chosen because there are existing valves and meter at this location. An alternative tie-in point would require construction of new above-ground structures, such as valves, that would result in additional environmental impacts and potentially disrupt future agricultural production. The new pipeline would also not be pigable without the installation of new launcher and receiver structures.

Ultimately, by co-locating the Project with other pipelines within an existing ROW, many potential impacts were avoided or minimized. The Project is able to utilize existing valves and other above-ground facilities for operation and maintenance. For these reasons, all other alternatives were eliminated from consideration.

¹ Energy Information Administration, 2014. *Nonmarketed Natural Gas in North Dakota Still Rising Due to Higher Total Production*. <http://www.eia.gov/todayinenergy/detail.cfm?id=15511>.

² Brookings Institution Energy Security Initiative Natural Gas Task Force, 2013. Natural Gas Briefing Document #1: *Natural Gas Liquids*.

³ Argus Media, 2012. NGL Shale Gas Special Report: *A Feast of NGL Riches From Shale*.

3.3 Compatibility with 10-Year Plan

The Project is compatible with Caliber's current 10-year plan.

Location

4.1 Study Area

The Project study area is located in rural McKenzie County, North Dakota, approximately 7 miles southeast of the town of Alexander. Section 69-06-05-02 of the North Dakota Administrative Code requires that the study corridor width for a transmission facility be at least 10 percent of the facility length, but no less than 1 mile. For this reason, the study corridor for the Project is 1 mile wide.

4.2 Location Map

A location map is provided in Appendix A of this application. Maps showing corridor evaluation criteria are included in the Route Permit Application portion of this joint application.

4.3 Evaluation Criteria and Relative Value

An evaluation of the proposed site or corridor with regard to the applicable consideration set out in Section 49-22-09 and the criteria established pursuant to Section 49-22-05.1 is included in Sections 2.3 and 2.4 of the Route Permit Application portion of this joint application.

4.4 Mitigation Measures

Caliber employed the following mitigation measures during the planning, design, and construction of the Project:

- The Project ROW was designed to minimize land disturbance and appease landowner concerns over agricultural productivity. The Project ROW consists mainly of agricultural or open lands. Areas of sensitive vegetation, wetlands, and forested areas were avoided.
- Where feasible, wetlands and other sensitive areas were protected by a minimum 50-foot buffer or were avoided by boring underneath.
- Sediment control devices were installed per the Project Stormwater Pollution Prevention Plan (SWPPP).
- Guidelines set forth in the Federal Energy Regulatory Commission (FERC) Upland Erosion Control, Revegetation, and Maintenance Plan (May 2013) were followed where applicable.
- Topsoil along the ROW was segregated, stored, and replaced to actual depth.
- All One Call and utility line identification activities were conducted prior to Project construction.
- Spill prevention, response, and mitigation procedures during construction activities were followed as described in the U.S. Department of Transportation-mandated Caliber Midstream Pipeline Spill Response Plan.

A further discussion of mitigation measures is set forth in Section 2.4 of the Route Permit Application, submitted along with this Corridor Compatibility Application. Mitigation measures are discussed as they relate to each of the Commission's exclusion and avoidance areas, selection criteria, and policy criteria, as applicable.

4.5 Qualifications

The following individuals contributed to the corridor location study:

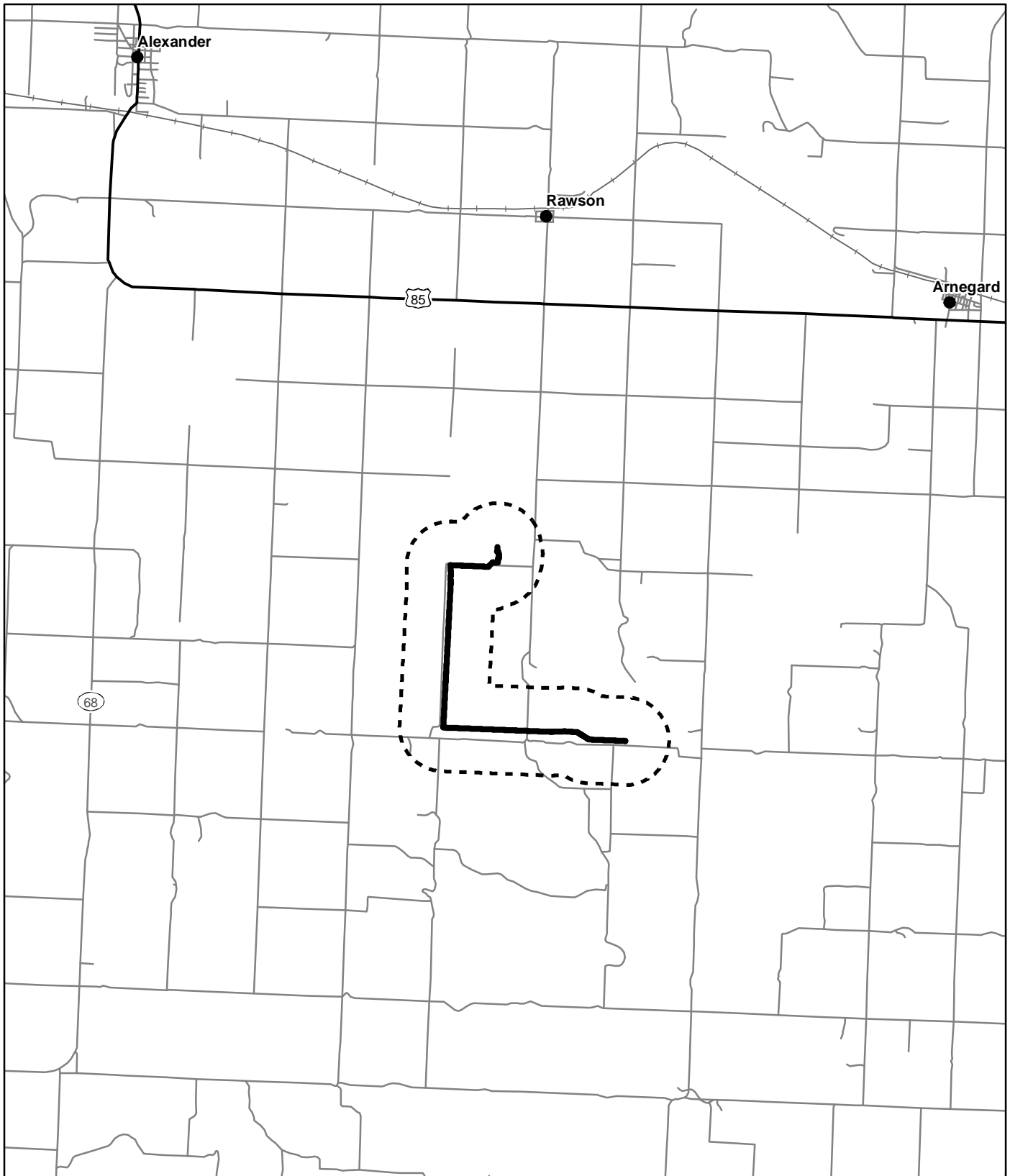
- David Scobel – Mr. Scobel has more than 15 years of experience in the oil and gas industry, including extensive work in gas gathering and processing from the business development, project design, cost, and construction management perspectives.
 - Company: Caliber
 - Role: Chief Operating Officer
 - Education: Bachelor of Science, Chemical and Petroleum Refining Engineering, Colorado School of Mines
- Ryan Stone – Mr. Stone is responsible for facilities and pipeline engineering, construction, operations, AFE preparation and budget planning. Prior to joining Caliber, Mr. Stone was a Project and Operations Engineer for Meritage Midstream Services, where he focused on engineering, construction, commissioning, and operations of the Eagle Ford Escondido and Cuervo Creek Gathering Systems, consisting of more than 185 miles of new gathering pipelines with multiple facilities and interconnects.
 - Company: Caliber
 - Role: Project Manager
 - Education: Bachelor of Science, Mechanical Engineering, Colorado School of Mines
- Katy Reagan - Ms. Reagan has developed a diverse technical and regulatory background through more than 12 years of experience executing and managing environmental projects. She has experience in various survey techniques for analyzing and monitoring natural resources. Ms. Reagan has experience in preparation of biological resource reports and other environmental documents in accordance with state and federal regulations.
 - Company: formerly CH2M HILL (at time of study); currently Sunbird Biological Consultants
 - Role: wetland/waterbody delineations, habitat surveys, raptor nest surveys
 - Education: Master of Science, Natural Resources Management; Bachelor of Science, Wildlife Biology
 - Professional Accreditation: Certified Wildlife Biologist
- Doug Anderson – Mr. Anderson is an environmental planner with experience in natural resources management, land use planning, environmental regulatory strategy, and permitting. His project experience has primarily focused on the siting and licensing/permitting of large-scale energy facilities and infrastructure such as natural gas pipelines, power plants, and renewable energy facilities.
 - Company: CH2M HILL
 - Role: constraints analysis
 - Education: Master of City and Regional Planning
- Jerry Fiore – Mr. Fiore has more than 26 years of civil and environmental engineering experience, specializing in environmental permitting strategies, air quality permitting, and environmental compliance. He has served in engineering positions in both consulting and private industry. Mr. Fiore has acted as project manager on many environmental projects, including FERC and National Environmental Policy Act compliance, environmental and county permitting, air quality permitting, and due diligence audits.
 - Company: CH2M HILL
 - Role: environmental consultant Project Manager
 - Education: Bachelor of Science, Civil Engineering, Ohio State University
- Jack Pfertsh – Mr. Pfertsh is a registered Professional Archaeologist with 23 years of experience on archaeological excavation and cultural resource survey projects primarily carried out in Colorado, New Mexico, North Dakota, Wyoming, and Utah. He is knowledgeable about current state and federal regulations governing field conduct and recordation of cultural resources. Mr. Pfertsh’s responsibilities include quality control, office and field supervision, data analysis, and report preparation.

- Company: Alpine Archaeological Consultants
- Role: cultural resources surveys
- Education: Master of Art, Archaeology and Heritage; Bachelor of Art, Anthropology

4.6 Maps

A DVD containing all ESRI ArcGIS shapefiles is included as part of this application for Commission staff review. Project maps are included in the Route Permit Application.

Appendix A – Location Map



LEGEND
 — Proposed NGL Route
 - - - 1-mile Study Corridor

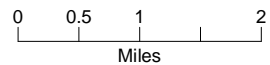


Figure 1
Project Location Map
Caliber Midstream
Mckenzie County, ND

Appendix B – Landowner Information

Appendix B – Landowner Table

Landowner Name
Irene A. Gullickson
William D. Bell
Robert Taylor, Jr. WM T. and Patricia Taylor
Shawn T. Dwyer
Margaret H. McCoy Trust
R&A Pedersen Holdings, LLP
Mitchel Larson, et. al.

Appendix C – Wetland Delineation Report

**Waters of the U.S Delineation Report
Caliber Midstream Natural Gas Pipeline**

McKenzie County, North Dakota

Prepared for
Caliber Midstream

Prepared by



July 2014

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Figures

Figure 1 – Project Location

Figure 2 – Wetland 01

Figure 3 – Wetland 02

Attachments

Attachment A – Photo Log

Attachment B - Wetland Delineation Forms

Attachment C – Construction and Environmental Disturbance Requirements

1.0 Executive Summary

A post-construction assessment of jurisdictional waters of the U.S. along Caliber Midstream's (Caliber) natural gas liquids (NGL) pipeline in McKenzie County, North Dakota was performed. A survey was completed for the entire pipeline corridor of approximately 4.4 miles (Project area, **Figure 1**). Vegetation within the Project area is predominantly agricultural, consisting of active and fallow row-crop fields and pastures. Two potentially jurisdictional wetlands were located. During construction of the pipeline, one of these locations (Antelope Creek) was bored, the other (an unnamed tributary) was not. Wetland impacts were avoided by the bore beneath Antelope Creek. Approximately 0.15 acres of wetland were impacted at the unnamed tributary as this location was open-cut. These impacts are consistent with coverage under the Nationwide Permit Program (NWP) of the Clean Water Act, specifically Nationwide Permit 12 – Utility Line Activities (NWP 12). Grading and rehabilitation of the impacted wetland should be designed to adhere to the General Conditions of the NWP Program including, specifically returning the area to preconstruction contours and maintaining flows.

2.0 Project Description

Caliber has installed approximately 4.4 miles of natural gas liquids (NGL) pipeline in McKenzie County, North Dakota (**Figure 1**). The NGL pipeline starts approximately 7 miles southeast of the town of Alexander, runs west then south along 139th Avenue NW, and then east along 22nd Street NW to an interconnection point with the ONEOK pipeline. Elevation in the Project area is approximately 2,400 feet above sea level. The pipeline crosses privately-owned agricultural fields. Many drilling and completed oil and gas wells and production facilities are located in the immediate area.

3.0 Methods

Natural resource information was obtained from Geographic Information System (GIS) databases. The location of the NGL line was overlain onto U.S. Geological Survey (USGS) topographic maps, county soil survey data, National Wetlands Inventory (NWI) data (Cowardin et al. 1979), National Hydrography Dataset (NHD), and aerial photography. Soils data were obtained from the Natural Resource Conservation Service (NRCS 2014).

A pedestrian survey for waters of the U.S. was performed June 24, 2014. Wetlands were identified and delineated using the most recent guidance from the U.S. Army Corps of Engineers (USACE), the 1987 Wetlands Delineation Manual (USACE 1987), and subsequent Regional Supplement Manual for the Great Plains (USACE 2010). Weather records report a 0.12-inch rain event within the previous 24 hours, and no rain events during the 10 days previous to that. Conditions during the survey ranged from overcast and light rain in the morning to partly cloudy and dry in the afternoon with temperatures in the mid-60s. Sample points were established in both wetland and upland areas. Sampling points were generally taken in valley-bottom areas and locations typical of concentrated flow regimes. Representative soil samples from each location were examined for the presence of hydric soil indicators. Soil profiles were recorded with the use of a Munsell® soil color chart.

Plant species at each sample location were identified and percent areal coverage of each species was estimated. Dominant species were determined using the 50/20 rule as calculated by established methods. The wetland indicator status of each species was recorded according the USACE 2013 National Wetland Plant List (Lichvar, 2013). A determination of hydrophytic vegetation status was made using both the dominance test and prevalence index. Vegetation was also used to determine a secondary hydrology indicator through the facultative (FAC)-neutral test. The presence of wetland hydrology was determined by evaluating site conditions with criteria established in the applicable USACE regional supplement. Based the presence of hydrophytic vegetation, hydric soils, and wetland hydrology, wetland boundaries were delineated in the field using a sub-meter-accurate Trimble GeoXH GPS unit.

4.0 Results

The Project area is located within the northwestern Great Plains ecoregion, which is characterized by semiarid rolling plains and occasional buttes and badlands (USGS 2013). Native grasslands have been largely replaced by spring wheat and alfalfa over most of the ecoregion (USGS 2013). Based on aerial photographs and field observation, the Project area is used primarily for agricultural purposes. The field visit verified that the Project area and surrounding landscape consist of active and fallow agricultural fields and a minor extent of rangeland. Agricultural habitats in the Project area include wheat and hay fields. **Attachment B** provides photographs of the Project area within the agricultural setting.

Two different soil types were encountered as part of the wetland investigation. These series and complexes are the Savage silty clay loam, 6 to 9 percent slopes and the Cabba-Chama-Havrelon silt loams, 3 to 70 percent slopes. These series typically are very deep (Savage, Chama, and Haverlon) to shallow (Cabba) well-drained, exhibiting slow to moderately slow permeability (NRCS 2014).

There are no National Wetland Inventory (NWI) features mapped along the NGL line (**Figure 1**). Two drainages within the National Hydrography Database (NHD) were crossed, Antelope Creek and one of its unnamed tributaries. Antelope Creek flows west/northwest to its confluence with Charbonneau Creek, which in turn confluences with the Yellowstone River approximately 20 miles west of the Project area. Because of the direct hydrologic connection with a Traditional Navigable Water (Yellowstone River), these wetlands are likely considered jurisdictional. Impacts to these wetlands are therefore regulated and permitted under the Clean Water Act.

Attachment B provides Wetland Determination Data Forms for the wetlands and non-jurisdictional upland areas. A third area was suspected of wetland characteristics, but further investigation yielded upland conditions. No non-wetland waters of the U.S. were located.

Wetland WL-01

Wetland WL-01 is an emergent, occasionally/seasonally flooded (PEMA/C), shallow wetland along the main channel of Antelope Creek. Wetland 01 is located immediately east of 139th Avenue NW and receives direct surface water input from up-valley flows contributing to the Antelope Creek watershed (**Figure 2**). The wetland is confined to the steep banks on the north and south sides of the creek. Land use adjacent to this feature is dominated by active upland wheat fields. Photo Point 5 in **Attachment A** presents photos of the wetland and surrounding uplands.

This wetland was dominated by reed canary grass (*Phalaris arundinacea*) with lesser amounts of Baltic rush (*Juncus balticus*), and horsetail (*Equisetum laevigatum*). Evidence of wetland hydrology included pockets of surface water, saturation, hydrogen sulfide odor, and oxidized rhizospheres. Hydric soil indicators are a depleted matrix below a dark surface layer.

Wetland WL-02

Wetland WL-02 is an emergent, occasionally/seasonally flooded (PEMA/C), shallow wetland along an unnamed tributary to Antelope Creek. Wetland 02 is located immediately north of 22nd Avenue NW and captures surface and likely groundwater flows from a relatively small area (**Figure 3**). The wetland is limited to the areas immediately adjacent to the stream channel, with the surrounding land use dominated by active upland wheat fields. It appears the channel has been excavated, presumably to improve drainage. Photo Point 10 in **Attachment A** presents photos of the wetland and surrounding uplands.

This wetland was dominated by smooth brome (*Bromus inermis*) with lesser amounts of stinging nettle (*Urtica dioica*). Because of the dominance of smooth brome, it was determined the site presented problematic vegetation. Hydric vegetation indicators were not supportive of wetland vegetation (e.g., Prevalence Index, Dominance Test). However, it is highly likely, given the soil and hydrology, hydric vegetation would develop following the removal of smooth brome. Therefore, the site was determined to

be a wetland despite the absence of hydric vegetation. Evidence of wetland hydrology included saturation and geomorphic position. Hydric soil indicators are a depleted matrix below a dark surface layer.

Photo Point 7

The area identified as Photo Point 7 in **Attachment A** was investigated for the presence of wetlands. This area was specifically identified for closer inspection as the NHD indicates a drainage feature in this location, the same unnamed drainage that forms Wetland 02 approximately 0.4 miles upstream (**Figure 1**). Multiple soil pits were dug; however, only upland soils were identified. Soils were dry with no hydric soil indicators. Vegetation was upland grass species including smooth brome, crested wheatgrass (*Agropyron cristatum*), Kentucky bluegrass (*Poa pratensis*), and Canada thistle (*Cirsium arvense*). Though there is a drainage indicated on USGS topographic maps, the channel does not exist between the northwestern end of Wetland 02 and Photo Point 7. A corrugated metal pipe culvert at this location is available to convey flows beneath 129th Avenue NW. Surface cracks at the upstream end of the culvert indicate water does pool at the inlet, but soil pits did not reveal hydric soils have developed. No wetlands or other waters of the U.S. were identified at Photo Point 7.

5.0 Discussion

Figure 2 and **Figure 3** show the relationship between the installed pipeline and the two wetlands along its route. The pipeline was bored beneath Wetland 01 and was open-cut through Wetland 02. The bore beneath Wetland 01 began and ended well outside the boundary of the wetland, approximately 90 feet to the north and 180 feet to the south (**Figure 2**). This bore successfully avoided impacts to the wetland.

The open-cut installation through Wetland 02 had direct temporary impacts. Substantial rutting was noted during the survey, though restoration activities were still under way (Photo Point 10, **Attachment A**). Conservatively assuming the wetland spanned the construction limits at the width recorded in the field, it is estimated 0.15 acres of temporary wetland impact occurred.

Section 404 of the Clean Water Act established a program under which the federal government issues permits for impacts to waters of the U.S. The Nationwide Permit (NWP) Program allows for programmatic approval of minor impacts to waters of the U.S. caused by routine activities. Nationwide Permit 12 – Utility Line Activities (NWP 12) applies to projects such as the subject NGL pipeline, provided established thresholds are not exceeded nor certain conditions violated. Conformance with these thresholds and conditions is examined below.

NWP 12 cannot be used if the loss of waters of the U.S. exceeds 0.5 acres. *Loss of Waters of U.S.* is defined as, “Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity.” (USACE 2012a). USACE guidance further refines the definition of loss, “Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States.” (USACE 2012a). Therefore, even without any restoration, project impacts of 0.15 acres are below the threshold of 0.5 acres, and the project qualifies for coverage under NWP 12. With restoration to pre-construction contours, the impacts would be considered temporary, not a loss, and exceedance of the 0.5-acre threshold certainly would not occur.

Some NWPs require the USACE be notified of a project’s intent to seek coverage under certain NWPs. The conditions requiring this Pre-Construction Notification (PCN) for NWP 12 are:

- (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way
- (2) a section 10 permit is required
- (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet
- (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area

- (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States
- (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet
- (7) permanent access roads are constructed in waters of the United States with impervious materials

The Project does not meet any of the seven conditions requiring a PCN with the possible exception of (5); however, as presented previously, with restoration to pre-construction contours, the loss of waters of the U.S. would be minimal, if not reduced to none.

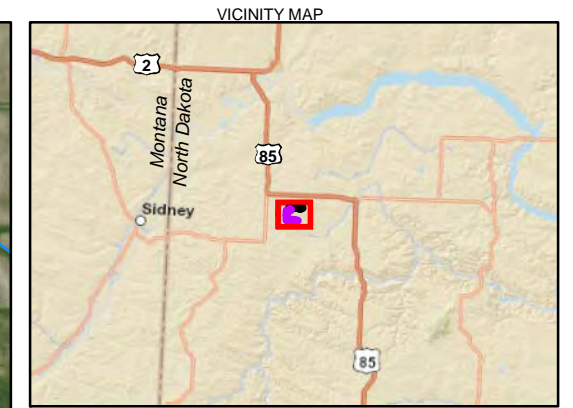
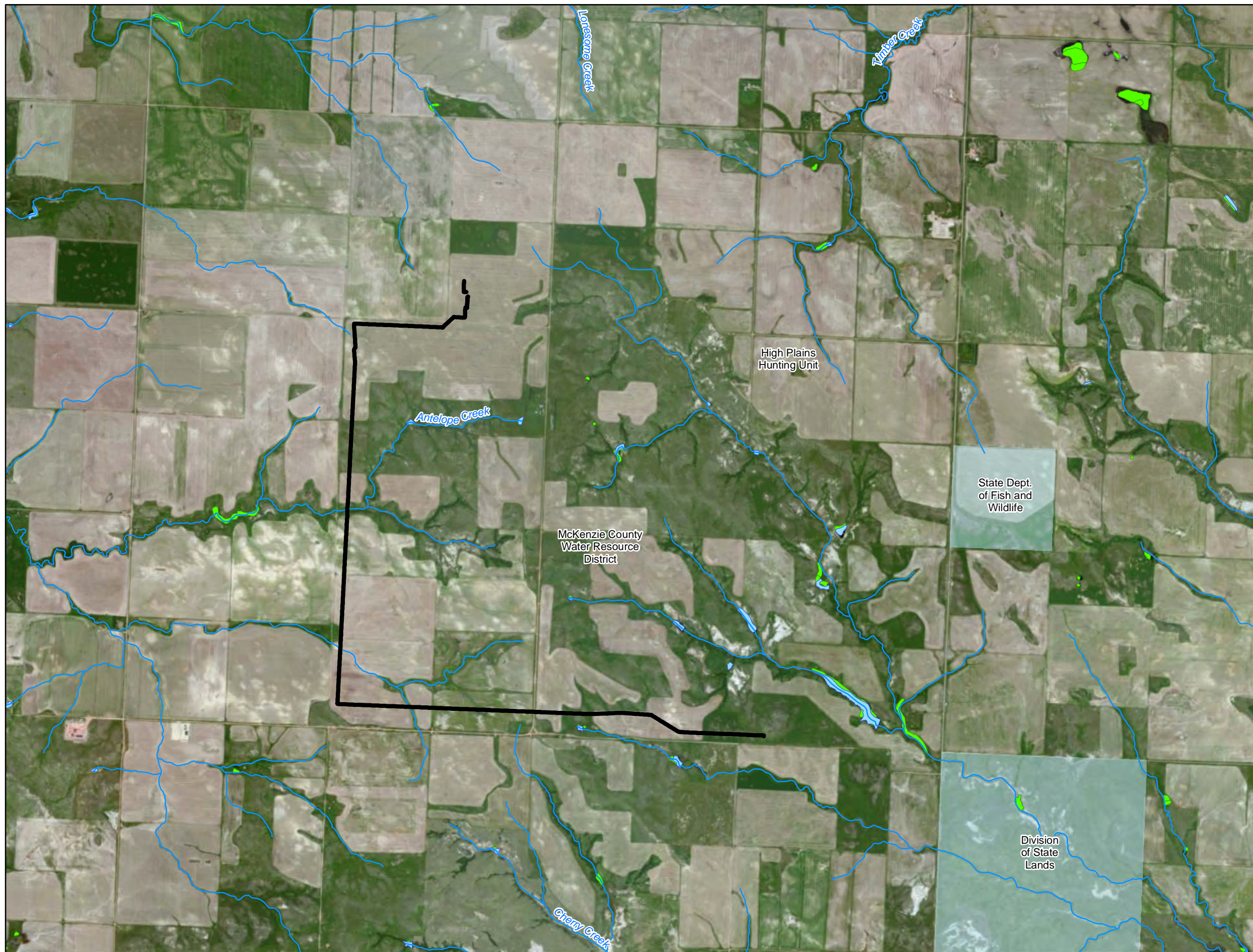
The Omaha District of the USACE has issued Regional Conditions specific to North Dakota (USACE, 2012b). These Regional Conditions must also be met to qualify for coverage under a NWP. The only Regional Conditions relevant to NWP 12 relate to borrow sites, counter-sinking culverts, and intake structures, and are not applicable to the Project.






Section 401 of the Clean Water Act requires that applicants for a federal permit (e.g., a Section 404 NWP) obtain Water Quality Certification (Certification) from the state. This Certification ensures the proposed activity complies with state-level water quality standards. In North Dakota, the Department of Health – Environmental Health Section reviewed the 2012 NWPs. The review found that the NWPs would not violate the Standards of Water Quality of the State, though there are several NWP-specific conditions. With respect to NWP 12, the only additional condition pertains to activities in Class I and Class IA rivers and lakes, and is not applicable to the Project. The review states the Department of Health’s Construction and Environmental Disturbance Requirements shall be attached as a condition to all NWPs. Those requirements are included as **Attachment C**. Review of the requirements finds the Project is in compliance with the state’s requirements; therefore, no additional Certification requirements are necessary. Restoration of the Wetland 02 area should consider establishing vegetative cover and erosion control to ensure continued compliance.

In conclusion, grading and rehabilitation of Wetland 02 should be designed to adhere to the General Conditions of the NWP Program and the state’s 401 Certification requirements. Activities should return the area to preconstruction contours and maintained flows. This includes creation of a channel through the impacted wetland that connects with the channel located in adjacent intact wetlands. Vegetative cover and sediment control measures should be established. With these measures in place, the Project’s impacts would conform to NWP 12, all General and Regional Conditions including Section 401 Certification, and no further permitting action is necessary.

6.0 References

- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service, Washington, D.C. FWS/OBS-79/31.
- U.S. Army Corps of Engineers (USACE). 1987. US Army Corps of Engineers Wetlands Delineation Manual.
- U.S. Army Corps of Engineers (USACE). 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0).
- USACE. 2012a. 2012 Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions (with corrections). Index of Nationwide Permits, Conditions, District Engineer's Decision, Further Information, and Definitions. 46 pages.
- USACE. 2012b. 2012 Nationwide Permits Regional Conditions. Omaha District - State of North Dakota. 4 pages.
- Lichvar, R.W. 2013. The National Wetland Plant List: 2013 wetland ratings. *Phytoneuron* 2013-49: 1-241.
- U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS). 2014. "Official Soil Series Descriptions." Accessed June and July 2014. <https://soilseries.sc.egov.usda.gov/osdname.asp>.
- U.S. Geological Survey (USGS). 2013. Northern Prairie Wildlife Research Center, "Ecoregions of North Dakota and South Dakota." Accessed September 16, 2013. <http://www.npwrc.usgs.gov/resource/habitat/ndsdeco/43a.htm>.



- LEGEND**
-  Proposed NGL Route
 -  NWI Wetland
 -  Stream
 -  Waterbody
- Surface Ownership**
-  State Land

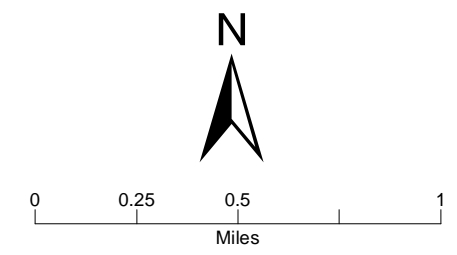
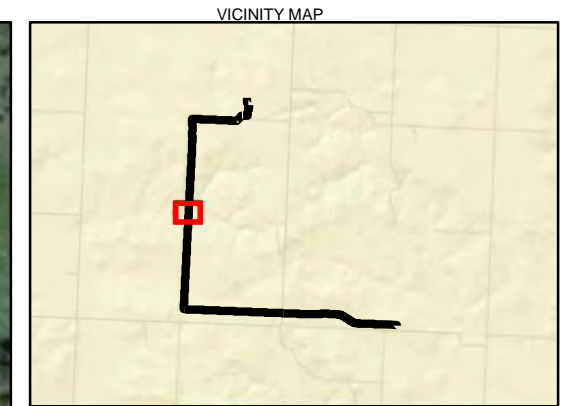





FIGURE 1
Project Location Map
Caliber Midstream
Mckenzie County, ND



- LEGEND**
-  Proposed NGL Route
 -  Data Point
 -  Wetland

Note: Wetland extends east and west beyond the limits of the survey.

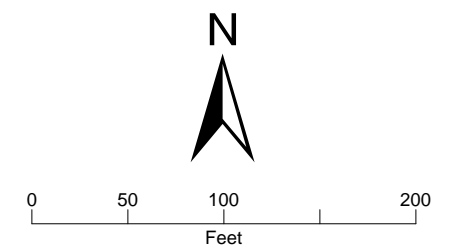
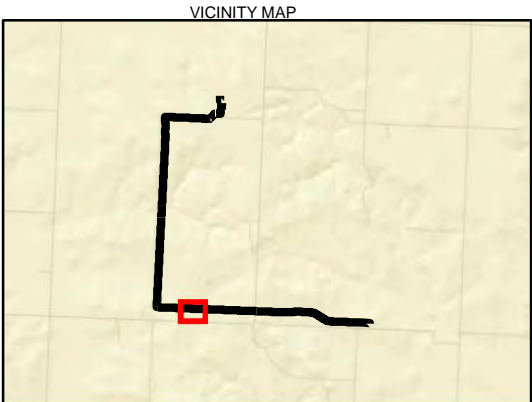


FIGURE 2
Wetland 01
 Caliber Midstream
 Mckenzie County, ND



- LEGEND**
- Proposed NGL Route
 - Data Point
 - Limit of Disturbance
 - Wetland

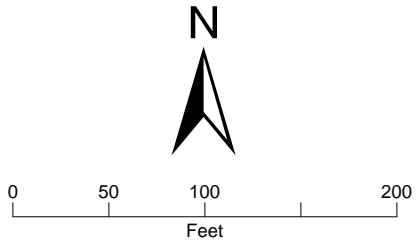
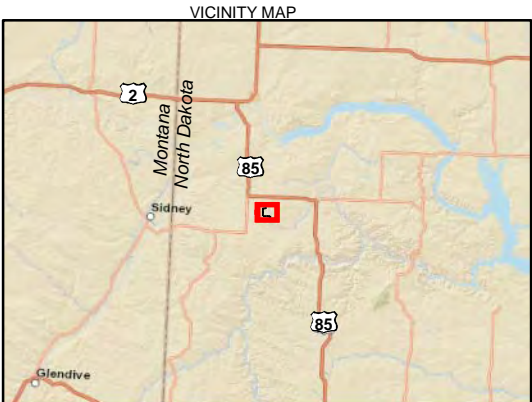
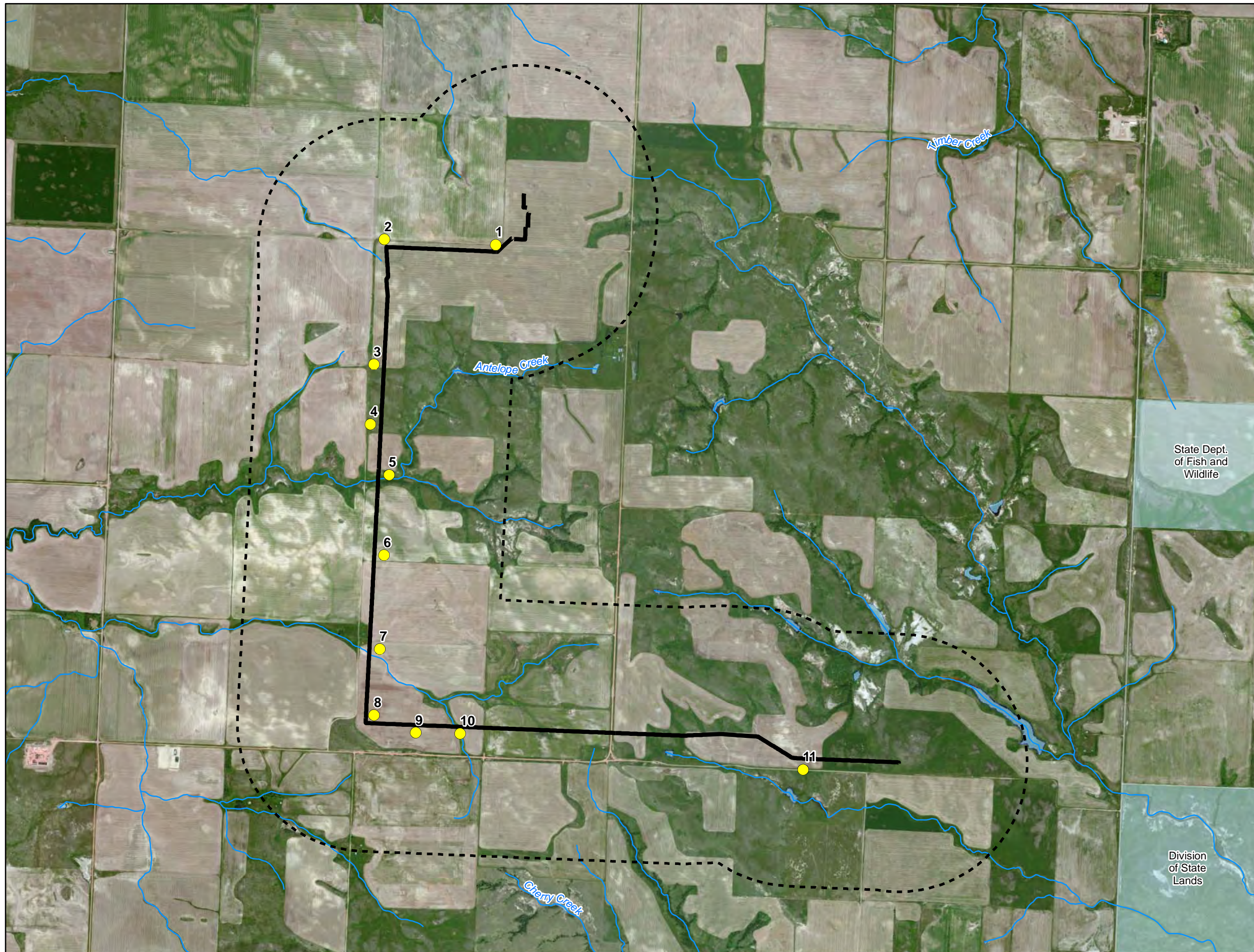


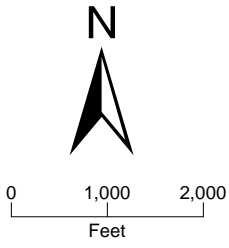
FIGURE 3
Wetland 02
 Caliber Midstream
 Mckenzie County, ND

Attachment A

Photo Log



- LEGEND**
- Proposed NGL Route
 - - - 1-mile Study Corridor
 - Photo Point Location
 - Stream
 - Waterbody
- Surface Ownership**
- State Land



Attachment A
Photo Point Locations
 Caliber Midstream
 Mckenzie County, ND



Photo Point 1 – Looking northeast at main facility



Photo Point 1 – Looking southwest from main facility as pipeline crosses beneath the road to the south side



Photo Point 2 – Facing west where pipeline turns south



Photo Point 2 – Facing south at turn in pipeline



Photo Point 2 – Facing east



Photo Point 3 – Facing north



Photo Point 3 – Facing south



Photo Point 4 – Facing south, Antelope Creek drainage visible in background



Photo Point 5 – Wetland 01, facing east, wetland boundary generally follows toe of slope



Photo Point 5 – Wetland 01 soil pit



Photo Point 5 – Wetland 01, facing west, wetland boundary generally follows toe of slope



Photo Point 5 – Paired upland soil pit at Wetland 01



Photo Point 6 – Facing south to unnamed drainage at Photo Point 7



Photo Point 7 – Typical upland soils found in the area where the drainage used to be



Photo Point 7 – Area of sparse vegetation and surface cracks indicating surface ponding. Culvert under road indicated by circle.



Photo Point 8 – Facing north to Photo Point 7, area of sparse vegetation indicating remnant channel is visible perpendicular to the pipeline



Photo Point 8 – Facing east



Photo Point 9 – Facing northwest at Photo Point 7



Photo Point 9 – Facing northeast at Wetland 02 (Photo Point 10) visible as darker vegetation in middleground



Photo Point 10 – Soil pit at Wetland 02



Photo Point 10 – Facing south towards road



Photo Point 10 – Upland soil pit at Wetland 02



Photo Point 10 – In Wetland 02 facing northeast to where pipeline crossed the wetland



Photo Point 10 – Pipeline crossing location of Wetland 02, note severe rutting indicating saturated soil conditions



Photo Point 11 – Facing west, this section of pipeline has been restored



Photo Point 11 – Facing east, this section of pipeline has been restored

Attachment B
Wetland Determination Data Forms

Wetland Determination Data Form - Great Plains Region

Project/Site: Caliber Midstream - NGL Pipeline City/County: McKenzie Sampling Date: 6/24/2014
 Applicant/Owner: Caliber Midstream State: ND Sampling Point: WL-01
 Investigator(s): M. Kizlinski Section, Township, Range: SW/4 S01, T149W, R101W
 Landform (hillslope, terrace, etc.): _____ Local Relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): Northern Great Plains LRR F Lat. 47° 44' 53.487" Long: 103° 33' 38.465" Datum: WGS 1984
 Soil Map Unit Name: Cabba-Chama-Havreton silt loams, 3 to 70 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30x30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
0 = Total Cover			

Herb Stratum (Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Phalaris arundinacea</i>	90	Y	FACW
2. <i>Juncus balticus</i>	5		FACW
3. <i>Equisetum laevigatum</i>	5		FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
100 = Total Cover			

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
0 = Total Cover			

% Bare Ground in Herb Stratum _____%

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	95	x 2 =	190
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	<u>100</u> (A)		<u>205</u> (B)
Prevalence Index = B/A =			<u>2.1</u>

Hydrophytic Vegetation Indicators:

_____ 1. Rapid Test for Hydrophytic Vegetation
 2. Dominance Test is >50%.
 3. Prevalence Index is ≤3.0¹
 _____ 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? _____ Yes _____ No

Remarks:

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 ¹	Loc ²		
0-4	7.5 YR 3/1	100					Silt Loam	
4-9	7.5 YR 4/1	100					Silt Loam	
9-13	7.5 YR 4/1	60	7.5 YR 2.5/1	40	C	M	Silt Loam	
13-17	10 YR 4/2	100					Silt Loam	water table at 17 inches

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

Hydric Soil Indicators		Indicators for Problematic Hydric Soils ³ :	
<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)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input checked="" 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"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		³ Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)		

Restrictive Layer: (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Field Observations:

Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches)	2	Wetland Hydrology Present?
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches)	17	
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input type="checkbox"/>	Depth (inches)	4	

Remarks:

Surface water observed further into wetland's center near channel. Soil pit recorded at edge of wetland.

Wetland Determination Data Form - Great Plains Region

Project/Site: Caliber Midstream - NGL Pipeline City/County: McKenzie Sampling Date: 6/24/2014
 Applicant/Owner: Caliber Midstream State: ND Sampling Point: WL-01-UP
 Investigator(s): M. Kizlinski Section, Township, Range: SW/4 S01, T149W, R101W
 Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Minor Concave Slope (%): 4
 Subregion (LRR): Northern Great Plains LRR F Lat. 47° 44' 53.674" Long: 103° 33' 38.162" Datum: WGS 1984
 Soil Map Unit Name: Cabba-Chama-Havrelon silt loams, 3 to 70 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
 Paired upland point for WL-01

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30x30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Symphoricarpos occidentalis</i>	20	Y	UPL
2. <i>Rosa arkansana</i>	5	Y	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
25 = Total Cover			

Herb Stratum (Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Bromus inermis</i>	70	Y	UPL
2. <i>Poa pratensis</i>	5		FACU
3. <i>Equisetum laevigatum</i>	5		FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
80 = Total Cover			

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
0 = Total Cover			

% Bare Ground in Herb Stratum _____%

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
 (excluding FAC-): _____

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	10	x 4 =	40
UPL species	90	x 5 =	450
Column Totals:	<u>105</u> (A)		<u>505</u> (B)
Prevalence Index = B/A =			<u>4.8</u>

Hydrophytic Vegetation Indicators:

_____ 1. Rapid Test for Hydrophytic Vegetation
 _____ 2. Dominance Test is >50%.
 _____ 3. Prevalence Index is ≤3.0¹
 _____ 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

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 ¹	Loc ²		
0-5	10YR 3/4	100					Silt Loam	many roots
5-9	7.5 4/2	100					Silt Loam	
9-20	10YR 4/3	100					Silt Loam	many live roots through profile

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

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

Restrictive Layer: *(if observed)*

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Field Observations:

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

Remarks:

Wetland Determination Data Form - Great Plains Region

Project/Site: Caliber Midstream - NGL Pipeline City/County: McKenzie Sampling Date: 6/24/2014
 Applicant/Owner: Caliber Midstream State: ND Sampling Point: WL-02
 Investigator(s): M. Kizlinski Section, Township, Range: SW/4 S12, T149W, R101W
 Landform (hillslope, terrace, etc.): Floodplain Local Relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): Northern Great Plains LRR F Lat. 47° 44' 2.094" Long: 103° 33' 11.612" Datum: WGS 1984
 Soil Map Unit Name: Savage silty clay loam, 6 to 9 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Location is a drainage tributary to Antelope Creek. Surrounding area has been altered by dryland agriculture.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30x30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
0 = Total Cover			

Herb Stratum (Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.	<u>10</u>		<u>FAC</u>
3.	<u>80</u>	<u>Y</u>	<u>UPL</u>
4.			
5.			
6.			
7.			
8.			
9.			
10.			
90 = Total Cover			

Woody Vine Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
0 = Total Cover			

% Bare Ground in Herb Stratum %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
 (excluding FAC-):
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>10</u>	x 3 =	<u>30</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>80</u>	x 5 =	<u>400</u>
Column Totals:	<u>90</u> (A)		<u>430</u> (B)
Prevalence Index = B/A =			<u>4.8</u>

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
 2. Dominance Test is >50%.
 3. Prevalence Index is ≤3.0¹
 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:

Site displays clear wetland soils and hydrology, but vegetation is dominated by exotic upland species (*Bromus inermis*). Vegetation is therefore considered problematic, and hydrophytic species would most likely populate the site following removal of the smooth brome.

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 ¹	Loc ²		
0-3	10YR 3/1	100					Silt Loam	
3-18	10YR 4/2	100					Silt Loam	water table at 18 inches

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

Hydric Soil Indicators		Indicators for Problematic Hydric Soils ³ :	
<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)	<input type="checkbox"/> (LRR H outside of MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input checked="" 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"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LRR G, H)	<input type="checkbox"/> High Plains Depressions (F16)		³ Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic.
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	<input type="checkbox"/> (MLRA 72 & 73 of LRR H)		

Restrictive Layer: (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches)	_____	Wetland Hydrology Present?
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches)	18	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches)	4	

Remarks:

Channel through wetland appears to be excavated to encourage drainage.

Wetland Determination Data Form - Great Plains Region

Project/Site: Caliber Midstream - NGL Pipeline City/County: McKenzie Sampling Date: 6/24/2014
 Applicant/Owner: Caliber Midstream State: ND Sampling Point: WL-02-UP
 Investigator(s): M. Kizlinski Section, Township, Range: SW/4 S12, T149W, R101W
 Landform (hillslope, terrace, etc.): Minor Slope Local Relief (concave, convex, none): None Slope (%): 1
 Subregion (LRR): Northern Great Plains LRR F Lat. 47° 44' 2.109" Long: 103° 33' 12.1342" Datum: WGS 1984
 Soil Map Unit Name: Savage silty clay loam, 6 to 9 percent slopes NWI Classification: UPL

Are climatic/hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
 Paired upland point to W-02. WL-02 is surrounded by cultivated wheat.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30x30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

Sapling/Shrub Stratum (Plot size: <u>15x15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

Herb Stratum (Plot size: <u>5x5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Triticum aestivum</i>	50	Y	NI
2. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
50 = Total Cover			

Woody Vine Stratum (Plot size: <u> </u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0 = Total Cover			

% Bare Ground in Herb Stratum 50 %

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
 (excluding FAC-):

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>0</u>	x 3 =	<u>0</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column Totals:	<u>0</u> (A)		<u>0</u> (B)

Prevalence Index = B/A = #DIV/0!

Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
 2. Dominance Test is >50%.
 3. Prevalence Index is ≤3.0¹
 4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation (Explain)

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

Hydrophytic Vegetation Present? Yes No

Remarks:
 Cultivated wheat field adjacent to wetland. Wetland soils and hydrology are not present, it is highly unlikely this location would support hydrophytic vegetation in undisturbed conditions.

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 ¹	Loc ²		
0-6	2.5Y 3/2	100					Silt Loam	plow horizon
6-18	10YR 4/3	100					Silt Loam	

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

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

Restrictive Layer: (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Dry upland soils. Subangular blocky structure, Ap horizon

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sparsley Vegetated Concave Surf. (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where tilled)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Frost-Heave Hummocks (D7) (LRR F)
<input type="checkbox"/> Water-Stained Leaves (B9)	
<input type="checkbox"/> Salt Crust (B11)	
<input type="checkbox"/> Aquatic Fauna (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) (where not tilled)	
<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 <u>X</u>	Depth (inches) _____	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches) _____	
Saturation Present? (includes capillary fringe)	Yes _____ No <u>X</u>	Depth (inches) _____	

Remarks:
No irrigation observed.

Attachment C

Construction and Environmental Disturbance Requirements



Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

Soils

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

Surface Waters

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

Fill Material

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

Appendix D – Habitat Assessment, Raptor Nest Survey, and Sensitive Species Assessment

*Habitat Assessment, Raptor Nest Survey,
and Sensitive Species Review for Caliber
Midstream PSC Project Site
McKenzie County, North Dakota*

Prepared for
Caliber Midstream

Prepared by



June 2014

Executive Summary

This report summarizes the habitat conditions and occurrence potential for wildlife species, including sensitive species, at Caliber Midstream's (Caliber's) PSC Project (Project) site in McKenzie County, North Dakota. A habitat assessment, raptor nest survey, and sensitive species review were conducted in June 2014 as due diligence for the North Dakota Public Service Commission (PSC) permits. Vegetation within the Project area is predominantly agricultural with active and inactive fields. No active raptor nests were found within the Project area and 1-mile buffer. Lists of sensitive species were obtained from the U.S. Fish and Wildlife Service (USFWS) and North Dakota Game and Fish Department (NDGF). Based on species habitat requirements and distributions, it is unlikely that federally listed threatened or endangered species would regularly occur in the Project area.

Project Area

Caliber constructed an approximately 4.5-mile natural gas liquid (NGL) pipeline in McKenzie County, North Dakota in August 2013. The Project is located about 10 miles south of the town of Alexander. The pipeline is east of 139th Ave NW and west of Redwing Road, and south of 25th St NW and north of 22nd St NW. Pipeline end stations are at the Hey Butte facility and OneOK. Elevation in the Project area is approximately 2,400 feet above sea level. The pipeline is in privately owned agricultural fields, and a number of producing oil and gas wells and production facilities dot the area. Attachment A, Figure 1 is a regional map. The Project area and 1-mile buffer is found in Attachment A, Figure 2.

Methods

A habitat assessment, raptor nest survey, and sensitive species review were conducted for the Project area. General wildlife observations were also documented during the Project site visit conducted by biologists (Katy Reagan, Sunbird Biological Consultants and Matt Kizlinski, Hemlock Environmental Consulting) on June 24, 2014.

Habitat Assessment

Aerial photographs and GIS data, such as National Land Cover Dataset, U.S. Geological Survey GAP land cover, and land ownership, were used for preliminary Project habitat mapping. These data were used as a base for field verification. During the site visit, general information about vegetation types and habitat conditions were recorded.

Raptor Nest Survey

The objective of the raptor nest survey was to identify nests in the Project area and the 1-mile buffer. Biologists walked the pipeline route and used county roads as transects to obtain visual coverage of the area. Due to the gently rolling topography of the area, limited number of trees, and far sight distance (greater than 1 mile), visual coverage of trees within the survey area was nearly 100 percent. Nest searches were completed by searching suitable habitat, such as trees, tall shrubs, and rock outcrops.

Sensitive Species Review

Lists of special status species and occurrence data in McKenzie County were obtained from USFWS and NDGF. These lists were examined to assess the potential of special status species occurrence and habitat in the Project area.

Results

Habitat Assessment

The Project area is located within the Bailey Dry Steppes of Continental Climate Ecoregion (Bailey 1986). Temperate steppes are characterized by semiarid continental climate regime with maximum summer rainfall, and evaporation usually exceeds precipitation. Typical vegetation is numerous species of short grass that usually grow in sparsely distributed bunches. Scatter shrubs and low trees sometimes also grow in this ecoregion (Bailey 1986).

The Project area is primarily used for agricultural purposes. The Project area and surrounding landscape consist of active and fallow agricultural fields. Agricultural habitats in the Project area include wheat, hay, and canola fields. Outside of croplands, representative shrubs in the area include Russian olive (*Elaeagnus angustifolia*), dogwood (*Cornus sp.*), rose (*Rosa sp.*), cottonwood (*Populus sp.*), and willow (*Salix sp.*). Typical grasses outside of croplands include crested wheatgrass (*Agropyron cristatum*) and smooth brome (*Bromus inermis*). No unique habitats are found in the Project area and large tracts of continuous, similar habitats are found adjacent to the Project area. Attachment B is a photo log of habitats in the Project area.

Raptor Nest Survey

No raptor nests were found within the Project area and the 1-mile buffer. No raptors were seen and no signs of nesting raptors were observed during the survey.

Sensitive Species Review

A review of the USFWS endangered, threatened, and candidate species for North Dakota was conducted to identify species listed under the Endangered Species Act that have the potential to occur in McKenzie County and potentially within the Project area (Table 1) (USFWS, 2014a). Piping plover critical habitat in McKenzie County is designated approximately 15 miles north of the Project along the Missouri River (USFWS, 2014b).

TABLE 1
McKenzie County Occurrence of Endangered, Threatened and Candidate Species and Designated Critical Habitat

Scientific Name	Common Name	Status	Habitat Association	Presence/Absence of Suitable Habitat in Project Area
<i>Sterna antillarum</i>	Interior least tern	Endangered	Sparsely vegetated sandbars, including those in Missouri and Yellowstone River systems	Absent
<i>Grus americana</i>	Whooping crane	Endangered	Migrate through North Dakota each spring and fall	Present, migration corridor
<i>Mustela nigripes</i>	Black-footed ferret	Endangered	Found in or near prairie dog colonies	Absent
<i>Scaphirhynchus albus</i>	Pallid sturgeon	Endangered	Prefer bottom of large, shallow rivers with sand and gravel bars	Absent
<i>Canis lupus</i>	Gray wolf	Endangered	Infrequent visitors from Minnesota, Montana, or Manitoba, Canada	Absent

Habitat Assessment, Raptor Nest Survey, and Sensitive Species Review for Caliber Midstream PSC Project Site

TABLE 1
McKenzie County Occurrence of Endangered, Threatened and Candidate Species and Designated Critical Habitat

Scientific Name	Common Name	Status	Habitat Association	Presence/Absence of Suitable Habitat in Project Area
<i>Charadrius melodus</i>	Piping plover	Threatened	Designated critical habitat in McKenzie County along Missouri River; nest on prairie alkali lakes or Missouri River in North Dakota; inhabit barren sand and gravel shores of rivers and lakes	Absent
<i>Hesperia dacotae</i>	Dakota skipper	Candidate	Native prairie containing a high diversity of wildflowers and grasses	Absent
<i>Myotis septentrionalis</i>	Northern long-eared bat	Proposed	Winter: underground caves and cave-like structures Summer: roost singly or in colonies in cavities, underneath bark, crevices, or hollows of both live and dead trees and/or snags (typically ≥ 3 inches DBH)	Winter: Absent Summer: Minimal to no trees ≥ 3 inches DBH with suitable bark conditions
<i>Calidris canutus rufa</i>	Rufa red knot	Proposed	Migrates in large flocks long distances between nesting areas northward March- early June and southward July-August	Present, migration corridor
<i>Anthus spragueii</i>	Sprague's pipit	Candidate	Native to short-to-mixed grass prairie	Absent

Source: USFWS, 2014a.

Whooping cranes may be found in the Project area during migration but are unlikely to spend more than a few days in any one spot. Rufa red knots are a rare migrant in the interior U.S. and are unlikely to be found in the Project area.

Suitable northern long-eared bat summer roosts are trees (live, dying, dead, or snag) with a diameter at breast height (DBH) of three inches or greater with exfoliating bark, crevices, cavities, or cracks. Isolated trees are considered suitable habitat they exhibit the characteristics of a suitable roost tree and are less than 1,000 feet from the next nearest suitable roost tree within a woodlot, or wooded fencerow (USFWS 2014c). Summer habitat for northern long-eared bats is extremely limited in the Project area. There are minimal to no three inch DBH trees with suitable bark conditions for roosting. There are no woodlots or wooded fencerows in the area. The following three locations are the only places with \geq three inch DBH trees along the pipeline route (see Attachment B: Photo Log). No trees were removed and the limited tree habitat in the area was not disturbed during construction of the pipeline.

- *Photo Log Point 5:* The pipeline crossing at Antelope Creek was bored and no vegetation was removed in this area. There are two large (≥ 3 inch DBH) cottonwood trees approximately 800 feet east of the bore location. Otherwise Antelope Creek does not contain trees in the vicinity of the pipeline route, only large shrubs such as Russian olive, dogwood, and rose.
- *Photo Log Point 8:* At this location, there are abandoned pieces of farm equipment, a windmill, and a small cottonwood and willow tree stand and shelter belt. The trees are approximately 500 feet west of the pipeline route. The majority of these trees are less than three inches DBH.

- *Photo Log Point 12*: There is a pond south of the pipeline route (approximately 280 feet) and north of 22nd St NW surrounded by large (>3 inch DBH) cottonwoods. This area was not disturbed by pipeline construction and remains intact.

Habitat for the other federally listed species for McKenzie County, North Dakota, is not present in the Project area.

Most species of birds, including eagles and other raptors, are protected under the Migratory Bird Treaty Act. Bald eagles (*Haliaeetus leucocephalus*) and golden eagles (*Aquila chrysaetos*) receive additional protection under the Bald and Golden Eagle Protection Act. Although not observed during the survey, bald and/or golden eagles may use the Project area. Bald eagles tend to be more closely associated with forested areas near water, but they have been found nesting in single trees several miles from the nearest water body. Golden eagles inhabit a wide variety of habitat types including open grassland areas.

North Dakota does not have a state endangered or threatened species list. Only those species listed by the Endangered Species Act of 1973 are considered threatened or endangered in North Dakota (NDGF 2013). However, North Dakota’s Wildlife Action Plan focuses on 100 species that are considered Species of Conservation Priority. These species are identified for planning purposes only and there is no statutory authority related to these species. Representative Species of Conservation Priority with potential to occur in the Project area include Swainson’s hawk (*Buteo swainsoni*), ferruginous hawk (*Buteo regalis*), lark bunting (*Calamospiza melanocorys*), grasshopper sparrow (*Ammodramus savannarum*), northern harrier (*Circus cyaneus*), and loggerhead shrike (*Lanius ludovicianus*).

Attachment C is documentation of coordination with USFWS and NDGF.

General Wildlife Observations

Wildlife found in the Project area is typical of the Great Plains landscapes. Wildlife species observed in the Project area during the field visit on June 24, 2014 are listed in Table 2.

TABLE 2
Wildlife Species Identified during the Project Field Visit, June 24, 2014

Scientific Name	Common Name
Birds	
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Calamospiza melanocorys</i>	Lark bunting
<i>Carduelis tristis</i>	American goldfinch
<i>Chordeiles minor</i>	Common nighthawk
<i>Columba livia</i>	Rock pigeon
<i>Dendroica petechia</i>	Yellow warbler
<i>Dumetella carolinensis</i>	Gray catbird
<i>Eremophila alpestris</i>	Horned lark
<i>Hirundo rustica</i>	Barn swallow
<i>Molothrus ater</i>	Brown-headed cowbird
<i>Phasianus colchicus</i>	Ring-necked pheasant

TABLE 2
Wildlife Species Identified during the Project Field Visit, June 24, 2014

Scientific Name	Common Name
<i>Pooecetes gramineus</i>	Vesper sparrow
<i>Quiscalus quiscula</i>	Common grackle
<i>Spizella passerine</i>	Chipping sparrow
<i>Sturnella neglecta</i>	Western meadowlark
<i>Toxostoma rufum</i>	Brown thrasher
<i>Turdus migratorius</i>	American robin
<i>Tyrannus tyrannus</i>	Eastern kingbird
<i>Tyrannus verticalis</i>	Western kingbird
<i>Zenaida macroura</i>	Mourning dove
Mammals	
<i>Antilocapra americana</i>	Pronghorn
<i>Odocoileus sp.</i>	Deer
<i>Sylvilagus sp.</i>	Cottontail

Conclusions

Habitat in the Project area is agricultural fields. Limited tree habitat is found in the area, and no trees were removed during Project construction. No raptor nests were identified in the Project area and 1-mile buffer. Based on habitat available in the Project area and species distributions, it is unlikely that federally listed threatened or endangered species would regularly occur in the Project area. Impacts to wildlife and wildlife habitat from construction of the Caliber Midstream PSC Project are expected to be negligible.

References

Bailey, R.G. 1986. A world ecoregions map for resource reporting. Environmental Conservation, Vol. 13, No. 3, pp. 195-202.

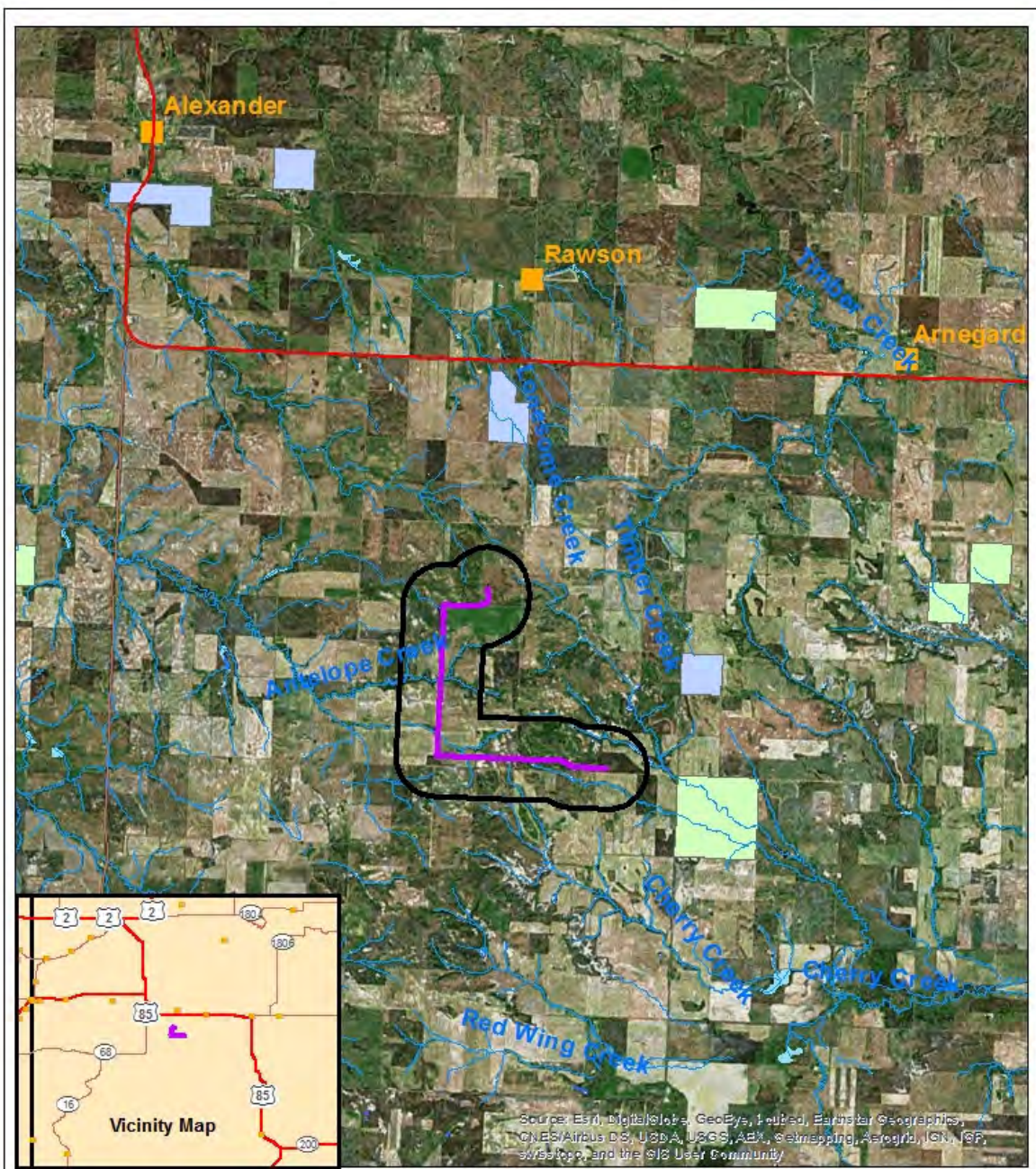
North Dakota Fish and Game Department (NDFG). 2013. Threatened and Endangered Species. Last updated December. <http://www.gf.nd.gov/wildlife/fish-wildlife/threatened-and-endangered-species> Accessed: June 27, 2014.

U.S. Fish and Wildlife Service (USFWS). 2014a. County Occurrence of Endangered, Threatened and Candidate Species and Designated Critical Habitat in North Dakota. June.

USFWS. 2014b. Critical Habitat Portal. <http://ecos.fws.gov/crithab/> Accessed June 26, 2014.





USFWS. 2014c. Northern long-eared bat interim conference and planning guidance, USFWS Regions 2, 3, 4, 5, & 6. January 6.

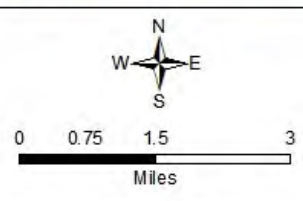
Attachment A: Figures

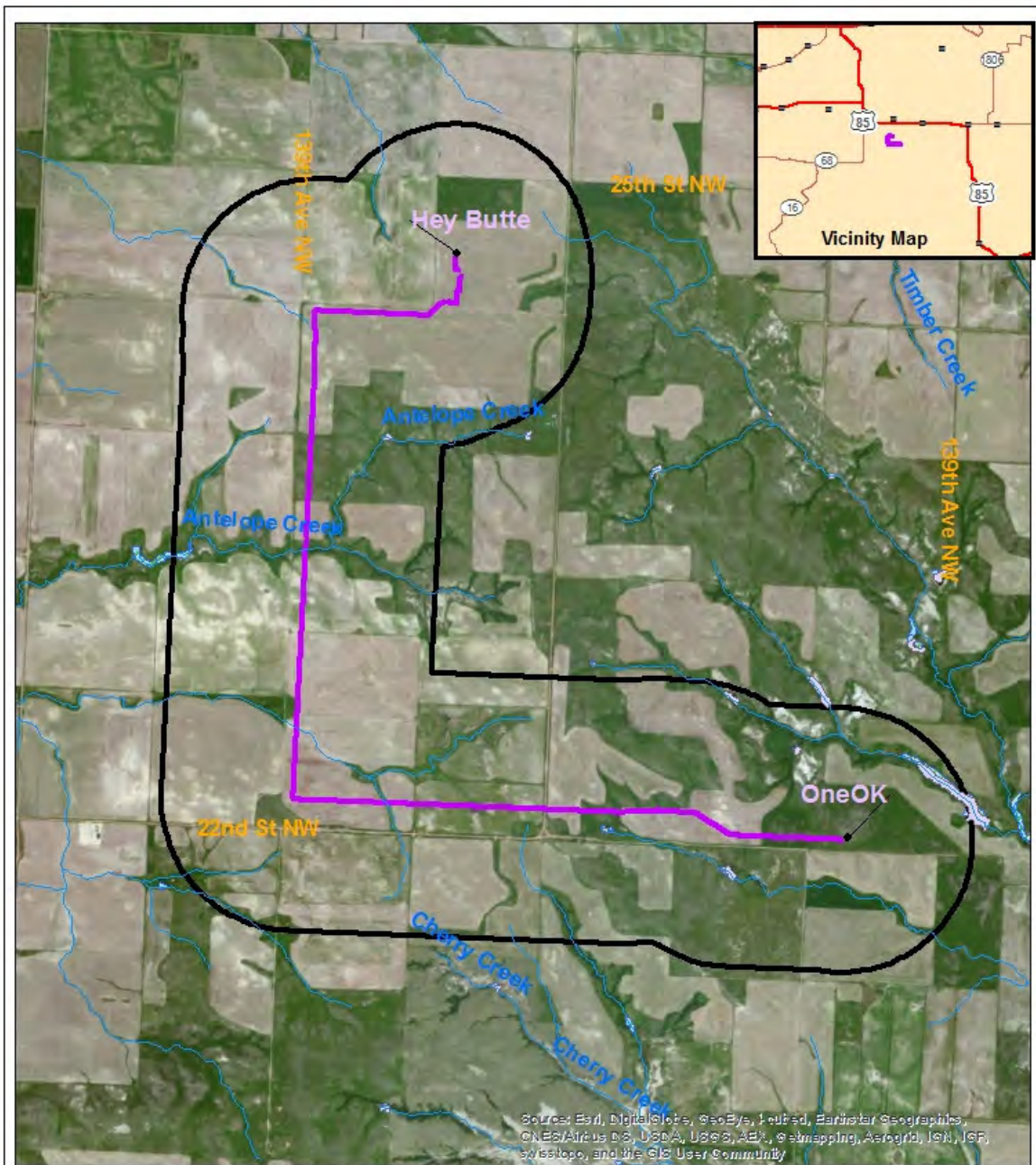


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, Aero, Geomatics, AeroGRID, IGN, IGP, swisstopo, and the GIS User Community

Regional Map
 Figure 1
 Attachment A
**Caliber Midstream
 PSC Project**
 Date: 6/27/2014

- Legend**
-  1mile buffer
 -  NGL_Pipeline
 - Surface Ownership**
 -  Division of State Lands
 -  State Dept of Fish & Wildlife







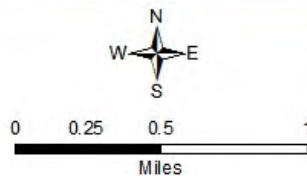
Project Area

Figure 2
Attachment A
**Caliber Midstream
PSC Project**

Date: 6/27/2014

Legend

-  NGL_Pipeline
-  1mile buffer



Attachment B: Photo Log

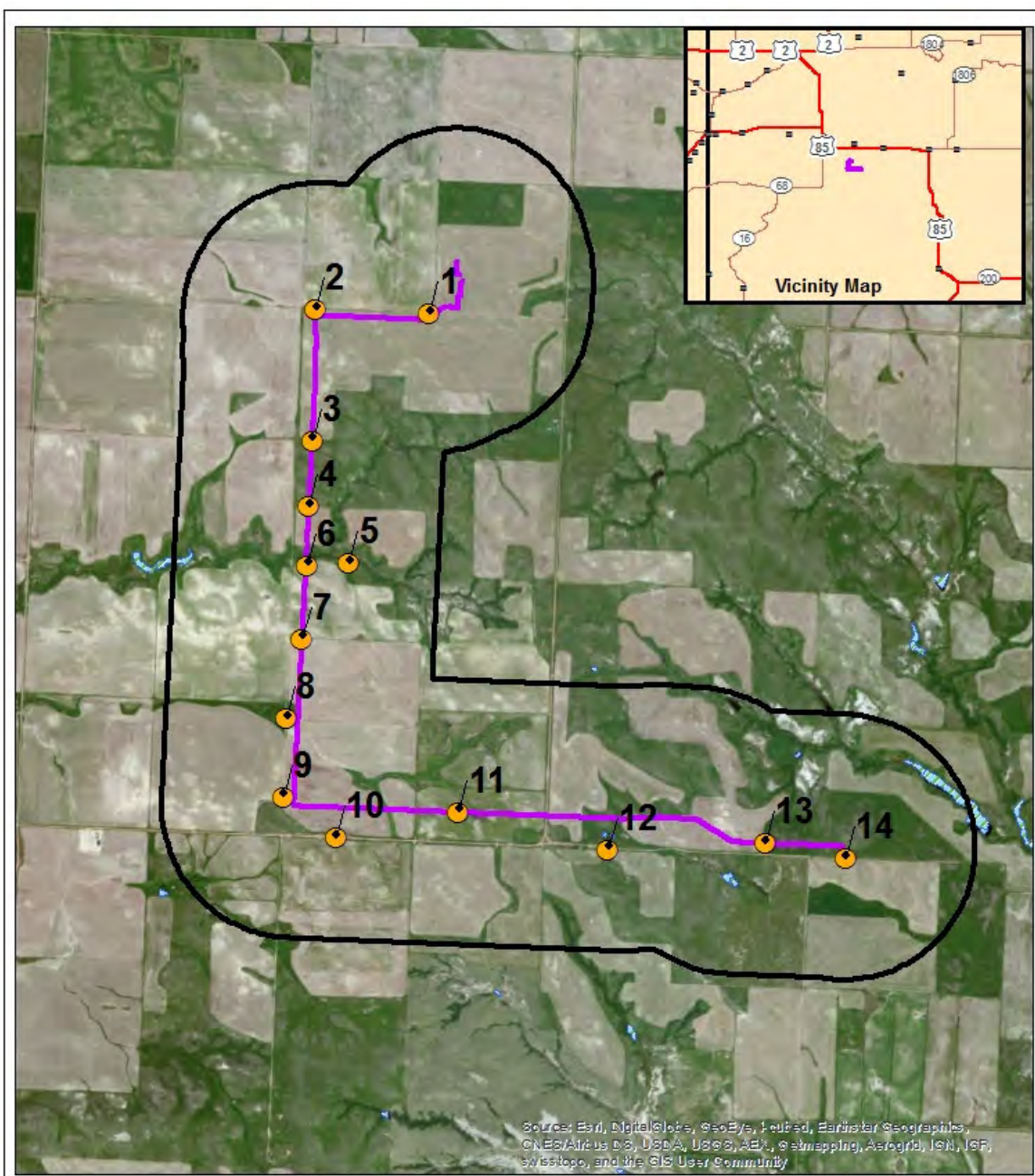
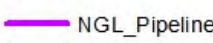




Photo Log Points
 Attachment B: Photo Log
**Caliber Midstream
 PSC Project**
 Date: 6/26/2014

- Legend**
-  NGL_Pipeline
 -  1mile buffer
 -  Photo Log Points

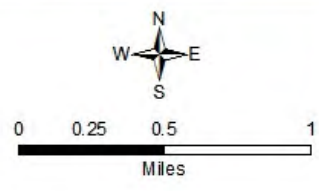




Photo Log Point 1: Hey Butte Facility (1)



Photo Log Point 1: Hey Butte Facility (2)



Photo Log Point 1: Above ground pipeline feature south of Hey Butte facility



Photo Log Point 2: Pipeline route looking south



Photo Log Point 2: Pipeline route looking west



Photo Log Point 3: Pipeline route looking north



Photo Log Point 3: Pipeline route looking south



Photo Log Point 4: Pipeline route looking north



Photo Log Point 4: Pipeline route looking south



Photo Log Point 5: Cottonwood trees east of pipeline route in Antelope Creek



Photo Log Point 6: Antelope Creek looking west



Photo Log Point 6: Antelope Creek looking east



Photo Log Point 7: Pipeline route looking south



Photo Log Point 7: Pipeline route looking north



Photo Log Point 8: Cottonwood and willow tree stand looking west from pipeline route



Photo Log Point 8: Tree shelterbelt looking north from pipeline route



Photo Log Point 9: Pipeline route looking east



Photo Log Point 9: Pipeline route looking north (Hey Butte facility flare in background)



Photo Log Point 10: Pipeline route looking north (trees at Photo Log Point 8)



Photo Log Point 11: Pipeline route looking east



Photo Log Point 12: Pond south of pipeline route and north of 22nd St NW



Photo Log Point 13: Pipeline route looking east



Photo Log Point 13: Pipeline route looking west (trees at Photo Log Point 12)



Photo Log Point 14: Pipeline terminus OneOK

Attachment C: Agency Coordination

Phone log



Contact name: Heidi Riddle, Fish and Wildlife Biologist, US Fish and Wildlife Service (USFWS)

Phone number: 701-250-4481

Date and time: July 1, 2014 10:35AM

Call summary:

Katy Reagan (Sunbird Biological) and Heidi Riddle (USFWS) discussed the Caliber Midstream PSC project, wildlife issues related to oil and gas development in North Dakota, and project coordination with USFWS.

- USFWS had no comments regarding the Caliber Midstream PSC Project.
- USFWS recommends communicating with USFWS prior to construction.
- Be aware of crossing USFWS managed lands and communicate early with USFWS.
- Habitat assessment is first step for Dakota skipper (butterfly) presence/absence survey.
- Tree removal during project construction may have impacts on northern long-eared bat summer roosting habitat and documentation of the limited tree habitat in the area is important.
- Raptor nest surveys are a good idea in order to determine potential impacts to raptors (especially golden and bald eagles) from construction and operation of projects.
- Coordinate early in the planning process with USFWS. USFWS may provide recommendations for construction, operation, and maintenance of projects, as appropriate.

Follow-up required: None

Phone log



Contact name: Steve Dyke, Conservation Supervisor, North Dakota Game and Fish Department (NDGF)

Phone number: 701-328-6347

Date and time: July 1, 2014 3:07 PM

Call summary:

Katy Reagan (Sunbird Biological) called Steve Dyke (NDGF) on July 1, 2014 regarding the Caliber PSC project, wildlife issues related to oil and gas development in North Dakota, and project coordination with NDGF. NDGF returned the call to Sunbird and left the following message:

- No comments specific to the Caliber Midstream PSC Project, especially since the Project has already been constructed.
- NDGF is usually contacted in advance of construction of a project.
- In coordination submittal to NDGF proponents should include a Project description and details (what is the project?), and construction details including timing such as when construction will take place and how long it will take. Also include a map (figure or shapefile).
- Usually takes NDGF 4-5 weeks for review and comment.

Follow-up required: None

Appendix E – Cultural Resources Report

**A Class III Cultural Resource Inventory of the
Caliber Natural Gas Liquids Pipeline Project,
McKenzie County, North Dakota**

by
Kimberly L. Redman,
Jeremy Omvig,
and
Jack E. Pfertsh

under the direction of
Jack E. Pfertsh
Principal Investigator

Prepared by
Alpine Archaeological Consultants, Inc.
PO Box 2075
Montrose, Colorado 81402

Prepared for
CH2M Hill Engineers, Inc.
9193 South Jamaica Street
Englewood, Colorado 80112-5946

July 2014

CONTAINS PRIVILEGED INFORMATION – DO NOT DISTRIBUTE

MANAGEMENT SUMMARY

Alpine Archaeological Consultants, Inc. (Alpine) performed a Class III inventory for the proposed Caliber Midstream Project on June 28, 2014. The work was performed at the request of CH2M Hill Engineers, Inc., who is assisting Caliber Midstream with their environmental program. CH2M Hill Engineers, Inc. hired Alpine to complete Class I and Class III cultural resource inventory for the project.

The project consists of a natural gas liquids line (NGL) approximately 6.8 southeast of Alexander in McKenzie County, North Dakota. Alpine inventoried a 100-ft.-wide corridor centered on approximately 4.45 miles of the proposed pipeline centerline covering a total of 54 acres. The entire project was on private land and primarily traversed cultivated farm land. The inventory resulted in the identification of one prehistoric isolated find (IF) (32MZX1415). The IF is recommended as not eligible for inclusion in the National Register of Historic Places. This report is being provided as part of Caliber Midstream's due diligence and Alpine recommends that the project be granted a determination of *No Historic Properties Affected and No Significant Sites Adversely Affected* with clearance to proceed as planned.

