Application to the North Dakota Public Service Commission for a Certificate of Corridor Compatibility and an Energy Transmission Facility Route Permit for the COLT Connector Pipeline Project

By
Rangeland Pipeline, LLC

February 2011

Commission Case No. PU-10-637

Rangeland Energy, LLC

BARR

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Abbreviations and Acronyms

CRP	Conservation Reserve Program
ESA	Endangered Species Act
MP	Milepost
NDDH	North Dakota Department of Health
NDDOT	North Dakota Department of Transportation
NDGFD	North Dakota Game and Fish Department
NDPRD	North Dakota Parks and Recreation Department
NDPSC	North Dakota Public Service Commission
NDSLD	North Dakota State Lands Department
NDSWC	North Dakota State Water Commission
NRCS	Natural Resources Conservation Service
NWP	Nationwide Permit
PCN	Preconstruction Notification
SHPO	State Historic Preservation Office
USACE	United Sates Army Corps of Engineers
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation
USFWS	United States Fish and Wildlife Service
WTI	West Texas Intermediate

APPLICATION FOR
RANGELAND PIPELINE, LLC
FOR WAIVER OR REDUCTION OF PROCEDURES AND TIME SCHEDULES

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

IN THE MATTER OF THE APPLICATION OF RANGELAND PIPELINE, LLC FOR A CERTIFICATE OF CORRIDOR COMPATIBILITY AND ROUTE PERMIT FOR THE CONSTRUCTION OF AN APPROXIMATELY 20-MILE-LONG CRUDE OIL PIPELINE AND ASSOCIATED FACILITIES IN WILLIAMS COUNTY, NORTH DAKOTA	CASE NO. PU-10-637

Application of Rangeland Pipeline, LLC,
for Waiver or Reduction of Procedures and Time Schedules

In connection with its submission of a consolidated application for a Certificate of Corridor Compatibility and Route Permit for an approximately 20-mile-long, 8-inch crude oil pipeline project to be located in Williams County, North Dakota (the Project), Rangeland Pipeline, LLC (Rangeland Pipeline), submits to the North Dakota Public Service Commission (Commission) this application for a waiver or reduction of procedures and time schedules set forth in Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. In accordance with Section 49-22-07.2 of the North Dakota Century Code and Chapter 69-06-06 of the North Dakota Administrative Code, Rangeland Pipeline requests that the Commission waive the following requirements:

1. That the Commission hold a separate hearing on a waiver request, a Certificate of Corridor Compatibility application and a Route Permit application, as may be required by Sections 49-22-07.2, 49-22-08, 49-22-08.1 and 49-22-13 of the North Dakota Century Code and Chapter 69-06-01-02 of the North Dakota Administrative Code. Rangeland Pipeline requests that the Commission hold a single consolidated hearing on this waiver request and its consolidated application

for a Certificate of Corridor Compatibility and a Route Permit. Rangeland Pipeline also requests that the Commission shorten the three-month period specified in Section 49-22-08(5) of the North Dakota Century Code and Section 69-06-06-02(2) of the North Dakota Administrative Code, and the six-month period specified in Section 49-22-08.1(5) of the North Dakota Century Code.

2. That the Commission waive the requirements of Sections 49-22-08 and 49-22-08.1 of the North Dakota Century Code insofar as these sections may require the separate filing of applications for a Certificate of Corridor Compatibility and a Route Permit, and insofar as they require separate publication of notices of filing said applications.

3. That the Commission waive the requirement of Section 69-06-04-02(1)(b) of the North Dakota Administrative Code insofar as it requires that the corridor width be at least ten percent of its length, and that the Commission approve a one-mile-wide corridor for the Project.

4. That the Commission waive requirements for mylar maps and stereo-pair aerial photographs as set forth in the Commission's Energy Conversion and Transmission Facility Siting Guidelines for Certificate of Corridor Compatibility and Route Permit Applications. Geographic Information System (GIS) maps that meet the intent of the Commission's requirements are provided in the consolidated application for a Certificate of Corridor Compatibility and a Route Permit.

Consistent with the Commission's Energy and Transmission Facility Siting Guidelines (Siting Guidelines), Rangeland Pipeline provides the following information in support of its waiver requests:

A. Description of Proposed Project.

1. **Type**: The Project will consist of an origin pumping station, approximately twenty miles of 8-inch pipeline, and a facility to deliver into Enbridge tankage at Beaver Lodge and into Tesoro tankage at Ramberg. Aboveground facilities installed will include a pump and meter station, "pig" launching and receiving stations, a block valve and a meter station. Pipeline markers will also be installed.

2. **Product**: The Project will transport crude oil.

3. **Size and Design**: The Project will require the installation of an 8-inch nominal diameter pipeline with a minimum nominal wall thickness of 0.219 inches and minimum grade X-42. Heavier wall pipe, likely 0.250-inch wall thickness or greater, will be installed at most road and railroad crossings. The maximum operating pressure will be 1480 pounds of pressure per square inch gauge (psig), the maximum temperature will be 100 degrees Fahrenheit and the maximum design flow rate will be 45,000 barrels per day. Aboveground facilities will include a pump and meter station, pig launchers and receivers, a meter station and a block valve. Pipeline markers will also be installed. Design, construction and operation of the pipeline and related facilities will be in accordance with U.S. Department of Transportation regulations governing the transportation of hazardous liquids. These regulations are prescribed under Part 195 of Title 49 of the Code of Federal Regulations, Transportation of Hazardous Liquids by Pipelines.

4. **Location**: The entire Project will be located in Williams County, North Dakota, and will extend from Rangeland Terminals, LLC's (Rangeland Terminals) COLT Hub near

Epping, North Dakota, to the Project's delivery facility, which will be located approximately eight miles south of Tioga, North Dakota. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines. A map of the proposed Project is attached hereto as Exhibit A.

5. **Geographical Service Area**: As noted above, the proposed Project will transport crude oil from Rangeland Terminals' COLT Hub near Epping, North Dakota, to nearby transmission pipelines owned and operated by Enbridge and Tesoro. The immediate area served by the proposed Project will be northwestern North Dakota; however, the crude oil transported by the Project will ultimately be delivered to various areas served by the Enbridge and Tesoro transmission pipelines, as well as any future transmission pipelines constructed in the area.

6. **Time Schedule**: Rangeland Pipeline has a target completion date for the Project of November, 2011. Rangeland Pipeline proposes to develop the Project on the following schedule:

- February 2011 – Rangeland Pipeline files with the Commission a consolidated application for a Certificate of Corridor Compatibility and Route Permit.
- On or Before May 1, 2011 – The Commission issues a Certificate of Corridor Compatibility and Route Permit for the Project.
- May/June 2011 – Rangeland Pipeline will complete right-of-way acquisition and detailed engineering, and begin construction of the Project.
- Mid to Late October 2011 – Rangeland Pipeline will have completed construction of the Project.
- November 2011 – The Project will be placed in service.

7. **Future Plans**: Rangeland Pipeline plans to construct connections, as necessary and appropriate, between the Project and any future transmission pipelines constructed near the

Project. However, at this time, Rangeland Pipeline has no specific plans for additions to or modifications of the Project.

B. Need for Facility.

The existing pipeline infrastructure in North Dakota, Montana, and Wyoming is at capacity. Average individual well production in both North Dakota and Montana has increased as a result of advances in drilling technology and overall production has grown exponentially since 2005. Rangeland Pipeline's proposed Project will provide a means for crude oil production in Williams and surrounding counties to access the Enbridge and Tesoro transmission pipelines near Tioga, North Dakota. Small to medium sized producers will be provided an additional outlet for getting crude oil to market, and producers who are faced with longer truck hauls to the upstream Enbridge pipeline entry point at Trenton could avail themselves of reduced haul distances and lowered costs by utilizing the proposed Project to deliver their volumes from Rangeland Terminals' COLT Hub to the Enbridge and Tesoro transmission pipelines.

C. Cost.

The total capital cost of developing the proposed Project is estimated to be $15 million.

D. Waiver Request.

Rangeland Pipeline requests that the Commission grant it the waivers requested because said waivers are needed in order to prevent potentially significant delays to the Project. As noted above, the Project is needed in order to provide an economical and efficient means of transporting crude oil from Rangeland Terminals' COLT Hub to the Enbridge and Tesoro transmission pipelines. Without the waivers of time schedules and procedures requested, completion of Rangeland Pipeline's proposed Project will be delayed and the Project will not be able to provide a transmission outlet for Rangeland Terminals' COLT Hub in a timely manner.

In addition, if construction were delayed until late in 2011, final restoration of the construction workspace would be delayed until the following spring, rather than being completed immediately following construction, which would increase the impacts of construction on landowners.

Section 49-22-07.2 of the North Dakota Century Code provides that the Commission may waive procedures and time schedules upon a finding that "the proposed facility is of such length, design, location, or purpose that it will produce minimal adverse effects." Based upon the investigation and analysis set forth in Rangeland Pipeline's consolidated application for a Certificate of Corridor Compatibility and a Route Permit for the Project, granting the waivers requested is appropriate because the proposed facility will produce minimal adverse effects due to its short length (only approximately 20 miles), its design (an underground, small-diameter pipeline with few above-ground appurtenances), its location (crossing pasture and farmland in rural Williams County within a previously-approved transmission corridor, and avoiding Exclusion and Avoidance Areas, as set forth in Section 69-06-08-02 of the North Dakota Administrative Code), and its purpose (underground pipeline transportation of crude oil from Rangeland Terminals' COLT Hub to nearby transmission pipelines).

In determining whether the proposed facility will result in adverse impacts on the environment, Rangeland Pipeline evaluated the Project using the criteria set forth in the Energy Conversion and Transmission Siting Act (Siting Act), the Energy Conversion and Transmission Siting Rules set forth in Article 69-06 of the North Dakota Administrative Code (Siting Rules), and the Commission's Siting Guidelines. More specifically, Rangeland Pipeline evaluated the impacts of the Project considering the siting criteria set forth in Section 69-06-08-02 of the North Dakota Administrative Code and the factors set forth in Section 49-22-09 of the North Dakota Century Code. Impacts associated with the Project, and mitigation measures that will be taken

with respect to said impacts, are summarized in Sections D.4 and D.5 of the Certificate of Corridor Compatibility portion of Rangeland Pipeline's consolidated application for a Certificate of Corridor Compatibility and Route Permit, provided herewith. As discussed in Rangeland Pipeline's consolidated application, the proposed Project will comply with the Exclusion and Avoidance Area criteria, and mitigation measures will be taken to minimize Project impacts.

In addition, the majority of Rangeland Pipeline's proposed Project will be located adjacent and parallel to the existing Enbridge 10-inch crude oil pipeline, for which the Commission issued Certificate of Corridor Compatibility for Transmission Facility Certificate Number 94 (Corridor Certificate No. 94) and Route Permit for the Construction of a Transmission Facility Number 104 (Route Permit No. 104) on September 20, 2006 in Case No. PU-06-330. In Corridor Certificate No. 94, the Commission approved "a corridor one mile wide and 52 miles long centered approximately 25 feet adjacent and parallel to the existing Enbridge Pipelines (North Dakota) LLC [8-inch] crude petroleum pipeline from the existing Trenton Station to the Existing Beaver Lodge Station." In its combined application, Rangeland Pipeline utilized the same one-mile-wide corridor that the Commission approved in Corridor Certificate No. 94. Thus, the combination of Rangeland Pipeline's own evaluation of the proposed Project utilizing the factors set forth in the Siting Act, the Siting Rules, and the Commission's Guidelines, and the fact that the proposed Project will be located within a previously-approved corridor, supports the determination that the proposed Project will have minimal adverse effects.

In addition, with respect to the corridor width waiver specifically, Section 69-06-04-02(1)(b) of the North Dakota Administrative Code provides that the Commission may approve a corridor width that is less than ten percent of the corridor length. In this case, waiving the corridor width requirement and approving the proposed one-mile-wide corridor is appropriate

because Rangeland Pipeline proposes to utilize the same corridor previously approved by the Commission for the Enbridge 10-inch crude oil pipeline. Considering that the proposed one-mile-wide corridor was sufficient for the Enbridge 10-inch crude oil pipeline, it would seem similarly appropriate to utilize and approve that one-mile-wide corridor for Rangeland Pipeline's proposed 8-inch crude oil pipeline Project. Moreover, since Rangeland Pipeline's route will parallel, to the extent possible, the route approved by the Commission for Enbridge in Route Permit No. 104, and will be located within 1,000 feet of the existing Enbridge pipeline route, the proposed Project corridor should be more than sufficient to encompass any route deviations that may arise during the permitting process.

Accordingly, Rangeland Pipeline respectfully requests that the Commission grant the requested waivers.

Dated this 10th day of February, 2011.

Fredrikson & Byron, P.A.

By Mollie M. Smith

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(701) 221-4020

STATE OF NORTH DAKOTA)
) ss.
COUNTY OF BURLEIGH)

MOLLIE M. SMITH, of lawful age, being first duly sworn, on oath deposes and says:

That she is the duly elected and qualified attorney for Applicant in the foregoing application; that she executed the foregoing application for and on behalf of said Applicant and as its said attorney that she has read said application and knows the contents thereof, and that the

statements made and contained therein are, to the best of her knowledge and belief, true and correct.

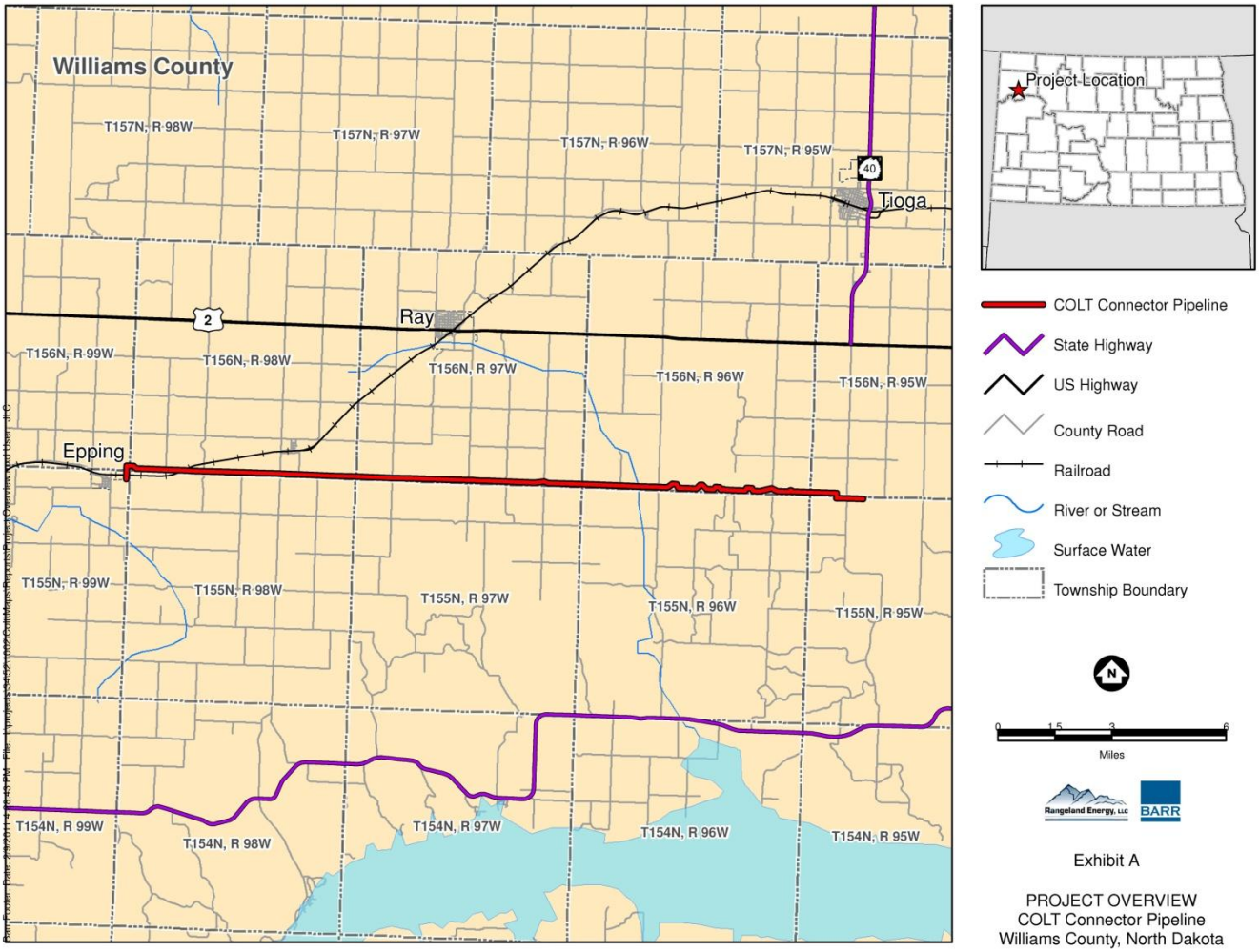
MOLLIE M. SMITH

Subscribed and sworn to before me this 10th day of February, 2011.

SHEILA A. LARSON
Notary Public
State of North Dakota
My Commission Expires April 3, 2012

Notary Public
My Commission Expires:

4871388_3.DOC


Williams County
T157N, R 98W
T157N, R 97W
T157N, R 96W
T157N, R 95W
40
Tioga
Ray
2
T156N, R 99W
T156N, R 98W
T156N, R 97W
T156N, R 96W
T156N, R 95W
Epping
T155N, R 99W
T155N, R 98W
T155N, R 97W
T155N, R 96W
T155N, R 95W
T154N, R 99W
T154N, R 98W
T154N, R 97W
T154N, R 96W
T154N, R 95W
Project Location
COLT Connector Pipeline
State Highway
US Highway
County Road
Railroad
River or Stream
Surface Water
Township Boundary
N
0
1.5
3
6
Miles
Rangeland Energy, LLC
BARR
Exhibit A
PROJECT OVERVIEW
COLT Connector Pipeline
Williams County, North Dakota

CERTIFICATE OF

CORRIDOR COMPATIBILITY

Introduction

Rangeland Pipeline, LLC (Rangeland Pipeline), a Delaware limited liability company authorized to do business in the State of North Dakota, submits to the North Dakota Public Service Commission (Commission) this combined application for a Certificate of Corridor Compatibility and Route Permit for a crude oil pipeline project, the COLT Connector Pipeline Project (COLT Connector or Project), in Williams County, North Dakota, pursuant to Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. The proposed Project will transport crude oil from Rangeland Terminals, LLC's (Rangeland Terminals) proposed crude oil loading terminal (COLT Hub) located near Epping, North Dakota, to a delivery facility that will be located approximately eight miles south of Tioga, North Dakota. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective Beaver Lodge and Ramberg Stations, as well as to future pipelines constructed in the area, which will facilitate the transportation of North Dakota crude oil to various markets. Rangeland Pipeline has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the Project. Rangeland Pipeline anticipates that the pipeline project will be operational by November 30, 2011.

Rangeland Pipeline is a wholly-owned subsidiary of Rangeland Energy, LLC (Rangeland Energy), a midstream energy development company formed in November, 2009, and is focused on developing, acquiring, owning and operating midstream crude oil and natural gas related assets in growing production areas, such as the Bakken oil-shale play in northwestern North Dakota and southeastern Montana. The principals at Rangeland Energy represent a combined 100 years of experience in developing, owning and operating midstream infrastructure. The team at Rangeland Energy prides itself on its record of safe and environmentally sound development and operating practices, and will apply their experience to the planned facilities in North Dakota.

Section A: Description of Transmission Facility

1. Type

The 8-inch-diameter pipeline will be approximately 20.3 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and the Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Terminals' COLT Hub located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed Project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

2. Product

The new pipeline will transport crude oil. Rangeland Pipeline will connect the proposed pipeline to existing transmission pipeline systems to provide transportation for increasing amounts of crude oil supplies from north of the Missouri River in Williams County as well as from neighboring counties in northwest North Dakota.

3. Size and Design

Design, construction and operation of the pipeline and related facilities will be in accordance with U.S. Department of Transportation regulations governing the transportation of hazardous liquids. These regulations are prescribed under Part 195 of Title 49 of the Code of Federal Regulations, Transportation of Hazardous Liquids by Pipelines.

a. Pipeline Facility

1. Width of Right-of-Way

Rangeland Pipeline is proposing to install the pipeline between Epping and Beaver Lodge Station generally 100 feet north of an existing Enbridge pipeline, the Trenton to Beaver Lodge Line, except at locations where crossovers of the existing pipeline or minor route variations are requested by landowners, are necessary to improve constructability, or will aid in minimizing impacts on sensitive resources. The alignment of the existing Enbridge pipeline and the alignment of the proposed Rangeland pipeline, including crossovers and route variations, are depicted on the maps included in Appendix B. Rangeland Pipeline plans to install the proposed pipeline within a newly-acquired 30-foot-wide right-of-way. During construction, Rangeland Pipeline proposes to use a temporary work

area that varies between 80 and 100 feet wide for a majority of the pipeline route. A temporary work area up to 150 to 200 feet wide may be required at some locations such as the beginning and end of the Project; where the pipeline approaches wetlands, waterbodies, roads, and railroads; and in areas of rocky soil, steep slopes, and rugged terrain or where horizontal directional drilling techniques would be used to install a segment of the pipeline. Following construction, the work area generally will be allowed to revert to its previous use. Rangeland Pipeline will generally use existing permanent roads to access the construction right-of-way. Roads that are paved or graveled will not require modification. Dirt roads and two-track trails may require grading and filling to make the roads passable for construction equipment. In addition, Rangeland Pipeline may need to construct temporary access roads for this Project. These roads would be needed to allow access to remote areas of the construction right-of-way. To support construction activities, Rangeland Pipeline will use temporary contractor staging areas and/or pipe storage yards at strategic points along the Project route. Additionally, Rangeland Pipeline anticipates a need for a pipe offloading yard to accommodate transportation of pipe from the mill to the general Project vicinity. The location of the contractor and pipe offloading yards has not yet been determined, but the COLT Hub site could be used for some of these activities if suitable.

2. Estimated Distance between Surface Structures

Rangeland Pipeline is proposing to construct the following types of surface structures on this Project:

Pump and Meter Station: Rangeland Pipeline will construct a pump and meter station within the fenced area of Rangeland Terminals' COLT Hub.

Launcher and Receiver Traps: A pig launching station will be located at Rangeland Terminals' COLT Hub near Epping, and a pig receiving and receipt meter station will be located approximately 20.3 miles away at the Beaver Lodge Station at the end of the proposed pipeline, eight miles south of Tioga, North Dakota.

Block Valve: One block valve will be installed just west of Beaver Creek at approximately milepost (MP) 13.5, approximately 13.5 miles east of Rangeland Terminals' COLT Hub and 6.8 miles west of Beaver Lodge Station.

In addition, Rangeland Pipeline will install pipeline markers at every public road crossing.

3. Pipe Size

The proposed pipeline will have an 8-inch nominal pipe size diameter with minimum nominal wall thickness of 0.219-inches and minimum grade X-42. Heavier wall pipe, likely 0.250 or greater nominal wall thickness, will be used at most road and railroad crossings.

4. Approximate Length of Facility

The approximate length of the pipeline will be 20.3 miles.

5. Maximum Design Operating Pressure and Temperature

Maximum Operating Pressure: The maximum operating pressure of the Project will be 1480 pounds per square inch gauge (psig).

Maximum Temperature: The maximum operating temperature will be 100 degrees Fahrenheit.

6. Maximum Design Flow Rate

Maximum Design Flowrate: The maximum initial design flow rate will be approximately 45,000 barrels per day.

7. Number and General Location of Compressor or Pumping Stations

Rangeland Pipeline is proposing to construct a new pump and meter station at Rangeland Terminals' COLT Hub near Epping, North Dakota.

4. Time Schedule

a. Certificate of Corridor Compatibility

Rangeland Pipeline is seeking a Certificate of Corridor Compatibility on or before May 1, 2011.

b. Route Application

Rangeland Pipeline is seeking a waiver of Commission procedures to allow joint and simultaneous filing of its applications for a Certificate of Corridor Compatibility and Route Permit.

c. Route Permit

Rangeland Pipeline is seeking a Route Permit on or before May 1, 2011.

d. Construction Start Date

Rangeland Pipeline is proposing to start construction in late May, 2011.

e. Construction Complete

Rangeland Pipeline is proposing to complete construction in mid to late October, 2011.

f. In-Service Date

Rangeland Pipeline is proposing to place its facilities in service in November, 2011, or earlier if possible.

Section B: Studies

Rangeland Pipeline has consulted with several federal, state, and local agencies to identify environmental resources in the Project area and determine what, if any, environmental studies or assessments would be required for the proposed Project. A discussion of issues and concerns raised by agency personnel is included in Section B.2.k of the Application for a Route Permit. Documentation of consultations with each agency is included in Appendix C.

1. Cultural Resource Investigations

In October, 2010, Rangeland Pipeline commissioned a cultural resource study of the Project corridor and route. Barr directed a Class I literature search of the Project corridor and a Class III cultural resource inventory of the Project route. The results of the Class I literature search and Class III inventory are documented in:

> Smith, N. and J. Cooper. January 2011. *A Class I and III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota.* SWCA Environmental Consultants. Bismarck, North Dakota.

A copy of the report is included in Appendix D. On January 26, 2011, SWCA Environmental Consultants on behalf of Barr and Rangeland Pipeline provided the report to the State Historical Society of North Dakota, State Historic Preservation Office (SHPO). On January 27, 2011, the SHPO notified SWCA that it concurred with the report's determinations of "no significant sites affected" and "no historic properties affected," "provided the project is of the nature stated, it takes place in the plotted and mapped location, and that site 32WI961 is avoided from impacts as recommended…in the report." A full discussion of the cultural resource investigations and the report's findings can be found in Section D.4.a.iii of this application. Rangeland Pipeline has modified its proposed route accordingly in order to avoid all impacts to site 32WI961 and will maintain a 50-foot buffer from the site during construction activities.

In February, 2011, Rangeland Pipeline further modified the Project route to address landowner concerns, to maintain a minimum 100-foot buffer to the nearest Enbridge pipeline, and to improve the configuration at the Beaver Lodge delivery point. These minor changes resulted in three areas where the proposed route is now outside of the October, 2010 cultural resource survey corridor: from MP 11.2 to 11.4; at MP 14.6; and from MP 20.0 to 20.3. SWCA on behalf of Rangeland Pipeline will review the Class I literature search and consult with the SHPO to determine whether additional Class

III surveys are required. If further field review is required, these activities will be completed and SHPO approval obtained prior to construction. The results of all additional consultations and any further investigations will be provided to the Commission.

2. Wetland Assessment

In October, 2010, Rangeland Pipeline commissioned a wetland assessment of the Project route. Barr directed a field-based determination of wetlands within the proposed corridor. The results are documented in:

> Binstock, L. and M. Cook. January 2011. *Natural Resources and Wetland Determination Report for the COLT Connector Pipeline, Williams County, North Dakota*. SWCA Environmental Consultants. Bismarck, North Dakota.

A copy of the report is included in Appendix E. Based on the results of the wetland assessment and consultations with the U.S. Army Corps of Engineers (USACE), the proposed Project qualifies for coverage under USACE Nationwide Permit (NWP) 12 – Utility Line Activities – of Section 404 of the Clean Water Act. Because the Project occurs in an area where favorable habitat for species listed under Section 7 of the Endangered Species Act (ESA) could occur (although the Project is not likely to adversely affect listed species), Rangeland Pipeline must submit a Preconstruction Notification (PCN) to the USACE to recognize the Project's qualification under NWP 12. The submittal of the PCN will facilitate consultation with the United States Fish and Wildlife Service (USFWS) in support of a finding that the proposed action is not likely to affect federally-listed threatened and endangered species. A full discussion of the wetlands assessment and the report's findings can be found in Section D.4.a.iii of this application.

In February, 2011, Rangeland Pipeline further modified the Project route to address landowner concerns, to maintain a minimum 100-foot buffer to the nearest Enbridge pipeline, and to improve the configuration at the Beaver Lodge delivery point. These minor changes resulted in three areas where the proposed route is now outside of the October, 2010 wetland survey corridor: from MP 11.2 to 11.4; at MP 14.6; and from MP 20.0 to 20.3. SWCA on behalf of Rangeland Pipeline will review the topography and soils data in these areas and, if necessary, consult with the USACE to determine whether additional wetland determination surveys are required. If further survey work is required, these activities will be completed and the wetland determination report and PCN amended prior to construction. The results of all additional consultations and any further investigations will be provided to the Commission.

3. Protected Species

In October, 2010, Barr directed a habitat assessment for threatened and endangered species in the Project corridor on behalf of Rangeland Pipeline. The results are documented in:

> Binstock, L. and M. Cook. January 2011. *Natural Resources and Wetland Determination Report for the COLT Connector Pipeline, Williams County, North Dakota*. SWCA Environmental Consultants. Bismarck, North Dakota.

A copy of the report is included in Appendix E. Barr, on behalf of Rangeland Pipeline, is consulting with the USFWS regarding federally-listed threatened and endangered species. Consultations with the USFWS are ongoing and any responses received from the agency will be provided to the Commission.

The additional route modifications made in February, 2011, and discussed in Sections B.1 and B.2 above are not expected to materially change the results of the Natural Resources Report regarding threatened and endangered resources. Nevertheless, Barr on behalf of Rangeland Pipeline will communicate these changes to the USFWS and confirm that the Project will not impact protected species.

4. Woody Vegetation

In October, 2010, Barr directed a survey of the trees, saplings, and shrubs within the Project route on behalf of Rangeland Pipeline. The results are documented in:

> Binstock, L. and M. Cook. January 2011. *Natural Resources and Wetland Determination Report for the COLT Connector Pipeline, Williams County, North Dakota*. SWCA Environmental Consultants. Bismarck, North Dakota.

A copy of the report is included in Appendix E. Rangeland Pipeline intends to use the information in the report to determine mitigation for trees and shrubs according to Commission requirements.

As a result of the additional route modifications made in February, 2011, and discussed in Sections B.1 and B.2 above, SWCA on behalf of Rangeland Pipeline will revisit the areas that are outside of the October, 2010 tree and shrub count survey corridor and will update the number of trees and shrubs that will be removed during Project construction and replaced in accordance with Commission requirements.

1. Analysis of Need Based on Present and Projected Demand, Including System Studies

The existing pipeline infrastructure in North Dakota, Montana, and Wyoming is at capacity. Average individual well production in both North Dakota and Montana has increased as a result of advances in drilling technology and overall production has grown exponentially since 2005. In North Dakota, production is approaching 400,000 barrels per day as shown in Figure 1, North Dakota Crude Oil Production (from a presentation by the North Dakota Pipeline Authority on December 30, 2010).

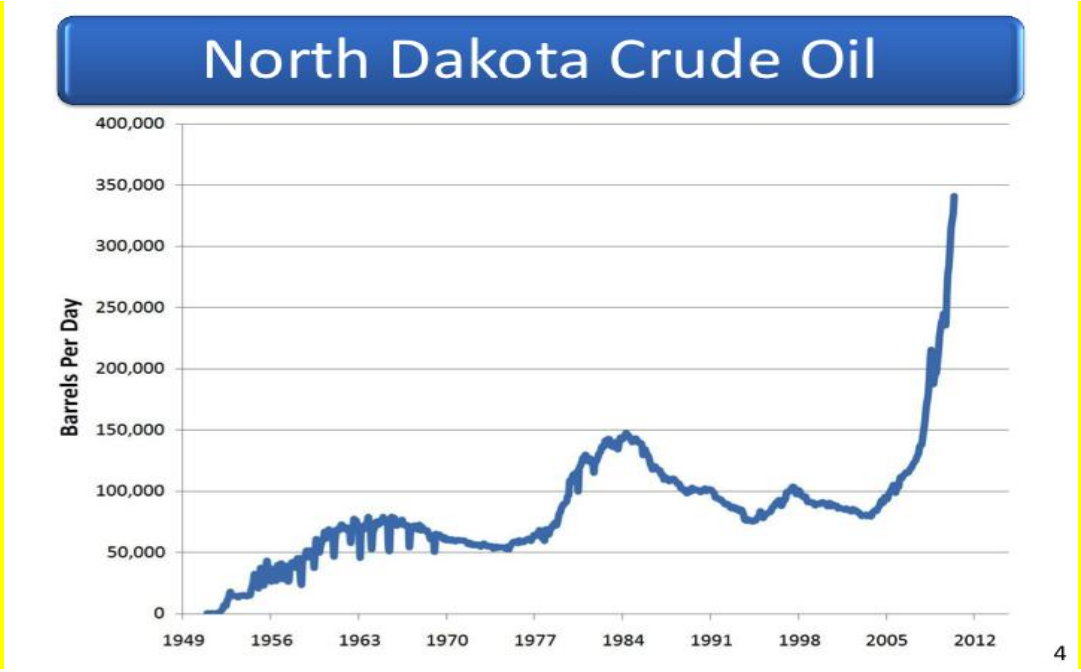


Figure 1. North Dakota Crude Oil Production

As a result of the rapid increase in production, pipeline capacity to traditional Bakken markets (Guernsey, WY and Clearbrook, MN) are at capacity. This lack of capacity on existing pipelines has resulted in price volatility and steep discounts to Bakken crude compared to West Texas Intermediate (WTI) crude of between $8 and $20 per barrel. To address this issue, a number of pipeline and rail projects have been proposed to increase capacity to Guernsey, Clearbrook and non-traditional Bakken markets such as the Gulf Coast. See Figure 2, Williston Basin Oil Production and Export Capacity (from a presentation by the North Dakota Pipeline Authority on December 30, 2010). The

COLT Connector provides a safe and economic method for transporting crude oil to this incremental export capacity.

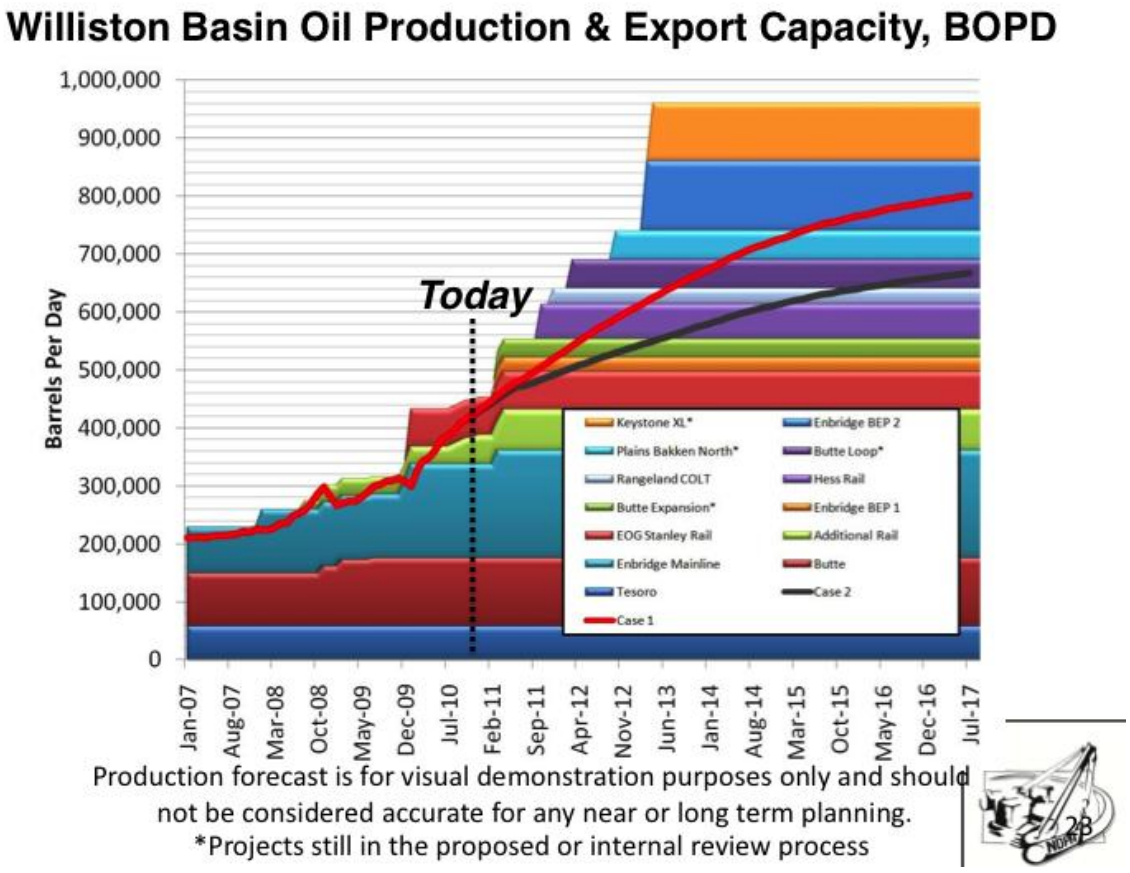


Figure 2. Williston Basin Oil Production and Export

Rangeland Pipeline's proposed Project will provide a means for crude oil production in Williams and surrounding counties to access the Enbridge and Tesoro transmission pipelines near Tioga, North Dakota. Small to medium sized producers will be provided an additional outlet for getting crude oil to market, and producers who are faced with longer truck hauls to the upstream Enbridge pipeline entry point at Trenton could avail themselves of reduced haul distances and lowered costs by utilizing the proposed Project to deliver their volumes from Rangeland Terminals' COLT Hub to the Enbridge and Tesoro transmission pipelines.

2. Description of Feasible Alternative Methods of Serving the Need

There are two potential alternatives to the proposed pipeline that could be utilized to transport crude oil between the origin and delivery ends of the proposed Project: trucks or railcars. However, neither is a feasible alternative in this instance.

With respect to trucks, Beaver Lodge Station lacks real estate for both unloading facilities and additional tanks to support the number of trucks necessary to move this quantity of incremental crude oil production on a reliable and ratable basis. Currently, the average number of trucks handled at Beaver Lodge exceeds 200 per day and is projected to approach 300 per day. So, trucking further incremental crude oil production will result in increased truck traffic and longer hauls and more delays at the unloading rack, which can be labor intensive and cost prohibitive.

Trucking costs escalate sharply with distance, making trucking the most expensive mode of petroleum transportation. In addition, the logistics of truck transport for high volume-long distance shipments are impractical. Assuming each truck holds 200 barrels (8,400 gallons) and can travel up to 500 miles per day, it would take a fleet of over 200 trucks making 4 roundtrips daily, with one truck arriving and unloading every 20 minutes, to replace the proposed 45,000 barrels per day, 20-mile-long pipeline. Thus, while trucks could be used, trucking is a less efficient means of transporting crude oil to interstate markets.

While railroad tank car costs do not rise as sharply as trucks with distance traveled, their costs are also greater than pipeline transportation. Replacing the same 45,000 barrel per day pipeline with a train of 600-barrel tank cars would require a 75-car train to arrive and be unloaded every day, again returning to the source empty, along separate tracks, to be refilled. Furthermore, the rail logistics involved in moving this quantity of crude oil the additional 20-mile distance makes this mode of transportation impractical. For this reason, the combination of Rangeland Terminals' proposed COLT Hub, which will include a rail loading facility, and the COLT Connector Project that is the subject of this application, will offer local producers an efficient alternative for getting their crude oil to market.

3. Statement Justifying Deviations from the Most Recent Ten-Year Plan

Rangeland Pipeline's parent company, Rangeland Energy, filed its Ten-Year Plan for 2011-2021 with the Commission on January 18, 2011 (*see* Case No. PU-11-042). The proposed Project is consistent with Rangeland Energy's Ten-Year Plan.

Section D: Location

1. Study Area

Rangeland Pipeline defined its study area as the certificated corridor of the existing Enbridge Trenton to Beaver Lodge 10-inch-diameter pipeline. Rangeland Pipeline is proposing to install the proposed pipeline generally adjacent to the existing Enbridge pipeline from Rangeland Terminals' COLT Hub at Epping to Enbridge and Tesoro delivery points at Beaver Lodge. Rangeland Pipeline has identified a few locations where environmental or constructability issues appear to warrant minor variations from paralleling the route utilized by Enbridge. These variations are limited in number and scope, and most are within 50 to 1,000 feet of the existing Enbridge pipeline.

The two main benefits of installing the new pipeline adjacent to the existing pipeline are: (1) it would reduce the overall size and cost of the Project by allowing Rangeland Pipeline to utilize existing offloading and delivery points at the Beaver Lodge end of the proposed pipeline route; and (2) it would minimize the impacts on landowners and environmental resources by siting the Project within or adjacent to existing easements of an already disturbed utility corridor. For these reasons, Rangeland Pipeline defined its study area and corridor for the proposed Project as the corridor approved for the Enbridge 10-inch pipeline in Certificate of Corridor Compatibility for Transmission Facility Certificate Number 94 issued in Case No. PU-06-330, and has requested a waiver of the corridor width requirement set forth in Section 69-06-04-02(1)(b) of the North Dakota Administrative Code (*see* Waiver Request provided with this application).

2. Criteria to be Evaluated

The criteria to be evaluated shall include at a minimum all of the following which are within the study area:

a. Exclusion Areas

Exclusion areas are areas excluded in the consideration of a route for a transmission facility as described in Chapter 69-06-08-02(1) of the North Dakota Administrative Code.

b. Avoidance Areas

Avoidance areas are areas that are not considered in the routing of a transmission facility unless there is no reasonable alternative as described in Chapter 69-06-08-02(2) of the North Dakota Administrative Code.

c. Selection Criteria

Selection criteria are those environmental resources on which the Project must have an acceptable minimum amount of impact, as determined by the Commission and as described in Chapter 69-06-08-02(3) of the North Dakota Administrative Code.

d. Policy Criteria

Policy criteria are those factors positively affected by a project that may lead the Commission to give preference to an applicant as described in Chapter 69-06-08-02(4) of the North Dakota Administrative Code.

e. Design and Construction Limitations

For additional information regarding design and construction limitations, refer to Sections A.3 and D.1 of the Certificate of Corridor Compatibility Application and Section B.14 of the Route Permit application.

Design, construction and operation of the pipeline and related facilities will be in accordance with U.S. Department of Transportation regulations governing the transportation of hazardous liquids. These regulations are prescribed under Part 195 of Title 49 of the Code of Federal Regulations, Transportation of Hazardous Liquids by Pipelines.

Rangeland Pipeline defined its study area as the certificated corridor of the existing Enbridge Trenton to Beaver Lodge 10-inch-diameter pipeline. Rangeland Pipeline is proposing to install the proposed pipeline generally adjacent to the existing Enbridge pipeline from Rangeland Terminals' COLT Hub at Epping to Enbridge and Tesoro delivery points at Beaver Lodge. Rangeland Pipeline has identified a few locations where environmental or constructability issues appear to warrant minor variations from paralleling the route utilized by Enbridge. These variations are limited in number and scope, and most are within 50 to 1,000 feet of the existing Enbridge pipeline.

f. Economic Considerations

Crude oil is North Dakota's leading mineral product, and North Dakota is currently the fourth largest producer of crude oil in the country. The proposed Project would supplement the capacity needed in North Dakota pipelines to continue to export growing volumes of crude oil and increase outbound capacity thus improving netbacks at the wellhead, boost the economy, and allow the state to capitalize on tax revenue gathered from increased production and extraction taxes. For example, Rangeland Pipeline's proposed Project will contribute the following economic benefits to local and state economies:

- local workers would be hired for a period of up to four months on this Project;
- Project payrolls would result in an increase in income tax revenue for the state;
- state and local governments would realize additional tax revenue from retail purchases by temporary workers;
- state and local governments would realize additional sales tax revenue from the purchase of local materials;
- Rangeland Pipeline's sales/use tax obligation would benefit local governments; and
- during operation of the pipeline, Rangeland Pipeline would pay *ad valorem* taxes to local governments crossed by the proposed pipeline.

3. Identify and Map Criteria

Maps illustrating the location of exclusion and avoidance areas within the proposed corridor and along the proposed route are included in Appendix F. Maps addressing other selection and siting criteria, such as land use, are located in Appendices G and H.

4. Discussion of the Relative Value of Each Criteria and Corridor Selection

a. Exclusion Areas

Exclusion areas are geographical areas that shall be excluded in the consideration of a route for a transmission facility. The following table and text identify and discuss exclusion areas within the proposed corridor and along the proposed route. Maps illustrating the location of exclusion areas within the proposed corridor and along the proposed route are included in Appendix F.

Table 1 Exclusion Areas

Exclusion Area	Within Proposed Corridor	Crossed by Proposed Route
a. Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas.	No	No
b. Designated or registered state: parks; historic sites; monuments; historical markers; archaeological sites; and nature preserves.	No	No
c. County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions.	Yes	No

Exclusion Area	Within Proposed Corridor	Crossed by Proposed Route
d. Areas critical to the lifestages of threatened or endangered animal or plant species.	No	No
e. Areas where animals or plant species that are unique or rare to this state would be irreversibly damaged.	No	No

i. Designated or Registered National: Parks; Memorial Parks; Historic Sites and Landmarks; Natural Landmarks; Monuments; and Wilderness Areas

No designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments, or wilderness areas are present within the proposed corridor or route. The only such exclusion area in Williams County is the Fort Union Trading Post, about 35 miles southwest of the proposed corridor, which is a registered national historic site and national historic landmark. Although considered, this exclusion area was not a significant factor in selecting the proposed corridor or route.

ii. Designated or Registered State: Parks; Historic Sites; Monuments; Historical Markers; Archaeological Sites; and Nature Preserves

No designated or registered state parks, historic sites, monuments, historical markers, archaeological sites or nature preserves are present within the proposed corridor or route. The nearest such exclusion area in Williams County is a state historical marker identifying the first oil well in North Dakota, which is about one-half mile south of the proposed corridor. Although considered, this exclusion area was not a significant factor in selecting the proposed corridor or route.

iii. County Parks and Recreational Areas; Municipal Parks; and Parks Owned or Administered by Other Governmental Subdivisions

No county parks or recreational areas are present within the proposed corridor or crossed by the proposed route. One municipal park was identified within the proposed corridor: City Park. City Park is in the City of Epping and is known as Tireville by local residents. The park occupies about one-quarter city block and consists of a slide, swing set, sand box, picnic tables, and restrooms. City Park is about one-half mile south of the proposed route, near the southern edge of the proposed corridor.

Construction of the proposed pipeline would not affect City Park. Although considered, this exclusion area was not a significant factor in selecting the proposed corridor or route.

iv. Areas Critical to the Life Stages of Threatened or Endangered Animal Plant Species

No areas critical to the lifestages of threatened or endangered animal or plant species were identified within the proposed corridor or the proposed route. On December 20, 2010, Barr on behalf of Rangeland Pipeline sent a letter to the USFWS introducing the Project and asking for comments. The USFWS has not yet responded.

The Natural Resources and Wetland Determination Report (Appendix F) provides information on habitats present along the Project corridor. In particular, the report addresses the presence of Designated Critical Habitat for the piping plover (*Charadrius melodus*, Federally-Threatened), which occurs along the shorelines of Lake Sakakawea in Williams County. This habitat will not be impacted by the Project so there will be no effect to the critical habitat. Barr will provide a copy of this report to the USFWS asking for that agency's concurrence in the assessment that the proposed Project will not affect critical habitat. All correspondence with the USFWS will be provided to the Commission as it is received. Although considered, this exclusion area was not a significant factor in selecting the proposed corridor or route.

v. Areas Where Animals or Plant Species that are Unique or Rare to this State would be Irreversibly Damaged

No areas where animals or plant species that are unique or rare to the state would be irreversibly damaged were identified within the proposed corridor or route. On December 20, 2010, Barr on behalf of Rangeland Pipeline sent a letter to the North Dakota Game and Fish Department (NDGFD) to determine whether the proposed Project would have significant adverse effects on unique or rare animal or plant species. A letter dated January 14, 2011, from the NDGFD did not identify any unique or rare animals or plant species or their habitats and did not identify any species of concern or conservation priority.

A copy of this correspondence is included in Appendix C. Although considered, this exclusion area was not a significant factor in selecting the proposed corridor or route.

b. Avoidance Areas

Avoidance areas are geographic areas that shall not be considered in the routing of a transmission facility unless the applicant shows that under the circumstances there is no reasonable alternative.

The following table and text identify and discuss avoidance areas within the proposed corridor and along the proposed route. Maps illustrating the location of avoidance areas within the proposed corridor and along the proposed route are included in Appendix F.

Table 2 Avoidance Areas

Avoidance Area	Within Proposed Corridor	Crossed by Proposed Route
a. Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands.	No	No
b. Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands.	No	No
c. Historical resources which are not specifically designated as exclusion or avoidance areas.	No	No
d. Areas which are geologically unstable.	No	No
e. Within five hundred feet [152.4 meters] of a residence, school, or place of business.	Yes	Yes
f. Reservoirs and municipal water supplies.	Yes	No
g. Water sources for organized rural water districts.	No	No
h. (Irrigated land – does not apply to an underground transmission facility.)	No	No
i. Areas of recreational significance which are not designated as exclusion areas.	No	No

i. *Designated or Registered National: Historic Districts; Wildlife Areas; Wild, Scenic, or Recreational Rivers; Wildlife Refuges; and Grasslands*

No designated or registered national historic districts, wildlife areas, wild, scenic, or recreational rivers, wildlife refuges, or grasslands are present within the proposed corridor or route. Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

ii. *Designated or Registered State: Wild, Scenic, or Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forests; Forest Management Lands; and Grasslands*

No state-registered or state-designated, wild, scenic, or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands, or grasslands are present within the proposed corridor or route. It should be noted that there are five designated state game management areas (also known as wildlife management areas) in Williams County, but the nearest of these is the Trenton Wildlife Management Area, which is about 5 miles to the southwest of the proposed corridor. Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

iii. *Historical Resources that are not Specifically Designated as Exclusion or Avoidance Areas*

A review of the Project study area identified several potential historical resources, which are not specifically designated as exclusion or avoidance areas, within the proposed corridor. There are numerous archaeological sites in Williams County. In 2010, SWCA on behalf of Barr and Rangeland Pipeline completed a Class I literature search of the proposed corridor and, based on the results of this search, conducted a Class III inventory on those segments of the proposed route likely to contain cultural resources. Rangeland Pipeline did not complete a Class III reconnaissance inventory of the entire 1-mile-wide corridor because there are no plans to disturb areas beyond the proposed construction right-of-way.

Based on the Class I literature search of the proposed corridor, there are 112 previously recorded cultural resources within the 1-mile corridor. The Class III inventory identified one previously-recorded site and one newly recorded site within the proposed route. Neither of these two sites has been formally evaluated by the SHPO to determine eligibility for listing on the National Register of Historic Places (NRHP).

The newly identified site is recommended as not eligible for NRHP listing, meaning the site is not significant to the history or pre-history of the state or community. In any event, this site will be avoided by construction activities if the proposed route is approved. Rangeland Pipeline is consulting with the SHPO on these recommendations and its proposed approach for constructing near this site and the SHPO's concurrence is expected prior to construction.

No eligibility recommendation was made regarding the previously-identified site, and further investigation is also not recommended. The significance of this site and its value to the history and pre-history of the state and community have not yet been established. Therefore, Rangeland Pipeline's proposed route and construction work areas have been configured to avoid this site. Rangeland Pipeline will also maintain a 50-foot buffer zone around the site to minimize the risk of inadvertent disturbance during construction. The proposed route is still within the 200-foot-wide survey corridor thereby avoiding the need for subsequent field reviews in this area. On January 26, 2011, SWCA Environmental Consultants on behalf of Barr and Rangeland Pipeline provided the report to the SHPO. On January 27, 2011, the SHPO notified SWCA that it concurred in the report's determinations of "no significant sites affected" and "no historic properties affected," "provided the project is of the nature stated, it takes place in the plotted and mapped location, and that site 32WI961 is avoided from impacts as recommended…in the report."

There is always potential during construction to encounter previously unknown cultural resources or human remains. Rangeland Pipeline is developing an Unanticipated Discoveries Plan and will submit the proposed plan to the SHPO for review and approval and will implement the approved plan during Project construction. Upon approval by the SHPO, the Unanticipated Discoveries Plan will be provided to the Commission upon SHPO approval. Among other things, the Unanticipated Discoveries Plan will include mitigation measures that would minimize the potential impacts on unanticipated discoveries. For instance, Rangeland Pipeline would:

- immediately stop work in the vicinity of an unanticipated discovery of cultural resources or human remains and notify appropriate personnel at the SHPO, North Dakota State Health Department (NDDH), and/or law enforcement; and
- prohibit work in the vicinity of the unanticipated discovery until all appropriate contacts, consultations, evaluations, disposition, treatments, and authorizations have been obtained.

iv. *Areas that are Geologically Unstable*

There are three types of geologic instabilities (or hazards) that are a concern to pipelines: earthquakes, landslides, and sinkholes. None of these hazards are a concern for the proposed Project.

<u>Earthquakes</u>

Earthquakes, including related hazards such as soil liquefaction, are not considered to be a significant risk in North Dakota. No earthquakes of a magnitude capable of damaging a welded steel pipeline

have occurred within North Dakota during historical times. This type of avoidance area was not a factor in selecting the proposed corridor or route.

Landslides

Landslides pose a potential risk in certain parts of Williams County. According to state geologic hazard maps, most landslides in Williams County occur on steep slopes adjacent to streams and rivers. No landslides have occurred in the vicinity of the proposed Project. The proposed pipeline route is located away from steep slopes along waterbodies. These avoidance areas were not significant factors in selecting the proposed corridor or route.

Sinkholes

Sinkholes are considered a geologic hazard in parts of North Dakota. Sinkholes are more common in areas where coal mining occurred beneath soft sediments. There are no active coal mines in Williams County, and no known abandoned coal mines near the proposed Project route.

Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

v. *Areas Where the Pipeline would be Within Five Hundred Feet of a Residence, School, or Place of Business*

No schools, one place of business, and 11 occupied (not abandoned) residences were identified within the proposed corridor. Of these structures, no schools, one business, and five residences are within 500 feet of the proposed route.

Schools

No schools are within 500 feet of the proposed route or within the corridor.

Business

Rangeland Pipeline is proposing to construct the proposed Project within 500 feet of one business: a feed lot which is located about 300 feet south of the proposed route in Section 5, Township 155 North, Range 96 West. The feed lot is on the opposite side of 60th Street Northwest and would be buffered from construction by the road. Rangeland Pipeline is seeking a waiver from the owner of

this business in accordance with Chapter 69-06-08-02(2)(e) of the North Dakota Administrative Code.

Residences

Rangeland Pipeline is also proposing to construct its pipeline within 500 feet of five residences:

1. Residence 1: Located in Section 31, Township 156N, Range 98W, about 200 feet south of the proposed route;
2. Residence 2: Located in Section 2, Township 155N, Range 98W, about 380 feet south of the proposed route on the opposite side of 60th Street Northwest;
3. Residence 3: Located in Section 1, Township 155N, Range 97W, about 340 feet south of the proposed route on the opposite side of 60th Street Northwest;
4. Residence 4: Located in Section 32, Township 156N, Range 96W, about 420 feet north of the proposed route; and
5. Residence 5: Located in Section 5, Township 155N, Range 95W, about 260 feet south of the proposed route.

Rangeland Pipeline is proposing to keep the proposed pipeline adjacent and parallel to the existing Enbridge pipeline to the extent possible. One exception is at Residence 1 where the route has been shifted away from a true parallel with the Enbridge pipeline in order to avoid impacts to the homestead's forested windbreak. Landowners along the route have generally expressed a preference for keeping the lines close together because doing so would minimize the total amount of land burdened by a pipeline easement, and pipeline easements limit a landowner's full use of the land by restricting activities such as erecting structures and/or planting trees within the easement. Rangeland Pipeline's proposed route will avoid direct impacts to these residences. In each case where a residence is within 500 feet of the proposed pipeline route, Rangeland Pipeline is seeking waivers from those landowners in accordance with Section 49-22-05.1 of the North Dakota Century Code and Chapter 69-06-08-02(2)(e) of the North Dakota Administrative Code.

vi. *Reservoirs and Municipal Water Supplies*

No public water reservoirs or municipal water supplies were identified within the proposed corridor or route. The nearest public reservoir is the Springbrook reservoir, which is more than one-half mile south of the proposed corridor. The nearest municipal water supply is a well about 3 miles north and is owned by the City of Ray. The well, which is in the Ray aquifer of the Lake Sakakawea drainage

basin, is 169 feet deep. Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

vii. *Water Sources for Organized Rural Water Districts*

No water sources for organized rural water districts were identified within the proposed corridor or route. The only rural water district within the proposed corridor is the Williams Rural Water District. The district purchases its waters from the City of Williston, which obtains its water from Lake Sakakawea. Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

viii. *Irrigated Land*

According to Section 69-06-08-012(h) of the North Dakota Administrative Code, this section does not apply to underground transmission facilities such as the proposed pipeline. Other than the proposed mainline block valve, aboveground facilities (*i.e.*, pump and meter station, pig launcher and receiver, and meter station) associated with the pipeline would be installed within or immediately adjacent to existing aboveground facilities.

ix. *Areas of Recreational Significance that are not Designated as Exclusion Areas*

No areas of recreational significance which are not designated as exclusion areas were identified within the proposed corridor or route. Although considered, this avoidance area was not a significant factor in selecting the proposed corridor or route.

c. Selection Criteria

Selection criteria are those environmental resources on which the Project must have an acceptable minimum amount of impact, as determined by the Commission.

i. *The Impact upon Agriculture*

1. Agricultural Production

Agriculture is the predominant land use within the proposed corridor and along the proposed route. Agricultural land use comprises about 7,977 acres (62.6 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 135 acres of cropland crossed by the proposed route. Maps in Appendix G illustrate the location of agricultural land within the proposed corridor and along the proposed route.

The effects of construction on agriculture would be minor and short-term. The primary impact would be the loss of standing crops within the construction work area for the growing seasons during which Project-related activities occur. It is possible for construction to result in soil compaction; mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; the introduction of weeds; and damage to irrigation and drainage systems. These impacts can lower soil productivity and reduce crop yields following construction.

Permanent impacts on agriculture production are not anticipated. Rangeland Pipeline would bury the pipeline deeper than typical tillage depths – a minimum of 48 inches depth of cover – to allow continued use of the land. Following construction, Rangeland Pipeline would restore the right-of-way to its pre-construction contours and stabilize the ground until the next growing season. Planting and harvesting would be allowed to continue over the permanent right-of-way.

The U.S. Department of Agriculture, Natural Resource Conservation Service has defined prime farmland and farmland that is of statewide or local importance as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops. These designations include cultivated land, pasture, woodland, and other land that is either used for food or fiber crops or are available for these uses. Urbanized land and open water are generally excluded from prime farmland and farmland that is of statewide or local importance.

Prime farmland and farmland that is of statewide or local importance typically contains few or no rocks; is not subject to excessive erosion; is relatively permeable to air and water; and is not subject to prolonged periods of flooding during the growing season. Soils that do not meet these criteria may be considered prime or important farmland if the limiting factor is mitigated (*e.g.* artificial drainage).

The Natural Resource Conservation Service (NRCS) defines the specific criteria for determining prime farmland. State and local government agencies define the criteria for determining farmland that is of statewide or local importance.

Prime farmland and farmland that is of statewide or local importance, both categories of land based on soil type, topography, climate, and other factors, comprise up to 8,238 acres of the proposed corridor (see Appendix G). Actively cultivated farmland comprises 7,977 acres of the total 8,238 acres of prime farmland and farmland of statewide or local importance within the proposed corridor. Construction of the proposed Project would temporarily affect approximately 136 acres of prime farmland or farmland that is of statewide or local importance, of which approximately 135 acres is actively cultivated farmland.

A number of factors used to designate prime farmland and farmland that is of statewide or local importance would not be affected by the proposed Project. For example, rainfall and the length of the growing season would not change. Criteria that could be affected by the proposed Project are mainly related to soil productivity and are the same as those discussed for agriculture production. For example, it is possible for construction to result in soil compaction; mixing of topsoil and subsoil, including introduction of rocks into the topsoil from the subsoil; erosion; introduction of weeds; and damage to irrigation and drainage systems.

The actual effects of the proposed Project on prime farmland and farmland that is of statewide or local importance varies by the actual land use and/or land cover affected. For example, effects on actively cultivated land are different than uncultivated land. On actively cultivated land, Rangeland Pipeline would utilize the double ditching method and strip topsoil up to 12 inches deep along the trenchlines and segregate it from excavated subsoil so that there would be only minor, short-term impacts on the land. Where land is used for other purposes, Rangeland Pipeline would implement other mitigation measures suitable to the current land use and/or land cover. For example, Rangeland Pipeline would implement the measures discussed in Section D.2.c.i.2 on land used for grazing. Additionally, if construction activities were to adversely affect soil productivity in prime or important farmland, productivity could be reestablished by mitigating for the limiting factors in the future.

Long-term impacts on prime farmland and farmland that is of statewide or local importance would be minor. Following construction, the work area would be restored to its pre-construction condition and stabilized. Future drain and irrigation systems would be allowed on the permanent right-of-way in accordance with specifications that allow for the safe and continued use of the pipeline. The only permanent impact would be the conversion of prime or important farmland to an industrial use where surface facilities are installed. With the exception of the proposed mainline block valve west of Beaver Creek near MP 13.5, all surface facilities would be installed within or adjacent to the fenced boundaries of existing facilities. Construction of the block valve would permanently impact less than one-tenth of an acre of cultivated prime farmland.

Rangeland Pipeline is proposing to implement mitigation measures to minimize the potential for short-term impacts on agriculture productivity. Rangeland Pipeline would:

- bury the pipeline deeper than typical tillage depths to allow continued use of the land for agriculture after construction;

- clean heavy equipment that is capable of transporting weed propagules or soil pests prior to use on the Project;
- prohibit construction during periods of prolonged, heavy rainfall to minimize the potential for soil compaction and reduced soil productivity;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or using other methods approved by the landowner or land management agency) where compaction has been shown to have been caused by construction;
- in active croplands, strip and segregate the existing topsoil from the subsoil, up to 12 inches or to the depth of cultivation, from over the trenchline (double ditching method) in order to maintain topsoil integrity, minimize subsoil mixing, and minimize impacts on soil productivity;
- strip and segregate the existing topsoil from the subsoil in areas where topsoil stripped from the trenchline will be stored, except along segments of the pipeline that will use the double-ditching construction method;
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (*e.g.*, slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss and other associated damages for the year of construction;
- coordinate with landowners to assess crop productivity following construction and provide compensation where crop yields show decline as a result of pipeline construction activities;
- coordinate the interruption of irrigation and drainage systems with each landowner and compensate the landowner for damages and lost production that result from interruption of irrigation and/or drainage due to construction activity;
- repair, replace, or compensate landowners where irrigation and/or drainage systems are damaged by construction; and
- compensate landowners for a permanent easement on their property.

2. Family Farms and Ranches

Family farms and ranches are prevalent within the proposed corridor and near the proposed route. Rangeland Pipeline estimates that as many as 32 family farms and ranches are within the proposed corridor, with up to 24 crossed by the proposed route.

The effects of construction on family farms and ranches would be minor and short-term. The primary impact on family farms would be the loss of standing crops within the work area for the growing seasons during which construction related activities occur, as well as potential diminished yields for a few years following construction. Rangeland Pipeline would mitigate these temporary effects by following the measures listed in Section D.2.c.i.1.

The primary impact on family ranches would be prohibition of livestock grazing within the construction workspace and encumbrances on livestock movement across the construction workspace during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline parallel to property boundaries, livestock grazing reductions and livestock movement encumbrance would be minor. Rangeland Pipeline would coordinate construction activities with landowners along the proposed route to minimize any encumbrances on livestock operations.

Long-term or permanent impacts on family farms and ranches are not anticipated. Following construction, the work area would be restored and farming and ranching would be allowed to continue over the permanent right-of-way. Although grazing would be deferred where practical in disturbed areas until right-of-way vegetation becomes reestablished, landowners would be compensated for temporary loss of land use. Grazing would return to normal after revegetation.

Rangeland Pipeline is proposing to implement mitigation measures to minimize the potential for short-term impacts on livestock grazing and movement. Rangeland Pipeline would:

- make arrangements with landowners to keep livestock in fields not affected by the proposed Project where practical;
- cut and brace fences crossed by the proposed pipeline in a manner to prevent slack, and install gates across the opening to prevent livestock passage, if required;
- install temporary fences as necessary to prevent livestock from entering the construction area;
- in active croplands, strip and segregate the existing topsoil from the subsoil, up to 12 inches or to the depth of cultivation, from over the trenchline (double ditching method) in order to

maintain topsoil integrity, minimize subsoil mixing, and minimize impacts on soil productivity;

- strip and segregate the existing topsoil from the subsoil in areas where topsoil stripped from the trenchline will be stored, except along segments of the pipeline that will use the double-ditching construction method;
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling to the extent practicable;
- restore the work area to its pre-construction contours to the extent practicable and reseed with mixtures approved by the landowner, or by the NRCS in the event of Conservation Reserve Program (CRP) lands or no landowner preference, or other agency recommendations;
- where practical, defer grazing in the area until right-of-way vegetation becomes reestablished;
- compensate landowners for temporary loss of land use; and
- compensate landowners for a permanent easement on their property.

3. Land which the Owner Can Demonstrate has Soil, Topography, Drainage, and an Available Water Supply that Cause the Land to be Economically Suitable for Irrigation.

In addition to impacts on actively cultivated fields, the Project could impact land capable of supporting future cultivation by the use of irrigation. This includes land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation. In general, the land in the Project corridor is not suitable for irrigation because the primary source for irrigation water, the Ray Aquifer, is too saline for crop production. Other suitable sources of irrigation water, such as Lake Sakakawea, are too far away to make irrigation cost effective or are subject to prior appropriation.

4. Surface Drainage Patterns and Ground Water Flow Patterns

Surface Drainage

The proposed corridor and route are located within the ecoregion known as the Missouri Coteau Slope of the Northwestern Glaciated Plains, which marks the westernmost extent of continental glaciation. The landscape in this area slopes downward from the Missouri Coteau to the north toward the Missouri River to the south. The topography is typical of a glaciated plain with poorly-

defined drainage patterns and irregular, undulating slopes. The dominant drainage feature crossed by the proposed route is Beaver Creek, which meanders across the route at several locations. Numerous intermittent drainages are also crossed.

Construction of the proposed pipeline would not significantly impact Beaver Creek, intermittent drainages, or the geologic or physiographic conditions of the area. Rangeland Pipeline is proposing to cross Beaver Creek using horizontal directional drilling. Horizontal directional drilling involves drilling a hole under the creek and installing a prefabricated segment of pipe through the hole. Horizontal directional drilling is designed to avoid disturbing the bed or banks of the creek, and should have no effects on surface drainage, as the surface between the entry and exit points of the drill segment are not impacted by construction activities.

Rangeland Pipeline is proposing to cross other drainages using open-cut construction. Open-cut construction involves trenching through the drainage in a manner similar to upland construction. Construction effects on surface drainage patterns would include temporary disturbances to the natural topography; however, Rangeland Pipeline is proposing to restore the Project area to its pre-construction contours following construction and long-term impacts are not anticipated.

Groundwater

Groundwater aquifers within the Project area include bedrock and glacial drift aquifers. Bedrock aquifers are generally found at a depth of 5,000 feet and are not suitable for human or livestock consumption or irrigation because of large amounts of dissolved solids in the water, including potash and sodium chloride.

One glacial drift aquifer is crossed by the proposed Project: the Ray aquifer. Maps in Appendix J illustrate the location of this aquifer. The Ray aquifer is found at depths ranging from a few feet to more than 500 feet and is known to yield from 50 to 500 gallons per minute. The water quality of the Ray aquifer is generally considered to be marginal because of high saline content. The City of Ray owns a municipal water well about 3 miles to the north of the proposed corridor within the Ray aquifer (see Section D.2.b.vi).

Ground disturbance associated with pipeline construction is generally limited to 6 feet or less below the existing ground surface, except where horizontal directional drilling is proposed. Where horizontal directional drilling is proposed, the pipeline may be installed as deep as 50 feet. Most construction would be above glacial drift aquifers and wells in the area. Nevertheless, construction

activities such as trenching, blasting, drilling, dewatering, and backfilling could encounter shallow aquifers and cause minor fluctuations in groundwater levels and/or increased turbidity within the aquifer adjacent to the activity. Impacts on deeper aquifers are not anticipated. Since most shallow aquifers exhibit rapid recharge and groundwater movement, shallow aquifers would quickly reestablish equilibrium if disturbed, and turbidity levels would rapidly subside. Consequently, the effects of construction would be minor and short term.

There is a potential for groundwater contamination from accidental spills during vehicle refueling and maintenance; from other potential hazardous material spills that occur during construction; and from the potential disturbance of existing contaminated soils. The deterioration of groundwater quality by such factors could adversely affect groundwater. Rangeland Pipeline is proposing to implement mitigation measures to minimize the potential for accidental spills or disturbance of contaminated soils during construction. Rangeland Pipeline would:

- Obtain a National Pollutant Discharge and Elimination System (NPDES) permit from the NDDH and prepare a Stormwater Pollution Prevention Plan (SWPPP);
- prepare and implement a spill prevention, control, and countermeasure plan that describes procedures that would be followed to prevent, control, report, and clean up spills, including requirements for employee training, spill response equipment, equipment inspection, fuel dispensing, and fuel storage; and
- notify the affected landowner and coordinate with the appropriate federal and state agencies as mandated by law if contaminated soil and/or groundwater are encountered during construction.

ii. *The Impact Upon:*

1. Noise Sensitive Land Uses

A review of the Project study area identified four types of noise sensitive areas and land uses within the proposed corridor and crossed by the proposed route: residences, places of business, grazing, and hunting. A total of 11 residences, no schools, and 1 place of business are within the proposed corridor. Five residences, no schools, and one business are within 500 feet of the proposed route (see Appendix F). Grazing and hunting occur throughout the corridor and along the proposed route.

The proposed corridor and route are located in a predominantly rural setting characterized by an inherently low ambient noise level. Most of the noise generated in any given area is due to human

activity, mainly vehicle traffic. Lesser amounts of noise can be attributed to natural causes, such as wind, birds, and insects.

Noise sensitive receptors located close to or moving through the active construction activity areas would be exposed to temporary increases in noise, primarily in the form of heavy equipment. People living, working, teaching, learning, hunting, or otherwise occupying areas near the work area may temporarily experience higher noise levels during construction, and livestock and wildlife may temporarily relocate to adjacent areas. The effects of noise would be diminished where the Project is adjacent to 60th Street Northwest and other roads (about 18 miles or 90 percent of the proposed route) because these areas already experience increased noise levels from traffic. To minimize the impacts of construction noise on local residents and land uses, construction activities are typically restricted to daylight hours. At all times, Rangeland Pipeline will follow applicable OSHA noise guidelines for temporary and permanent pipeline activities.

One new, permanent noise source is being proposed as part of this Project. A new pump and meter station will be built within Rangeland Terminals' COLT Hub, but is not expected to be a major contributing factor to increased noise in the Project area because the COLT Hub is a transportation terminal and will include some rail, truck, and other vehicular traffic noise.

2. The Visual Effect on the Adjacent Area

A review of the Project study area did not identify any designated scenic outlooks or viewing areas within the proposed corridor or crossed by the proposed route.

The proposed corridor and route traverse a landscape consisting primarily of grasslands and agricultural fields where the line of sight is broken only by rolling hills and the occasional wooded area or building. Viewing opportunities of the proposed Project are greatest from the tops of hills and where residences and places of business are within sightlines of the proposed pipeline. Viewing opportunities are also present where the corridor parallels or crosses roads.

To minimize impacts on visual resources, Rangeland Pipeline aligned the proposed pipeline adjacent to an existing pipeline along a majority of the route. This alignment minimizes impacts on visual sightlines and contrasts with adjacent vegetation communities. Visual effects would be greatest during active construction during which time heavy equipment, open trenches, and spoil piles would change the colors and textures of the landscape. The duration of visual impacts would be relatively

short as the reestablishment of vegetation on grasslands and agricultural land following construction would be relatively fast.

The only permanent impact on visual resources would be installation of new surface facilities, such as pig launchers and receivers, meter station, pump station, and a block valve. The visual effect of installing new surface facilities along the proposed route would be minor. With the exception of the proposed mainline block valve west of Beaver Creek, all surface facilities would be installed within or adjacent to the fenced boundaries of existing facilities.

The visual effect of clearing wooded areas on this Project would also be minor. The only wooded areas within the proposed corridor occur as wooded draws near wetlands and as shelterbelts adjacent to farms, fields, and roads to block prevailing winds. The proposed route crosses 24 upland wooded and shrubland areas, many of which are planted shelterbelts. Rangeland Pipeline is proposing to implement mitigation measures to minimize the potential for impacts on wooded areas. Rangeland Pipeline would:

- reduce the width of the construction work area to 70 feet or less in wooded areas;
- selectively cut and remove shrubs and trees within the 70-foot-wide construction work area leaving mature shrubs and trees in place where practical; and
- replace shrubs and trees affected by construction with bare root seedlings of similar species on a 2 to 1 basis as recommended by the NDGFD provided that the shrubs and trees replaced are outside the permanent right-of-way, not within other utility rights-of-way, and placement is authorized by the landowner or land management agency.

3. Extractive and Storage Resources

A review of the Project study area identified two types of actively mined extractive resources at various locations within the proposed corridor: oil and gas and sand and gravel. Neither of these extractive resources would be affected by the proposed route. Lignite, scoria (volcanic-like rock), and salt are also mined in Williams County. Although these resources may exist within the proposed corridor, mines for these resources were not identified. Additionally, storage resources within the proposed corridor were not identified.

Oil and Gas

Known oil and gas reserves in North Dakota are associated with the Williston Basin in the western half of the state. The Williston Basin is a structurally simple basin. It is roughly circular, deepest in its center, and the strata become both shallower and thinner towards its margins. It is a large basin, covering approximately 300,000 square miles over parts of North Dakota, South Dakota, Montana, and the adjacent Canadian provinces of Saskatchewan and Manitoba.

The proposed corridor and route pass over the basin's deepest point where the Precambrian surface is more than 16,000 feet below the surface. According to the North Dakota Department of Mineral Resources there are 69 known oil and gas wells within the proposed corridor, with the majority of these concentrated near the corridor's eastern end point (see Appendix J). Of these, 31 wells are active, 26 are plugged and abandoned, and the rest are in various states of disuse. Rangeland Pipeline's proposed route will avoid all existing oil and gas wells.

Typically, the pipeline trench would be less than 6 feet deep to account for the pipe and adequate cover, except where horizontal directional drilling is proposed. Where horizontal directional drilling is proposed, the pipe would be installed up to a depth 50 feet. Because oil and gas is generally produced from depths in excess of 1,000 feet, construction of the pipeline is not expected to affect the ability of a well bore to produce petroleum and/or natural gas. In addition, measures will be taken to avoid construction-related damage to surface or near-surface components of the wells and gathering systems, which could temporarily disrupt production. To minimize the potential for impacting near-surface components, Rangeland Pipeline would:

- identify any associated underground gathering lines along the proposed route and take appropriate precautions to protect the integrity of such facilities;
- contact the state One-Call system to identify and mark the locations of underground utilities; and
- participate in the state One-Call system to provide for easy identification of Rangeland Pipeline facilities for future construction projects and new well sites.

Sand and Gravel

There are a number of areas within the proposed corridor where surface sand and gravel are potentially mineable. A review of the Project corridor identified five potentially minable sand and/or gravel mining operations within the proposed corridor. All five operations appear to be abandoned.

The existing Enbridge pipeline already precludes surface mining in the immediate vicinity; therefore, neither short- nor long-term impacts associated with the proposed Project are anticipated.

4. Wetlands, Woodlands, and Wooded Areas

Wetlands

Rangeland Pipeline completed a field-based wetland determination of the proposed corridor in November, 2010. Wetlands are scattered throughout the proposed corridor and along the proposed route (see Appendices F). Approximately 2.0 acres of wetlands were mapped within the estimated construction workspace

All of the wetlands mapped within the Project's proposed 100-foot-wide construction workspace are emergent wetland communities, characterized by rooted herbaceous vegetation. Water sources for these wetland communities include seepage from ditches and drainages, irrigation runoff, and ponding on poorly drained soils. Common plant species along within the wetlands include quackgrass (*Agropyron repens*), big bluestem (*Andropogon gerardii*), smooth brome (*Bromus inermis*) and various sedges (*Carex* spp.)

Construction in wetlands would primarily result in short-term impacts including the temporary loss of wetland vegetation, soil disturbance, and increases in turbidity and fluctuations in wetland hydrology. Additionally, if not prevented, wetlands could be contaminated by accidental spills during vehicle refueling and maintenance, or from other potential hazardous material spills that might occur during construction. Rangeland Pipeline is proposing to implement mitigation measures to minimize impacts on wetlands. Rangeland Pipeline is also working with the USACE to mitigate impacts. The proposed Project qualifies for coverage under Nationwide Permit 12 under Section 404 of the CWA, and a PCN will be submitted to the USACE by Barr on behalf of Rangeland Pipeline prior to construction. To minimize impacts on wetlands, Rangeland Pipeline will:

- mark wetland boundaries prior to construction;
- reduce the width of the construction work area to 70 feet or less through wetland areas;
- restrict the equipment working in and passing through wetlands to the extent practical;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench in unsaturated wetlands (where there is less than 12 inches of topsoil strip the existing amount);

- in unsaturated wetlands, store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (*e.g.*, slope breakers, and sediment barriers) to minimize the potential for erosion and sedimentation in wetlands during construction;
- use equipment pads or timber mats as needed to support construction equipment in saturated wetlands and reduce the potential for soil compaction;
- prohibit equipment refueling and the storage of fuels and hazardous substances in or within 100 feet of wetlands;
- reseed unsaturated wetlands with annual ryegrass or similar cover crop at a rate of 40 pounds per acre to temporarily stabilize the soils and allow native vegetation to reestablish without excessive competition;
- return all soil to pre-construction contours and ensure that there are no alterations to existing drainage patterns; and
- prohibit installation of surface facilities within wetlands.

Woodlands & Wooded Areas

The only woodlands and wooded areas within the proposed corridor are narrow corridors and shelterbelts adjacent to farms, fields, and roads to block prevailing winds (see Appendix F). Together, wooded draws and shelterbelts occupy about 34 acres (0.3 percent) of the Project corridor. Construction would affect 24 upland forested and shrubland areas, 15 of which are planted shelterbelts. A total of 360 trees, saplings, and shrubs would be removed during construction but replaced on a 2-to-1 basis following construction.

Natural wooded areas within the proposed corridor support several native tree and shrub species such as green ash (*Fraxinus pennsylvanica*), chokecherry (*Prunus virginiana*), buffaloberry (*Sheperdia argentea*) and downy hawthorn (*Crataegus mollis*). Planted windbreaks support non-native woody plant species such as Siberian elm (*Ulmus pumila*), Russian olive (*Eleagnus angustifolia*), and Siberian peashrub (*Caragana arborescens*). Some of the windbreaks also support green ash and ponderosa pine (*Pinus ponderosa*).

Clearing of woody vegetation within the construction work area would result in some long-term change. In this region, it is anticipated that re-growth of trees to mature conditions could take up to 50 years, depending on the species. Permanent impacts would be limited to the permanent right-of-

way and easements, which Rangeland Pipeline would maintain in an herbaceous state by occasional mowing or brush clearing. Rangeland Pipeline is also proposing to implement additional mitigation to minimize impacts on wooded areas. Rangeland Pipeline would:

- reduce the width of the construction work area to 70 feet or less in wooded areas;
- selectively cut and remove shrubs and trees within the 70-foot-wide construction work area leaving mature shrubs and trees in place where practical;
- dispose of marketable timber by sale to the public, and burn non-marketable woody vegetation in accordance with local burning laws;
- cut woody vegetation flush with the surface of the ground such that root stock is left in place to aid in revegetation after construction (except over the trench line, in areas requiring grading, and where necessary to provide a safe work surface); and
- replace shrubs and trees affected by construction with bare root seedlings of similar species on a 2-to-1 basis as required by the Commission, provided that the shrubs and trees replaced are outside the permanent right-of-way, not within other utility rights-of-way, and placement is authorized by the landowner or land management agency.

5. Radio and Television Reception and other Communications or Electronic Control Facilities

A review of the Project study area did not identify radio, television, or other communication or control facilities within the proposed corridor or route. No effects on radio or television reception, or other communication or electronic control facilities are expected as a result of the proposed Project.

6. Human Health and Safety

The United States has the largest network of petroleum pipelines of any country. Transporting large volumes of crude oil over long distances by pipeline is safer than by truck, railcar, or barge. Pipelines are the safest, most reliable, and efficient manner of transporting crude oil.

Despite its excellent safety record, the transportation of crude oil via pipelines involves some risk to the public. Perhaps the most obvious risk to human health is the potential for fire in the event of an accident and subsequent release. Toxic exposure from crude oil through skin contact, ingestion, or vapor inhalation can also be a risk.

Rangeland Pipeline will implement specific and robust measures to minimize the risks to human health and safety. The U.S. Department of Transportation is mandated to provide for pipeline safety under Title 49, United State Code, Chapter 601. The Pipeline and Hazardous Materials Safety Administration, Office of Pipeline Safety, administers the national regulatory program to ensure the safe transportation of crude oil and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety.

Rangeland Pipeline would design, construct, test, operate, and maintain the proposed pipeline in accordance with all applicable laws and standards. The U.S. Department of Transportation's pipeline standards are published in Part 195 of Title 49 of the Code of Federal Regulations. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. Part 195 specifically addresses petroleum pipeline safety issues. It specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion.

Rangeland Pipeline would implement SCADA electronic monitoring of the pipeline, and would also inspect the pipeline corridor periodically, but no less frequently than as required by 49 CFR Part 195. Qualified personnel would conduct the inspections and would note unusual activity in or near the right-of-way, or conditions that could indicate potential petroleum releases. If abnormal conditions are noted, ground crews would immediately be dispatched for further investigation. If a release is suspected, the inspector would notify the control center, and the pipeline would be shut down pending an on-site investigation. These surveillance activities would provide information on possible encroachments and nearby construction activities, erosion, exposed pipe, and other potential concerns that may affect the safety and operation of the pipelines. The inspections and surveillance of the pipeline right-of-way would meet the DOT requirement of inspecting the surface conditions on or adjacent to the pipeline right-of-way at intervals not exceeding 3 weeks, but at least 26 times each calendar year (49 CFR 195.412).

Rangeland Pipeline will work with local emergency responders, including police, fire, and medical service providers, to develop an Emergency Response Plan (ERP) for operation and maintenance of the proposed pipeline. The ERP would include the names and contact information of individuals with responsibility for actions if a spill or other emergency situation were to occur, including people

within Rangeland Pipeline and within the agencies and public service organizations that would respond to an emergency.

7. Animal Health and Safety

Federally-listed Threatened and Endangered Species

Publicly available information, such as sensitive species and habitat lists that are maintained on the USFWS website and listed by state and county, were reviewed for this Project as part of habitat assessments performed in November 2010 and reported in Appendix E. The species listed include five endangered and one threatened species that may occur in Williams County, North Dakota according to the USFWS (2010a). These species are:

1. Interior least tern (*Sterna antillarum*) - federally endangered;
2. Whooping crane (*Grus americana*) - federally endangered;
3. Pallid sturgeon (*Scaphirhynchus albus*) - federally endangered;
4. Gray wolf (*Canis lupus*) - federally endangered; and
5. Piping plover (*Charadrius melodus*) - federally threatened.

On December 20, 2010, Barr, on behalf of Rangeland Pipeline sent a letter to the USFWS introducing the Project and asking for comments. The USFWS has not yet responded. Additional information will be provided to the USACE as part of the NWP 12 PCN in order to facilitate agency consultations pursuant to section 7 of the ESA. The USACE will provide this information to the USFWS to receive concurrence that Project activities are not likely to have adverse effects on federally-listed species as described below.

Interior Least Tern (*Sterna antillarum*)

The interior least tern is the smallest member of the tern family with a wingspan of only 20 inches. They have a grayish back and wings, and snowy white undersides. Interior least terns can be distinguished from all other terns by their combination of a black crown, white forehead, and a variable black-tipped yellow bill.

Interior least terns arrive at nesting sites from late April to early June where they typically spend four to five months. Least terns nest in small colonies on exposed salt flats, river sandbars, and reservoir beaches. Nests are small scrapes in the sand, and usually two or three eggs are laid. The young are fairly mobile soon after hatching. Both parents feed the young and remain with them until fall

migration. Terns will travel four or more miles from their breeding colonies to find the small fish that make up the major part of their diet.

Interior least terns are known to nest along midstream sandbars of the Missouri and Yellowstone rivers. Presently, about 100 pairs of interior least terns breed in North Dakota, mostly upstream and downstream of Lake Sakakawea. The proposed Project is about than 8 miles from the Lake Sakakawea, which may provide some foraging habitat for the birds. It is, therefore, unlikely that the birds would be present in the grasslands, fields, or wetlands affected by the Project, and not likely to be impacted by Project activities.

Whooping Crane (*Grus americana*)

The whooping crane is about 5 feet tall and has a long, sinuous neck and long legs. Its snowy white body feathers are accented by jet-black wingtips and a red and black head with a long, pointed beak. The whooping crane's wings measure about 7 feet across. The whooping crane is named for its call, which has been described as a shrill, bugle-like trumpeting.

The current nesting range of the whooping crane is in or near Wood Buffalo National Park in Canada, with wintering grounds along the Texas gulf coast at Aransas National Wildlife Refuge and vicinity. The cranes migrate through North Dakota in spring and fall and utilize cultivated croplands, small wetlands, and riverine corridors during migration. Williams County is considered to be within the primary migratory flight path of the whooping cranes.

Suitable foraging habitat occurs in the area of the proposed Project. However, most Project construction is expected to occur between the cranes' spring and fall migration periods. The proposed Project, therefore, is not likely to impact the whooping crane.

Pallid Sturgeon (*Scaphirhynchus albus*)

The pallid sturgeon is a large river fish with some individuals reaching lengths of 6 feet and weighing more than 80 pounds. It is similar in appearance to the shovelnose sturgeon, but the pallid is toothless and its mouth is positioned under the snout for sucking fish and small animals from the river bottom. The pallid sturgeon occurs in the Missouri River from central Montana to St. Louis, Missouri and in several other large rivers in North America. It occurs mostly in the free-flowing stretches of these rivers in braided channels with dynamic currents and periodic flooding.

The proposed Project is about 8 miles from Lake Sakakawea within the Missouri River. The Project crosses Beaver Creek, which flows about 13 river miles into the lake. Activities associated with construction are not expected to adversely impact the water quality in the creek or, consequently, in Lake Sakakawea. Therefore, the proposed Project is not likely to impact the pallid sturgeon.

Gray Wolf (*Canis lupus*)

Resident gray wolves are believed to have been extirpated from North Dakota in the 1930s. Occasionally, wolves are sighted in North Dakota, likely from animals dispersing from Minnesota or Manitoba seeking to establish new territory.

Gray wolves use a variety of habitats and are highly mobile, though most depend on some degree of forested habitat, in which prey animals are most common. Individuals and packs tend to be wary of human activity and open habitats where they are exposed to humans. The area within the proposed Project corridor is open with little suitable habitat for wolves. Therefore, the Project is not likely to impact the gray wolf.

Piping Plover (*Charadrius melodus*)

The piping plover is a small, stocky, sandy-colored bird resembling a sandpiper. The adult has yellow-orange legs, a black band across the forehead from eye to eye, and a black ring around the base of its neck. Piping plovers of the northern Great Plains and Canadian prairies breed along major rivers in the sandbars and braided channels or in saline wetlands with areas of bare sand or gravel. In North Dakota, piping plovers arrive in breeding areas, primarily along the Missouri River, at the beginning of May.

Suitable breeding and nesting habitat does not occur within the Project area and free-flowing stretches of the Missouri River with sandbars are more than 15 miles away at the west end of Lake Sakakawea. Therefore, the Project is not likely to impact the piping plover.

General Wildlife

A review of the Project study area identified a variety of wildlife species likely to occur within the proposed corridor and along the proposed route. The predominant wildlife habitats are grasslands, shrublands, and emergent wetlands (see Appendix I). Wetlands and shrublands are valuable wildlife habitat as they represent relatively scarce habitat types in the region. Agricultural land and developed

land is not considered wildlife habitat because it supports only a limited diversity of plants and animals.

Wildlife observed directly or indirectly within the Project corridor during the field surveys include: leopard frog (*Rana pipiens*), ring-necked pheasant (*Phasianus colchicus*), sharp-tailed grouse (*Tympanicus phasianellus*), northern raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), bivalve shells, and various waterfowl. Other wildlife known to occur in this area include: pronghorn antelope (*Antilocapra americana*), coyote (*Canis latrans*), various migratory and non-migratory birds, and other animals typical of the northern Great Plains.

In total, wildlife habitat occupies approximately 3,191 acres (or 24 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 54 acres of wildlife habitat along the proposed route. Due to the narrow, linear nature of the Project, these acreages represent only a very small percent of available wildlife habitat on a regional basis.

During construction, most animals would move to adjacent habitats because of the noise and activity of the heavy equipment. More mobile species, such as larger mammals and birds, may relocate to adjacent habitat during construction. The impacts to less mobile or burrowing species, such as mice and frogs, are expected to be minimal due to the relatively small footprint of the proposed Project, although some individuals may be permanently displaced as a result of the temporary construction activities. Overall, the impacts on wildlife are expected to be temporary and minor.

Habitat fragmentation is frequently a concern when clearing rights-of-way. In general, fragmentation can result in an altered wildlife community as species more adaptable to edge habitats establish themselves, while species requiring undisturbed habitats are subject to negative effects. However, fragmentation disturbance to wildlife and wildlife habitats from the proposed Project is not expected to be significant because most of the pipeline (99 percent) would cross open habitat types and a majority of construction (96 percent) would be adjacent to or overlap existing right-of-way. As such, the effects of habitat fragmentation would be minimal.

Fish

In a letter dated January 14, 2011, the NDGFD identified Beaver Creek as a Class III fishery. The proposed corridor and route cross Beaver Creek three times. Rangeland Pipeline is proposing to cross Beaver Creek using one horizontal directional drill (HDD), as recommended by the NDGFD. Horizontal directional drilling involves drilling a hole under the creek and installing a prefabricated

segment of pipe through the hole. Horizontal directional drilling is designed to avoid disturbing the bed and banks of the creek and should have no effects on fish. However, if a weak area in the ground is encountered during drilling, pressurized drilling fluid (a mixture of water and bentonite clay) could be pushed to the surface and possibly escape into the creek and disturb bottom sediments near the release. A release of drilling mud, which is typically more than 90 percent water, could cause localized increases in sediment loads and could fill interstitial gaps in the streambed, covering habitat for benthic invertebrates, larval fish, and eggs. The amount of area impacted by a release of drilling mud would be relatively small because the consistency of drilling mud would prevent heavy deposition in any one area. The likelihood of a release of drilling fluid during the HDD is low, and the chance that such a release would enter the creek is lower. However, Rangeland Pipeline's HDD contractor will have appropriate mitigation measures on hand, such as silt fence, to minimize the extent to which a release of drilling fluid may enter the creek.

Though unlikely, it is possible for horizontal directional drilling to fail, in which case construction across Beaver Creek would require open-cut construction. Open-cut construction involves trenching through the creek while water continues to flow across the work area. If open-cut construction were required, effects on fisheries would be more appreciable. During construction, clearing along the banks of the creek and excavation in the waterbody would result in increased sedimentation and turbidity. Sedimentation can congest and plug waterbodies and cover habitat important to fish and other aquatic organisms. Turbidity can burden fish by obstructing their gills, inhibiting their sight, and disrupting their feeding patterns. Additionally, the creek could be contaminated by accidental spills during vehicle refueling and maintenance (if permitted) or from other potential hazardous material spills that occur during construction. In the event horizontal directional drilling fails and open-cut construction is required, Rangeland Pipeline would implement mitigation measures to minimize the potential for impacts on fish. Rangeland Pipeline would:

- avoid construction within the stream between April 15 and June 1, as recommended by NDGFD;
- prohibit equipment refueling (except for water pumps for hydrostatic test water appropriation) and the storage of fuels and hazardous substances in or within 100 feet of Beaver Creek;
- require all construction equipment to cross the creek on a temporary bridge (fording the creek would not be allowed);

- install erosion and sediment control devices, such as silt fence, straw bales, and diversion berms, as appropriate along the creek banks immediately after clearing the creek banks to minimize the potential for sediment delivery to the creek;
- use earthen trench plugs in the trench on both sides of the creek until just before installing the pipe to prevent muddy water in the upland trench from draining into the creek;
- complete in-stream construction within 48 hours to minimize the duration of sedimentation and turbidity, unless site-specific conditions make this impractical;
- seed and stabilize disturbed creek banks immediately after re-contouring the banks, weather and soil conditions permitting.

To verify the integrity of the pipeline before placing it into service, Rangeland Pipeline would hydrostatically test the pipeline. The hydrostatic test would involve filling the pipeline with water, pressurizing it, and then checking for pressure losses due to pipeline leakage. Rangeland Pipeline is in the process of determining the best source and discharge location for hydrostatic test water, the needed volume of water for testing, and the optimal rate of appropriation. Once determined, Rangeland Pipeline will inform the Commission of the details of planned hydrostatic testing and will work with the North Dakota State Water Commission (NDSWC) to secure an appropriations permit for hydrostatic test waters.

During water appropriation, fish and other aquatic organisms could become trapped by the water intake. If the source for hydrotest water is Beaver Creek, withdrawal could also temporarily lower the water levels and limit fish movement across the construction area. Impediments to movement would be the most significant during migration. To minimize the potential for impacts from water appropriation, Rangeland Pipeline would:

- install test water intakes with filtering and screening devices, and would suspend the intakes above the stream bottom to minimize the potential for entrapment of fish, aquatic organisms, and debris;
- limit withdrawal rates to 10 percent of the creek's flow, unless otherwise approved by the NDSWC; and
- acquire a water appropriation permit from the NDSWC and follow all permit requirements regarding appropriation rates, volumes, and timing.

Rangeland Pipeline will also work with the NDDH to secure a permit to discharge the hydrostatic test water once a suitable discharge location has been identified. If discharge rates of hydrostatic test

water are not carefully controlled, discharges to creeks or other waterbodies could cause erosion of banks and beds. Erosion could result in a temporary increase of sediment load and reduction of habitat. Discharges could also contaminate waterbodies if chemicals or additives are used in the test water or if the test water comes into contact with chemicals or debris inside the pipe during hydrostatic testing. Potential for contamination from chemicals inside the pipe would be low because the pipeline would be constructed entirely from new pipe. To minimize the potential for impacts from hydrostatic test water discharges, Rangeland Pipeline would:

- use low discharge rates and/or energy dissipation devices (e.g., splash pups or splash boards) to minimize the potential for creek bed and bank scour;
- not use chemicals or additives in the test water (unless otherwise approved by the NDDH);
- remove debris from the inside of the pipe using an in-line cleaning device prior to hydrostatic testing; and
- acquire a water discharge permit from the NDDH and follow all permit requirements regarding discharge rates, volumes, and timing; and
- sample and analyze the discharge water as required by the discharge permit.

8. Plant Life

A review of the Project corridor identified four general vegetation communities within the proposed corridor and along the proposed route: agricultural land, grasslands, emergent wetlands, and shrublands (see Appendix E). The predominant vegetation community is agricultural land, followed by grasslands, wetlands, and woodlands. No native prairie communities were found to be crossed by the proposed Project route.

Agricultural Land

Agricultural land comprises about 10,063 acres (76 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 192 acres of agricultural land. The relative value of agricultural land, impacts of the proposed Project on agricultural land, and mitigation measures proposed by Rangeland Pipeline to minimize impacts on agricultural are discussed in Section D.2.c.i.1. The proposed block valve that would be installed at approximately MP 13.5 would permanently impact less than one-tenth of one acre of agricultural land.

Grasslands

Grasslands comprise about 2,850 acres (21 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 46 acres of grasslands. Grasslands within the proposed corridor are primarily dominated by native and non-native grasses. The dominant species include crested wheatgrass (*Agropyron cristatum*), big bluestem (*Andropogon gerardii*), smooth bromegrass (*Bromus inermis*), western wheatgrass (*Pascopyrum smithii*), needle-and-thread (*Hesperostipa comate*), blue grama (*Bouteloua gracilis*), and green needlegrass (*Nasella viridula*). Much of the grasslands within the proposed corridor and route have experienced heavy grazing, which has dramatically affected the vegetation.

The primary impact of the proposed Project on grasslands would be the temporary clearing of existing vegetation within the construction work area. Rangeland Pipeline is proposing to implement mitigation measures to minimize the potential for impacts on grasslands, such as:

- strip, store, and replace topsoil over the trenchline in grasslands used for grazing according to sections D.2.b.ii and D.2.c.i.2;
- restore the work area to its pre-construction contours and reseed disturbed soils with grassland mixtures approved by the landowner and/or NRCS.

With the implementation of mitigation measures, no long-term or permanent impacts to grasslands are anticipated.

Wetlands

Wetlands comprise about 290 acres (2.2 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 2.0 acres of emergent wetlands. The relative value of wetlands, impacts of the proposed Project on wetlands, and mitigation measures proposed by Rangeland Pipeline to minimize Project impacts on wetlands are discussed in Section D.2.c.ii.4.

Woodlands

Woodlands comprise about 30 acres (0.2 percent) of the proposed corridor. Construction of the proposed pipeline would affect approximately 2.5 acres of woodlands. The relative value of woodlands, impacts of the proposed Project on woodlands, and mitigation measures proposed by Rangeland Pipeline to minimize Project impacts on woodlands are discussed in Section D.2.c.ii.4.

Developed Land

Developed land (mainly residential areas, farm/ranch operations, roads/highways, and oil well pads) comprises about 231 acres (1.7 percent) of the proposed corridor. Construction of the proposed pipeline would temporarily affect approximately 6 acres of developed land, primarily roads which will be bored. Discussions of potential impacts on the various types of developed land, as well as mitigation measures proposed by Rangeland Pipeline to minimize Project impacts on these areas, are discussed in sections D.2.b.v, D.2.c.i.2, and D.2.c.ii.3.

d. Policy Criteria

Policy criteria are those factors positively affected by a project that may lead the Commission to give preference to an applicant.

i. *Location and Design*

Rangeland Pipeline has designed the proposed Project to take advantage of existing pipeline facilities to the maximum extent practical. The existing Enbridge Trenton to Beaver Lodge pipelines serve an important role in connecting crude oil supplies south of the Missouri River in Richland and McKenzie counties to consumers in Clearbrook, Minnesota and beyond.

Rangeland Pipeline is proposing to install the proposed pipeline adjacent to the existing Enbridge 10-inch-diameter pipeline, except where crossovers of the existing pipeline or minor route variations are necessary. Installing the pipeline in this manner would allow Rangeland Pipeline to take advantage of the existing utility corridor, and would minimize impacts on landowners and sensitive environmental resources. Rangeland Pipeline is also proposing to use enhanced non-destructive testing criteria on the pipeline that exceed applicable codes in order to provide a greater measure of confidence in the integrity and reliability of the system.

ii. *Training and Utilization of Available Labor in this State for the General and Specialized Skills Required*

The number of construction workers that would be employed during construction would vary greatly depending on the contractor that is chosen for the Project, the construction approach taken by the contractor, and the phase of construction. Rangeland Pipeline estimates that, on a typical project of this size, approximately 100 construction personnel would be employed during the peak of construction.

The number of construction workers that would be hired locally during construction would also vary depending on the contractor. Pipeline construction is a niche market and qualified, local pipeline contractors will be utilized to the extent practicable. If a non-local contractor is awarded this Project, it is likely that up to 25 percent of the workers (25 workers) would be hired from the local population currently residing in nearby areas of North Dakota. The remaining 75 percent (75 workers) would be temporary non-local workers with specialized skills in pipeline construction. Due to the temporary nature of the work, most local hiring and training would be general labor. Specialized labor would likely be non-local.

Rangeland Pipeline anticipates hiring three to five permanent employees to assist in the operation of the new pipeline. Operation of the pipeline will initially be managed from the COLT Hub at Epping.

iii. *Economies of Construction and Operation*

Rangeland Pipeline is proposing to construct the Project during the same general time frame as Rangeland Terminals' COLT Hub construction project. Rangeland Pipeline and Rangeland Terminals could use a combined workforce to oversee the construction and operation of both projects, thus minimizing overall construction and operating costs.

iv. *Use of Citizen Coordinating Committees*

Rangeland Pipeline did not utilize citizen coordinating committees on this project. However, landowners along the pipeline were contacted to make them aware of the project and to request permission to conduct the field investigations required for this application. Rangeland Pipeline is actively consulting with state and federal agencies, local officials, and landowners and will continue to communicate Project milestones to these stakeholders while receiving input and advice throughout Project planning and permitting, construction, and operation.

v. *A Commitment of a Portion of the Transmitted Product for Use in this State*

The COLT Connector will provide access to the Tesoro transmission pipeline at Beaver Lodge/Ramberg. As a result, customers may be able to use the Project to transport crude oil to the Mandan, North Dakota refinery, which receives and processes crude oil transported via the Tesoro transmission pipeline.

vi. *Labor Relations*

Rangeland Pipeline does not anticipate any adverse impacts on labor relations as a result of this Project.

vii. *The Coordination of Facilities*

As mentioned in section D.2.d.i, Rangeland Pipeline has designed the proposed pipeline to take advantage of existing pipeline facilities and utility corridors to the maximum extent practical. The existing Enbridge Trenton to Beaver Lodge pipelines serve an important role in connecting crude oil supplies south of the Missouri River in McKenzie County, North Dakota and Richland County, Montana to consumers in Clearbrook, Minnesota and beyond.

viii. *Monitoring of Impacts*

Environmental Monitoring

Rangeland Pipeline is committed to protecting the environment and complying with all applicable environmental laws, regulations, and standards. Rangeland Pipeline is proposing to implement three types of monitoring on this Project to help ensure environmental compliance: environmental training, environmental inspection, and post-construction monitoring.

Environmental Training

Rangeland Pipeline would require environmental training of all Project personnel prior to construction. Rangeland Pipeline would:

- require environmental training of all personnel (both contractor and Rangeland Pipeline) working at the job site; and
- require everyone who attends training to sign an acknowledgement form and be issued, as a proof-of-training, a copy of the training booklet and a hardhat sticker.

Environmental Inspection

To provide on-site documentation of environmental compliance during construction, Rangeland Pipeline is proposing to conduct environmental inspection of the contractor's activities. To provide on-site documentation of environmental compliance, Rangeland Pipeline would:

- use at least one environmental inspector on the proposed Project during active construction (if the environmental inspection is not available on site, the site supervisor would be responsible for carrying out the inspector's duties).

The environmental inspector would be responsible for overseeing the contractor's compliance with environmental requirements and permits during construction. The primary responsibility of the environmental inspector would be to observe construction-related activities and monitor compliance with, and provide interpretation of, the environmental requirements of the Project. The inspector would be responsible for preparing written reports documenting compliance with Project requirements, as well as instances where non-compliance is observed.

The inspector would recommend corrective measures where noncompliance is observed. If environmental damage is imminent, the inspector would have the authority to stop the activity in question until the concern can be resolved.

Post-Construction Monitoring

To minimize the potential for long-term impacts of the environment, Rangeland Pipeline would conduct post-construction monitoring of the Project area. Rangeland Pipeline would:

- coordinate with landowners after construction to identify areas of concern and implement appropriate mitigation measures;
- cultivated fields and compacted or rutted areas would be tilled with a deep-tillage device or a chisel plow to loosen compacted soils. After tilling, the bulk density of the soil would be measured using a soil penetrometer; and
- conduct a post-construction inspection of all disturbed areas to determine the success of revegetation.

Operations Monitoring

Pipeline Control System

Rangeland Pipeline would use a Supervisory Control and Data Acquisition (SCADA) system to monitor the safety and integrity of the pipeline while in use. The SCADA system would consist of pipeline sensing devices (including pressure, temperature, and flow sensors), a remote computer at Rangeland Terminals' COLT Hub, a real-time communications network, and a complete data display that is available to the pipeline control operator.

The SCADA system can automatically initiate pump station shutdowns to maintain safe operating pressures. Pipeline control operators also can manually initiate pipeline shutdown when they observe or suspect abnormal conditions.

ix. *Utilization of Existing and Proposed Rights-of-Way and Corridors*

As discussed in sections A.3.a and D.2.d.i, Rangeland Pipeline is proposing to install the proposed pipeline immediately adjacent to an existing Enbridge pipeline, except where minor route variations are necessary. Installing the pipeline in this manner would minimize impacts on landowners and sensitive environmental resources. In total, about 18 miles (90 percent) of the pipeline would be adjacent to existing pipeline right-of-way, and the entire route would be within the corridor approved by the Commission for the Enbridge 10-inch pipeline project. The alignment of the existing pipeline and the alignment of the proposed pipeline are depicted on the maps included in Appendix B.

x. *Other Existing or Proposed Transmission Facilities*

Rangeland Pipeline does not own other existing transmission pipeline facilities in North Dakota at this time, and has no immediate plans for additional transmission facilities.

e. Design and Construction Limitations

For additional information regarding design and construction limitations, refer to Sections A.3 and D.1 of the Certificate of Corridor Compatibility Application and Section B.14 of the Route Permit application.

Design, construction and operation of the pipeline and related facilities will be in accordance with U.S. Department of Transportation regulations governing the transportation of hazardous liquids. These regulations are prescribed under Part 195 of Title 49 of the Code of Federal Regulations, Transportation of Hazardous Liquids by Pipelines.

Rangeland Pipeline defined its study area as the certificated corridor of the existing Enbridge Trenton to Beaver Lodge 10-inch-diameter pipeline. Rangeland Pipeline is proposing to install the proposed pipeline generally adjacent to the existing Enbridge pipeline from Rangeland Terminals' COLT Hub at Epping to Enbridge and Tesoro delivery points at Beaver Lodge. Rangeland Pipeline has identified a few locations where environmental or constructability issues appear to warrant minor variations from paralleling the route utilized by Enbridge. These variations are limited in number and scope, and most are within 50 to 1,000 feet of the existing Enbridge pipeline.

f. Economic Considerations

Crude oil is North Dakota's leading mineral product, and North Dakota is currently the fourth largest producer of crude oil in the country. The proposed pipeline would supplement the space needed in North Dakota pipelines to continue to export growing volumes of crude oil and increase outbound capacity thus improving netbacks at the wellhead, boost the economy, and allow the state to capitalize on tax revenue gathered from increased production and extraction taxes. For example, Rangeland Pipeline's proposed Project will contribute the following economic benefits to local and state economies:

- local workers would be hired for a period of up to four months on this Project;
- Project payrolls would result in an increase in income tax revenue for the state;
- state and local governments would realize additional tax revenue from retail purchases by temporary workers;
- state and local governments would realize additional sales tax revenue from the purchase of local materials;
- Rangeland Pipeline's sales/use tax obligation would benefit local governments; and
- during operation of the pipeline, Rangeland Pipeline would pay *ad valorem* taxes to local governments crossed by the proposed pipeline.

5. Mitigative Measures

Mitigation measures to minimize adverse impacts of the proposed Project are identified throughout this document in bulleted (·) text and listed below as Rangeland Pipeline's proposed mitigative measures. The list below provides a condensed discussion of the guidelines and mitigation measures that Rangeland Pipeline would implement on this project.

Historical Resources: In order to minimize the potential impacts on unanticipated discoveries of historical resources, Rangeland Pipeline would:

- immediately stop work in the vicinity of an unanticipated discovery of cultural resources or human remains and notify appropriate personnel at the SHPO, NDDH, and/or law enforcement;
- prohibit work in the vicinity of the unanticipated discovery until all appropriate contacts, consultations, evaluations, disposition, treatments, and authorizations have been obtained;
- otherwise follow the Unanticipated Discoveries Plan, when adopted.

Agricultural Production: In order to minimize the potential for short-term impacts on agricultural productivity, Rangeland Pipeline would:

- bury the pipeline deeper than typical tillage depths to allow continued use of the land for agriculture after construction;
- clean heavy equipment that is capable of transporting weed propagules or soil pest prior to use on the Project;
- prohibit construction during periods of prolonged, heavy rainfall to minimize the potential for soil compaction and reduced soil productivity;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or using other methods approved by the landowner or land management agency) where compaction has been shown to have been caused by construction;
- in active croplands, strip and segregate the existing topsoil from the subsoil, up to 12 inches or to the depth of cultivation, from over the trenchline (double ditching method) in order to maintain topsoil integrity, minimize subsoil mixing, and minimize impacts on soil productivity;
- strip and segregate the existing topsoil from the subsoil in areas where topsoil stripped from the trenchline will be stored, except along segments of the pipeline that will use the double-ditching construction method;
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (*e.g.*, slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss and other associated damages for the year of construction;
- coordinate with landowners to assess crop productivity following construction and provide compensation where crop yields show decline as a result of pipeline construction activities;
- coordinate the interruption of irrigation and drainage systems with each landowner and compensate the landowner for damages and lost production that result from interruption of irrigation and/or drainage due to construction activity;
- repair, replace, or compensate landowners where irrigation and/or drainage systems are damaged by construction; and
- compensate landowners for a permanent easement on their property.

Family Farms and Ranches: In order to minimize the potential for short-term impacts on livestock grazing and movement, Rangeland Pipeline would:

- make arrangements with landowners to keep livestock in fields not affected by the proposed Project where practical;
- cut and brace fences crossed by the proposed pipeline in a manner to prevent slack, and install gates across the opening to prevent livestock passage, if required;
- install temporary fences as necessary to prevent livestock from entering the construction area;
- in active croplands, strip and segregate the existing topsoil from the subsoil, up to 12 inches or to the depth of cultivation, from over the trenchline (double ditching method) in order to maintain topsoil integrity, minimize subsoil mixing, and minimize impacts on soil productivity;
- strip and segregate the existing topsoil from the subsoil in areas where topsoil stripped from the trenchline will be stored, except along segments of the pipeline that will use the double-ditching construction method;
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling to the extent practicable;
- restore the work area to its pre-construction contours to the extent practicable and reseed with mixtures approved by the landowner, or by the Natural Resources Conservation Service in the event of Conservation Reserve Program lands or no landowner preference, or other agency recommendations;
- where practical, defer grazing in the area until right-of-way vegetation becomes reestablished;
- compensate landowners for temporary loss of land use; and
- compensate landowners for a permanent easement on their property.

Surface Drainage: In order to minimize the potential for accidental spills or disturbance of contaminated soils during construction, Rangeland Pipeline would:

- Obtain a National Pollutant Discharge and Elimination System (NPDES) permit from the NDDH and prepare a Stormwater Pollution Prevention Plan (SWPPP);
- prepare and implement a spill prevention, control, and countermeasure (SPCC) plan that describes procedures that would be followed to prevent, control, report, and clean up spills, including requirements for employee training, spill response equipment, equipment inspection, fuel dispensing, and fuel storage; and

- notify the affected landowner and coordinate with the appropriate federal and state agencies as mandated by law if contaminated soil and/or groundwater are encountered during construction.

Visual Effects: In order to minimize the potential for impacts on wooded areas, Rangeland Pipeline would:

- reduce the width of the construction work area to 70 feet or less in wooded areas;
- selectively cut and remove shrubs and trees within the 70-foot-wide construction work area leaving mature shrubs and trees in place where practical; and
- replace shrubs and trees affected by construction with bare root seedlings of similar species on a 2 to 1 basis as recommended by the NDGFD provided that the shrubs and trees replaced are outside the permanent right-of-way, not within other utility rights-of-way, and placement is authorized by the landowner or land management agency.

Oil and Gas: In order to minimize the potential for impacting near-surface components, Rangeland Pipeline would:

- identify any associated underground gathering lines along the proposed route and take appropriate precautions to protect the integrity of such facilities;
- contact the state One-Call system to identify and mark the locations of underground utilities; and
- participate in the state One-Call system to provide for easy identification of Rangeland Pipeline facilities for future construction projects and new well sites.

Wetlands: In order to minimize impacts on wetlands, Rangeland Pipeline would:

- mark wetland boundaries prior to construction;
- reduce the width of the construction work area to 70 feet or less through wetland areas;
- restrict the equipment working in and passing through wetlands to the extent practical;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench in unsaturated wetlands (where there is less than 12 inches of topsoil strip the existing amount);
- in unsaturated wetlands, store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;

- implement temporary erosion best management practices (*e.g.*, slope breakers, and sediment barriers) to minimize the potential for erosion and sedimentation in wetlands during construction;
- use equipment pads or timber mats as needed to support construction equipment in saturated wetlands and reduce the potential for soil compaction;
- prohibit equipment refueling and the storage of fuels and hazardous substances in or within 100 feet of wetlands;
- reseed unsaturated wetlands with annual ryegrass or similar cover crop at a rate of 40 pounds per acre to temporarily stabilize the soils and allow native vegetation to reestablish without excessive competition;
- return all soil to pre-construction contours and ensure that there are no alterations to existing drainage patterns; and
- prohibit installation of surface facilities within wetlands.

Woodlands & Wooded Areas: In order to minimize impacts on wooded areas, Rangeland Pipeline would:

- reduce the width of the construction work area to 70 feet or less in wooded areas;
- selectively cut and remove shrubs and trees within the 70-foot-wide construction work area leaving mature shrubs and trees in place where practical;
- dispose of marketable timber by sale to the public, and burn non-marketable woody vegetation in accordance with local burning laws;
- cut woody vegetation flush with the surface of the ground such that root stock is left in place to aid in revegetation after construction (except over the trench line, in areas requiring grading, and where necessary to provide a safe work surface); and
- replace shrubs and trees affected by construction with bare root seedlings of similar species on a 2-to-1 basis as required by the Commission, provided that the shrubs and trees replaced are outside the permanent right-of-way, not within other utility rights-of-way, and placement is authorized by the landowner or land management agency.

Fish: In order to minimize the potential for impacts on fish, Rangeland Pipeline would:

- avoid construction within Beaver Creek between April 15 and June 1, as recommended by NDGFD;

- prohibit equipment refueling (except for water pumps for hydrostatic test water appropriation) and the storage of fuels and hazardous substances in or within 100 feet of ponds, reservoirs, and perennial streams;
- require all construction equipment to cross Beaver Creek on a temporary bridge (fording the creek would not be allowed);
- install erosion and sediment control devices, such as silt fence, straw bales, and diversion berms, as appropriate along Beaver Creek's banks immediately after clearing the creek banks to minimize the potential for sediment delivery to the creek;
- use earthen trench plugs in the trench on both sides of Beaver Creek until just before installing the pipe to prevent muddy water in the upland trench from draining into the creek;
- if applicable, complete in-stream construction at Beaver Creek within 48 hours to minimize the duration of sedimentation and turbidity, unless site-specific conditions make this impractical; and
- seed and stabilize disturbed creek banks immediately after re-contouring the banks, weather and soil conditions permitting.

Water Appropriation: In order to minimize the potential for impacts from water appropriation, Rangeland Pipeline would:

- install test water intakes with filtering and screening devices, and would suspend the intakes above the stream bottom to minimize the potential for entrapment of fish, aquatic organisms, and debris;
- limit withdrawal rates to 10 percent of the creek's flow, unless otherwise approved by the NDSWC; and
- acquire a water appropriation permit from the NDSWC and follow all permit requirements regarding appropriation rates, volumes, and timing.

Hydrostatic Test Water Discharges: In order to minimize the potential for impacts from hydrostatic test water discharges, Rangeland Pipeline would:

- use low discharge rates and/or energy dissipation devices (e.g., splash pups or splash boards) to minimize the potential for creek bed and bank scour;
- not use chemicals or additives in the test water (unless otherwise approved by the NDDH);
- remove debris from the inside of the pipe using an in-line cleaning device prior to hydrostatic testing;

- acquire a water discharge permit from the NDDH and follow all permit requirements regarding discharge rates, volumes, and timing; and
- sample and analyze the discharge water as required by the discharge permit.

Grasslands: In order to minimize the potential for impacts on grasslands, Rangeland Pipelines would:

- strip, store, and replace topsoil over the trenchline in grasslands used for grazing according to sections D.2.b.ii and D.2.c.i.2; and
- restore the work area to its pre-construction contours and reseed disturbed soils with grassland mixtures approved by the landowner and/or NRCS.

Environmental Training: Rangeland Pipeline would:

- require environmental training of all personnel (both contractor and Rangeland Pipeline) working at the job site; and
- require everyone who attends training to sign an acknowledgement form and be issued, as a proof-of-training, a copy of the training booklet and a hardhat sticker.

Environmental Inspection: Rangeland Pipeline would:

- use at least one environmental inspector on the proposed Project during active construction (if the environmental inspection is not available on site, the site supervisor would be responsible for carrying out the inspector's duties).

Post-Construction Monitoring: Rangeland Pipeline would:

- coordinate with landowners after construction to identify areas of concern and implement appropriate mitigation measures;
- cultivated fields and compacted or rutted areas would be tilled with a deep-tillage device or a chisel plow to loosen compacted soils. After tilling, the bulk density of the soil would be measured using a soil penetrometer; and
- conduct a post-construction inspection of all disturbed areas to determine the success of revegetation.

6. List of Preparers

Rafael Colaco, Rangeland Energy, LLC

Rafael Colaco has over thirty years of experience in pipeline engineering, construction, project and business management. His work has included both liquid and natural gas projects for engineering and pipeline operating companies.

Address: 14100 Southwest Freeway, Suite 220, Sugar Land, Texas, 77478

Mollie Smith, Attorney at Law, Fredrikson & Byron, P.A.

Mollie Smith assists clients with a variety of energy-related matters, including federal, state, and local permitting for transmission and wind energy conversion facilities in North Dakota and Minnesota, as well as other states.

Address: 200 North 3rd Street, Suite 150, Bismarck, North Dakota 58501

Daniel Flo, Barr Engineering Co.

Dan Flo has eight years of experience as an environmental and regulatory compliance manager in the areas of electric, oil, and gas transmission, mining, and environmental review and compliance. His experience includes leading large-scale projects involving environmental review, permitting, and environmental and cultural resources field surveys and agency consultations.

Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435

Randy Duncan, Barr Engineering Co.

Randy Duncan has provided regulatory and permitting assistance to clients in a variety of industries for more than 25 years. His work includes managing environmental field surveys and permitting for fiber-optic, pipeline, and transmission-line projects throughout the U.S., and managing the preparation of EISs and EAs for projects requiring compliance with NEPA (the National Environmental Policy Act). His background also includes developing routing and feasibility studies for corridor projects, preparing environmental review documents, and developing permitting and implementation strategies.

Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435

Daniel Tix, Barr Engineering Co.

Dan Tix has more than 10 years of experience assisting with technical and regulatory aspects of permitting for energy infrastructure projects. His recent work includes serving as technical task lead for wetlands permitting and protected-species consultations with state and federal agencies for numerous pipeline projects in Minnesota and North Dakota.

Address: 4700 W. 77th Street, Minneapolis, Minnesota 55435

7. Maps

a. Criteria Maps

Maps identifying the criteria within the proposed corridor and crossed by the proposed route are included in appendices F, G and H, and have also been provided to the Commission in an electronic format as Portable Document Format (PDF) files.

b. Mylar Maps

Mylar maps have not been included with this application because this process for producing maps and drawings is no longer in use. Instead, Rangeland Pipeline has provided one 8.5-inch by 11-inch project overview map on a topographic map base, and four sets of 11-inch by 17-inch route maps at a scale of 1 inch = 2,000 feet and using color aerial photography backgrounds. These maps can be found in the following locations in this application package:

- Appendix A: Project Overview Map
- Appendix B: Route Maps
- Appendix F: Exclusion and Avoidance Maps
- Appendix G: Selection Criteria Maps (Land Use)
- Appendix H: Selection Criteria Maps (Other)

APPLICATION FOR A

ROUTE PERMIT

Commission Case No. PU-10-637

Introduction

The information required for the Route permit application is nearly the same as that required for the Certificate of Corridor Compatibility application, except the application for a Route Permit also requires a discussion of the factors listed in Sections 49-22-08.1(e) and (f) and 49-22-09 of the North Dakota Century Code. Therefore, to make this filing more user-friendly, nearly all the information required for the Route Permit application has been included in the Certificate of Corridor Compatibility application, with applicable section references to the Certificate application included in the Route Permit application. The only information in the Route Permit application that is not included in the Certificate application is a discussion of factors listed in Sections 49-22-08.1(e) and (f) and 49-22-09 of the North Dakota Century Code.

Section A: Description of Transmission Facility

1. Type

Please refer to Section A.1 of the Application for a Certificate of Corridor Compatibility.

2. Product

Please refer to Section A.2 of the Application for a Certificate of Corridor Compatibility.

3. Size and Design

Please refer to Section A.3 of the Application for a Certificate of Corridor Compatibility.

4. Time Schedule

a. Route Permit

Rangeland Pipeline is seeking a Route Permit on or before May 1, 2011.

b. Right-of-Way Acquisition Complete

Rangeland Pipeline expects right-of-way acquisition to be complete before May 15, 2011.

c. Construction Start Date

Rangeland Pipeline is proposing to start construction in late May, 2011.

d. Construction Complete

Rangeland Pipeline is proposing to complete construction in mid to late October, 2011.

e. Test Operations

Rangeland Pipeline is proposing to complete testing of its facilities in November, 2011, or earlier if possible.

f. In-Service Date

Rangeland Pipeline is proposing to place its facilities in service in November, 2011, or earlier if possible.

5. Minimizing Environmental Impacts

Please refer to Section D.5 of the Application for a Certificate of Corridor Compatibility.

6. Factors Listed in Section 49-22-09 of the North Dakota Century Code

a. Available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.

Please refer to Section B of the Application for a Certificate of Corridor Compatibility for a discussion of available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.

b. The effects of new energy conversion and transmission technologies and systems designed to minimize adverse environmental effects.

No new energy conversion and transmission technologies and systems have been identified in conjunction with the proposed Project.

c. The potential for beneficial uses of waste energy from a proposed energy conversion facility.

The proposed Project does not include an energy conversion facility; therefore this factor does not apply.

d. Adverse direct and indirect environmental effects which cannot be avoided should the proposed site or route be designated.

Please refer to Section D of the Application for a Certificate of Corridor Compatibility for a discussion of adverse direct and indirect environmental effects which cannot be avoided should the proposed route be designated.

e. Alternatives to the proposed site, corridor, or route which are developed during the hearing process and which minimize adverse effects.

In the initial stages of route selection studies for the COLT Connector Pipeline Project, Rangeland Pipeline based its evaluations on two primary routing assumptions. First, since the new pipeline would have fixed origination and destination points, a route representing the shortest distance between these points would have the fewest impacts and be more economically feasible. The second

assumption was that when building a new pipeline in an area that has existing pipelines, pipeline rights-of-way, and a certificated energy transmission corridor, installing it adjacent to the existing pipelines would be preferable to constructing a new route through undisturbed areas and on otherwise unencumbered parcels. A route along the existing Enbridge pipeline corridor between Epping and Beaver Lodge Station satisfied both of these essential routing assumptions.

After initially designing a potential route adjacent and parallel to the existing Enbridge pipelines between the designated origination and destination points, Rangeland Pipelines then evaluated other factors and made several minor route variations. The factors considered in making minor route variations that differ from the adjacent Enbridge pipelines include those made to address landowner concerns, to avoid residences, cultural sites, and oil and gas wells, and to address conditions in the local terrain, such as changes to accomplish perpendicular crossings of streams and draws.

Other alternatives that Rangeland Pipeline considered when planning the Project are discussed in Section C.2 of the Application for a Certificate of Corridor Compatibility.

f. Irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated.

To the extent that the proposed Project may represent an irreversible or irretrievable commitment of natural resources, these commitments will be limited in nature and include such resources as steel for the pipeline and associated facilities, gravel for improvements to service roads or new roads, if required, and fossil fuels that will be used to power construction equipment and to provide power to pump stations and other pipeline facilities.

g. The direct and indirect economic impacts of the proposed facility.

The United States consumes about 21 million barrels per day of petroleum products. A complex transportation network is in place to move the raw materials, which is mainly crude oil, from where they are produced to where they are processed and consumed. Pipelines are an integral part of this network. Pipelines transport roughly two-thirds of the petroleum shipped in the United States, or about 14 billion barrels per year. Because many volumes are shipped first as crude oil and then reshipped as refined product, the annual pipeline shipments are more than double the actual consumption.

The United States has the largest network of petroleum pipelines of any country. Although petroleum pipeline shipments account for more than 17 percent of the freight, they account for less than 2 percent of the cost.

Transporting large volumes of crude oil over large distances by pipeline is less expensive than by truck, railcar, or barge. It is also safer. Pipelines are the safest most reliable and efficient manner of transporting crude oil.

Crude oil is North Dakota's leading mineral product, and North Dakota is currently the fourth largest producer of crude oil in the country. The proposed pipeline would supplement the space needed in North Dakota pipelines to continue to export growing volumes of crude oil and increase outbound capacity thus improving netbacks at the wellhead, boost the economy, and allow the state to capitalize on tax revenue gathered from increased production and extraction taxes.

Beneficial impacts on the economy would also result during construction from temporarily hiring local employees, and from a relatively large-scale, temporary influx of non-local construction workers. Several local workers would be hired for a period of up to four months on this Project.

Unemployment in the area would see a temporary drop, and payroll taxes would temporarily rise. Rangeland Pipeline anticipates that Project payrolls would result in an increase in income tax revenue for the state .

Local businesses would benefit from demands for gasoline and other fuels, goods and services generated by the temporary workforce's need for food, lodging, and other basic needs. Rangeland Pipeline expects that state and local governments would realize additional tax revenue from retail purchases by temporary workers. The state of North Dakota and the City of Williston would benefit from an increase in sales, use, and lodging tax revenue, as would to a lesser extent the cities of Ray and Tioga.

In addition to purchases by workers, Rangeland Pipeline would purchase some materials necessary for construction of the Project locally. Rangeland Pipeline expects that local purchases made for construction of the Project would primarily include consumables, fuel, equipment rental, space leasing, and miscellaneous construction-related materials (*e.g.*, office supplies), and that state and local governments would realize additional sales tax revenues from these purchases.

Of greater significance to state and local tax revenues would be the sales or use taxes on pipe and other materials and installed equipment associated with the Project. Such purchases are subject to sales tax if the items are manufactured in-state, or use tax when purchased outside the state and imported into the state. Typically, project owners and contractors are entitled to a credit for taxes paid in another jurisdiction (*e.g.*, the point of purchase or manufacture), but generally have an option

to specify the point of delivery as the location for purposes of taxation. Rangeland Pipeline expects that its sales and use tax obligation would benefit local governments.

During operation of the pipeline, Rangeland Pipeline would pay *ad valorem* taxes to local governments crossed by the proposed pipeline. Pipelines are centrally assessed by the state, with the total valuation then allocated among the local counties based on their respective shares of the installed pipelines and facilities. Initially, the cost of construction provides a reasonable proxy for the assessed valuation of a pipeline system. Over time, the assessment focuses more on the facilities' contribution to system-wide income and depreciated value, generally resulting in lower assessment. Rangeland Pipeline has not yet estimated *ad valorem* taxes that would be paid to local governments, but expects that the ongoing revenues would be a significant benefit associated with the Project.

h. Existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site, corridor, or route.

Rangeland Pipeline has consulted with various federal, state, and local governments, as well as local businesses and residents, regarding the Project, including the possibility of upcoming developments in the vicinity of the proposed Project. Rangeland Pipeline's research identified several planned developments in the vicinity of the proposed Project, primarily energy infrastructure projects, but has not identified any potential conflicts with those planned developments.

i. The effect of the proposed site or route on existing scenic areas, historic sites and structures, and paleontological or archaeological sites.

Please refer to Sections B.1, D.2 and D.4 of the Application for a Certificate of Corridor Compatibility for a discussion of the effects of the proposed route on existing scenic areas, historic sites and structures, and archaeological sites.

j. The effect of the proposed site or route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species.

Please refer to Sections B.2, B.3, D.2, and D.4 of the Application for a Certificate of Corridor Compatibility for a discussion of the effects of the proposed route on areas which are unique because of biological wealth or because they are habitats for rare and endangered species.

k. Problems raised by federal agencies, other state agencies, and local entities.

Rangeland Pipeline consulted with several federal, state, and local agencies and governmental entities to identify potential environmental resources and issues of concern in the Project area. Barr, on behalf of Rangeland Pipeline, sent letters to agencies on December 20, 2010, introducing the proposed Project. The agencies to which these letters were sent, as well as the dates of any subsequent correspondence with those agencies, are listed in Table 3. The letters and any responses received by Rangeland Pipeline are provided in Appendix C.

Table 3 Federal, State, and Local Agency Consultations

Agency	Consultation Date	Response Received
U.S. Army Corps of Engineers	December 20, 2010	January 3, 2011
U.S. Department of Interior, Fish and Wildlife Service	December 20, 2010	
U.S. Department of Interior, Bureau of Reclamation	December 20, 2010	
U.S. Department of Interior, Bureau of Land Management	December 20, 2010	
U.S. Department of Agriculture, Natural Resources Conservation Service	December 20, 2010	January 10, 2011
U.S. Department of Agriculture, North Dakota Farm Service Agency	December 20, 2010	
North Dakota Public Service Commission	December 20, 2010	
North Dakota Aeronautics Commission	December 20, 2010	
North Dakota Attorney General	December 20, 2010	
North Dakota Dept. of Agriculture	December 20, 2010	
North Dakota Dept. of Health	December 20, 2010	
North Dakota Dept. of Human Services	December 20, 2010	
North Dakota Dept. of Labor	December 20, 2010	
North Dakota Dept. of Career and Technical Education	December 20, 2010	

Agency	Consultation Date	Response Received
North Dakota Economic Development and Finance	December 20, 2010	
North Dakota Energy Development Impact Office	December 20, 2010	
North Dakota Game and Fish Dept.	December 20, 2010	January 18, 2011
North Dakota Geological Survey	December 20, 2010	
Office of the Governor State of North Dakota	December 20, 2010	
North Dakota Dept. of Transportation	December 20, 2010	January 10, 2011
State Historical Society of North Dakota	December 20, 2010; January 26, 2010	December 30, 2010; January 31, 2010
North Dakota Indian Affairs Commission	December 20, 2010	
Job Service of North Dakota	December 20, 2010	
North Dakota State Land Dept.	December 20, 2010	January 3, 2011
North Dakota Parks and Recreation Dept.	December 20, 2010	January 20, 2011
Division of Community Services, North Dakota Dept. of Commerce	December 20, 2010	
North Dakota State Soil Conservation Committee	December 20, 2010	
North Dakota State Water Commission	December 20, 2010; January 20, 2011	January 14, 2011; January 20, 2011
Williams County Emergency Services	December 20, 2010	
Williams County Park Board	December 20, 2010	
Williams County Highway Dept.	December 20, 2010	January 10, 2011
Williams County Planning and Zoning Administrator	December 20, 2010	
Williams County Water Resource Board	December 20, 2010	

Agency	Consultation Date	Response Received
Williams County Auditor	December 20, 2010	

The following is a discussion of the input provided and any concerns raised by the agencies:

U.S. Army Corps of Engineers

In a letter dated December 28, 2010, the USACE informed Barr on behalf of Rangeland Pipeline that the agency administers Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act, regulating navigable waters and discharge of dredge or fill material in waters of the United States, respectively. See letter in Appendix C. Information was provided regarding Nationwide Permit 12 for Utility Line Activities and Nationwide Permit 14 for Linear Transportation Projects. Any Project impacts to regulated resources must comply with these statutes and USACE guidance. In subsequent communication, the USACE agreed that the Project qualifies for Nationwide Permit 12 and that Rangeland Pipeline will need to submit a Preconstruction Notification due to the potential for species listed under Section 7 of the Endangered Species Act to be present in the Project area. No Project impacts to federally listed species are expected, and Rangeland Pipeline is consulting with the USFWS to confirm that the Project is not likely to affect listed species.

U.S. Department of Agriculture, Natural Resources Conservation Service

In a letter dated January 5, 2011, the NRCS informed the Project that the Service has responsibilities for important farmlands pursuant to the Farmland Policy Protection Act, and it appears that the proposed Project is not subject to this statute. In addition, the NRCS has developed guidelines for the installation of buried utilities in order to minimize impacts to wetlands pursuant to the Wetland Conservation Provisions of the 1985 Food Security Act. The NRCS recommends that impacts to wetlands be avoided by following these guidelines. See letter in Appendix C.

North Dakota Game and Fish Department

In a letter dated January 14, 2011, the Project was informed that the NDGFD's primary concern is with the possible disturbance of native prairie and wooded draws, and asks that impacts to such areas be avoided or minimized. The NDGFD also recommends that the Project take measures to minimize impacts to wetlands and drainage patterns, and that Beaver Creek, a Class III fishery, be crossed

using a directional bore or, in the alternative, that construction activities not take place between April 15 and June 1. See letter in Appendix C.

North Dakota Department of Transportation

The North Dakota Department of Transportation (NDDOT) responded to the Project consultation letter with a letter dated January 6, 2011, in which it stated that the Project will have no adverse effect on state highways. Rangeland Pipeline will need permits and risk management documents if it proposes to conduct any Project work within state highway right-of-way. See letter in Appendix C.

State Historical Society of North Dakota

The State Historic Preservation Office (SHPO) of the State Historical Society recommended in a letter dated December 28, 2010, that a Class I Cultural Resources Source Inventory be prepared for the Project, and possibly a Class III Cultural Resource Inventory and pedestrian survey depending on the results of the Class I Inventory. In addition, if the Project will cross state or federal owned or administered lands, Rangeland Pipeline should consult with those agencies early in the Project schedule.

On January 26, 2011, Rangeland Pipeline provided the SHPO with a Class I and Class III Cultural Resource Inventory for the proposed Project route, and on January 27, 2011, SHPO responded by concurring in the report's findings of "No Significant Sites Affected" and "No Historic Properties Affected" provided that one known and potentially significant site is avoided during construction. Both letters from the North Dakota SHPO are provided in Appendix C.

North Dakota State Land Department

In an e-mail response to the COLT Connector Project consultation letter on January 3, 2011, the Department stated that the proposed Project may cross School Trust Land and that an application for a permit should be submitted online if School Trust Land is crossed. Subsequently, Rangeland Pipeline confirmed that three School Trust Land parcels are crossed by the proposed route and therefore will submit an application to the State Lands Department. School Trust Lands are dedicated to producing income for the schools and designated trust funds of North Dakota. The use of School Trust Land for easements, permits, or mineral development provides significant income to the School Trust. All payments go directly to the State Land Department from the holder of the easement, permit or mineral lease. A copy of the e-mail response from the Department is included in Appendix C.

North Dakota Parks and Recreation Department

The North Dakota Parks and Recreation Department (NDPRD) confirmed in a letter dated January 13, 2011, that the Project, as proposed, would not affect state park lands or Land and Water Conservation Fund recreation projects managed or coordinated by NDPRD. In addition, no plant or animal species of concern or other significant ecological communities are known to occur within one mile of the Project route. The NDPRD recommends that Rangeland Pipeline also contact North Dakota Game and Fish and the U.S. Fish and Wildlife Service, and that impacted areas be restored using native vegetation. See the NDPRD's response letter in Appendix C.

North Dakota State Water Commission

In a letter dated January 12, 2011, the NDSWC indicated that it may require a Sovereign Land Permit for the crossing of waters that are considered sovereign to the State of North Dakota. In addition, the NDSWC noted that Rangeland Pipeline is responsible for proper waste management in floodway areas. Finally, the NDSWC stated that no sole-source aquifers have been designated in North Dakota.

Subsequent communications with the NDSWC confirmed that no sovereign lands or waterways are crossed by the proposed Project route, and therefore Rangeland Pipeline is not required to seek a Sovereign Lands Permit. The NDSWC's response letter and a telephone record of the subsequent conversation regarding sovereign lands are provided in Appendix C. In addition, further research by Barr has determined that no floodway areas would be crossed by the proposed Project route.

Williams County Highway Department

On January 10, 2011, a representative of the Williams County Highway Department called Barr in response to the Project consultation letter. The Department will require a Road Crossing Permit for any encroachments into county highway right-of-way, including road crossings and parallel co-locations. An application for a Road Crossing Permit was subsequently requested and provided to Barr via e-mail. A record of the telephone conversation and the subsequent e-mail and Williams County Road Crossing Permit application form are included in Appendix C.

7. Routing Criteria

Please refer to Section D.3 of the Application for a Certificate of Corridor Compatibility.

8. Discussion of the Relative Value of Each Criteria

Please refer to Section D.4 of the Application for a Certificate of Corridor Compatibility.

9. Criteria to be Evaluated

a. Exclusion Areas

Please refer to Section D.2.a of the Application for a Certificate of Corridor Compatibility.

b. Avoidance Areas

Please refer to Section D.2.b of the Application for a Certificate of Corridor Compatibility.

c. Selection Criteria

Please refer to Section D.2.c of the Application for a Certificate of Corridor Compatibility.

d. Policy Criteria

Please refer to Section D.2.d of the Application for a Certificate of Corridor Compatibility.

e. Design and Construction Limitations

Please refer to Section D.2.e of the Application for a Certificate of Corridor Compatibility.

f. Economic Considerations

Please refer to Section D.2.f of the Application for a Certificate of Corridor Compatibility.

10. Mitigative Measures

Please refer to Section D.5 of the Application for a Certificate of Corridor Compatibility.

11. List of Preparers

Please refer to Section D.6 of the Application for a Certificate of Corridor Compatibility.

12. Maps

a. Proposed Route and New Associated Facilities

Please refer to Section D.7.a of the Application for a Certificate of Corridor Compatibility.

b. Mylar Maps

Please refer to Section D.7.b of the Application for a Certificate of Corridor Compatibility.

c. Aerial Photographs

Please refer to Section D.7.a of the Application for a Certificate of Corridor Compatibility.

13. Other Permits and Approvals

The proposed Project is subject to other relevant laws, regulations, and policies, and Rangeland Pipeline is consulting with other federal, state, and local agencies with jurisdiction over various aspects of the COLT Connector Project. Table 4 lists the key federal, state, and local permits, approvals, and consultation requirements for the proposed Project.

Table 4 Key Permits, Approvals, and Consultation Requirements for the COLT Connector Pipeline Project

Agency	Permit or Approval Required	Status
U.S. Army Corps of Engineers	§404 of the Clean Water Act (CWA), Nationwide Permit 12 for temporary impacts to wetlands.	Preconstruction Notification will be submitted.
U.S. Fish and Wildlife Service	Consultation regarding potential impacts to species listed under Section 7 of the Endangered Species Act.	Consultation in progress.
North Dakota Public Service Commission	Certificate of Corridor Compatibility and Route Permit	Application under consideration.
North Dakota Game and Fish Dept.	Endangered and threatened species consultation.	Consultation complete.
North Dakota Dept. of Health	§401 CWA Water Quality Certification.	Certification will be concurrent with §404 permit.
	NPDES Permit / Construction Stormwater Discharge.	Application will be submitted.
	Permit for Hydrostatic Test Water Discharge.	Application will be submitted.
North Dakota Dept. of Transportation	Permits required for any work within ND DOT right-of-way.	Application will be submitted, if required.
	Overweight and over-width permits for construction equipment.	Application will be submitted.
State Historical Society of North Dakota	Review and comment on the effects of the Project on historic properties; consultation on activities potentially affecting cultural resources.	Consultation in progress; cultural report submitted on January 26, 2011.
North Dakota State Land Dept.	Submit an online application if School Trust land will be crossed by the Project.	Consultation in progress.

Agency	Permit or Approval Required	Status
North Dakota State Water Commission	Water appropriation permits for hydrostatic testing and trench dewatering.	Application will be submitted.
Williams County Highway Dept.	County Road Crossing Permits required to cross county roads.	Application will be submitted.
	Overweight and over-width permits for construction equipment.	Application will be submitted.
Williams County Planning and Zoning Administrator	Conditional Use Permit for pipeline construction in lands zoned for agriculture.	Application will be submitted.

14. Right-of-Way Preparation and Construction and Reclamation Procedures (as Required by Section 49-22-08.1(e) of the North Dakota Century Code)

Along most of the route, construction activities would require a 80- to 100-foot-wide construction right-of-way. In wetland areas, the total width of the construction right-of-way may be reduced to 60 feet. The pipe would generally be installed approximately 100 feet or more from the existing Enbridge pipeline. Wherever the proposed route is parallel to the Enbridge pipeline, the spoil side (the area used to store excavated material) typically would be on the side of the construction right-of-way that is closest to the Enbridge pipeline right-of-way. The working side (equipment work area and travel lane) typically would be on the side of the construction right-of-way that is farthest from Enbridge's existing right-of-way. The final configuration of the COLT Connector construction right-of-way, extra workspace areas, access roads, and contractor yards is still under development.

Extra construction workspace areas would be needed where the proposed route crosses features such as waterbodies, some wetland crossings, steep slopes, roads, railroads, and existing pipelines and utilities. These extra workspaces, which would be outside of the typical construction right-of-way, would be used to stage equipment and stockpile excavated material. Table 5 lists the typical dimensions of extra workspaces that would be used for pipeline construction. Continued refinement of extra workspace areas would continue during the pre-construction phase of the proposed Project. Extra workspaces would typically be established in uplands adjacent to the construction right-of-way and set back 50 feet from sensitive resource boundaries, such as wetlands and the ordinary high water mark of waterbodies. Where appropriate, erosion and sediment control devices would be placed between the extra workspace and sensitive resources to provide further protection. Where woody vegetation is present in the extra workspace, clearing would be limited to the extent practicable.

Table 5 Typical Dimensions of Extra Workspace Areas

Feature	Typical Workspace Area
Open-cut road crossings	50 feet x 50 feet
Bored road and railroad crossings	100 feet x 50 feet or 100 feet x 75 feet
Foreign pipeline and utility crossings	100 feet x 50 feet
Pipeline cross-unders	100 feet x 75 feet
Waterbody crossings <50 feet wide	200 feet x 75 feet
Horizontal directionally drilled waterbody crossings	200 feet x 75 feet
Wetland crossings	200 feet x 75 feet

Rangeland Pipeline would typically use one of two construction methods to cross roadways and railroads. For most paved roads and railroads, and for some unpaved roads, Rangeland Pipeline would use road-boring equipment to bore a tunnel under the crossing area. This method involves digging a pit on each side of the area to be crossed. The pit on the entry side of the boring would be approximately 100 by 75 feet, and the pit on the exit side would be 100 by 50 feet. Boring equipment would be placed in the pits on the entry side and the tunnel would be bored to the exit pit. Tunneling may require several passes of the boring equipment in order to create a hole with sufficient diameter to accommodate the pipeline.

Some unpaved roadways, mainly private drives, could be crossed using the typical trenching or "open-cut" method. To minimize traffic delays at open-cut crossings, Rangeland Pipeline would establish traffic detours before excavating the roadbed. If no reasonable detours are feasible, at least one traffic lane of the road would remain open, except for brief periods when road closure is essential to install the pipeline. Rangeland Pipeline would complete most open-cut crossings of roadways in 1 day or less and would notify local authorities prior to public road closures. In addition, Rangeland Pipeline would attempt to schedule this type of construction to avoid closing roads during peak traffic hours.

In total, the proposed Project route would cross 18 public roads, one railroad, and no state or federal trails.

One mainline valve would be installed within the same construction right-of-way as that of the pipeline. All of the new facilities required for the Project at the COLT Hub and Beaver Lodge Station would be installed within the fenced areas of those facilities.

Pipeline construction activities would take place primarily during daylight hours. The construction period is expected to last approximately 4 to 5 months, extending from the initiation of clearing to the start of restoration.

During construction, all construction equipment would be required to remain within the approved construction right-of-way and extra workspace areas. In addition, construction equipment would be required to use temporary bridges across waterbodies.

Before construction begins, Rangeland Pipeline crews would survey and stake the centerline and exterior boundaries of the construction right-of-way. The exterior boundary stakes would mark the limit of approved disturbance areas that would be maintained throughout the construction period. As a part of this effort, Rangeland Pipeline would contact the applicable state One-Call system to identify and mark the locations of underground utilities. Where the route would pass under high-voltage electrical transmission lines, Rangeland Pipeline would contact the operator of the transmission line and coordinate construction to avoid interference between the transmission line and the construction activities.

Rangeland Pipeline would clear the construction right-of-way and temporary extra workspaces of shrubs and trees. Before or during clearing activities, Rangeland Pipeline would cut fences and livestock barriers as necessary to gain access to the right-of-way. Fences would be braced and secured prior to cutting to avoid damage to the remaining portions of the fences, and temporary gates or fencing would be installed where necessary to contain livestock and maintain access restrictions. To prevent the passage of livestock, each fence line opening would be closed when construction crews are not in that work area. If gaps in natural barriers used for livestock control are created by pipeline construction, the gaps would be fenced according to the landowner's requirements.

The clearing crew may mow, chip, mulch, haul off, or burn all non-merchantable timber. To facilitate proper cleanup and restoration in upland areas, tree stumps outside the ditchline would be ground to no less than 4 inches below the normal ground surface or removed and hauled to an approved disposal facility. No tree stumps would be left on the right-of-way unless requested by the landowner. Stumps along the trench line would be completely removed, ground, or hauled to an approved disposal facility. Disposal sites for stumps and any other woody debris must be approved

for use by the landowner and by Rangeland Pipeline construction management. Woody debris would not be disposed of on agricultural areas or in wetlands.

All merchantable timber would be Rangeland Pipeline property unless prior arrangements had been made with the landowner. Non-merchantable wood may be burned if Rangeland Pipeline obtains the appropriate permits and approvals.

After clearing, the ground surface would be graded where necessary to provide a relatively smooth working surface and a safe working area. To prevent the mixing of topsoil with less productive subsoil during construction, topsoil would be segregated in selected areas where soil productivity is an important consideration (double ditching method). Topsoil would be stripped and segregated along the trenchline in active croplands. The stockpiles of topsoil or other surficial soils would remain in place along the construction right-of-way until the cleanup crew returns to backfill the trench and replace the segregated soils.

Temporary bridges may be installed at some stream crossings along the pipeline route to provide temporary access across the stream for equipment traveling along the construction right-of-way. Bridges would not be used at drainage ditches, intermittent waterbodies, or other waterbodies without fisheries resources or other sensitive resources.

Temporary erosion control measures would be installed in accordance with applicable permit conditions. This would include installation of devices that would slow surface runoff flows (slope breakers) and sediment barriers to prevent sediment from leaving the construction area.

Prior to trench excavation, pipe would be placed (strung) along the construction right-of-way and arranged to be accessible to construction personnel. Specially designed stringing trucks would be used to deliver pipe from the pipe yards to the construction right-of-way. Small portable cranes or side-boom tractors would be used to unload pipe from the stringing trucks and place it along the right-of-way. A mechanical pipe-bending machine would bend individual joints of pipe to the angle required to traverse natural ground contours or to follow the pipeline alignment. In some areas, prefabricated fittings would be used where field bending is not practical.

After stringing and bending are complete, pipe sections would be aligned, welded together, and placed on temporary supports along the edge of the area to be trenched. The welds would be inspected visually and by using radiographic techniques. The pipe would be coated at the factory with fusion-bonded epoxy or a similar material to prevent corrosion, and Rangeland Pipeline would

apply a similar coating to welded joints and electronically inspect the pipeline coating before the pipe is lowered into the trench.

Trenching typically would begin after the pipe has been welded and placed near the trench line. Backhoes or ditching machines would be used to excavate the trenches and place the excavated materials in stockpiles adjacent to the trench.

After welding, coating, and trench excavation are completed, the pipe would be lowered into the trench by side-boom tractors. In sloped areas, trench breakers would be installed as needed to avoid subsurface water flow and erosion along the trench line. Trench breakers would consist of burlap sandbags filled with rock-free subsoil or sand and placed from the bottom of the trench to near the top, surrounding the pipe. Trench breakers would be installed depending on conditions such as the degree and length of the slope, the presence of sensitive resource areas, and proximity to other features such as roads or railroads. Trench breakers would also be installed on slopes greater than 5 percent where the slope is adjacent to a stream or wetland and at the edges of wetlands and/or streams where there is a potential for underground drainage along the pipe due to lower topographic relief adjacent to the feature.

After backfilling, Rangeland Pipeline would conduct two types of testing to ensure the integrity of the pipeline. First, the pipeline would be hydrostatically tested in accordance with PHMSA regulations to ensure that the system would be capable of operating at the design pressure. The testing process would involve filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time. For each pipe section to be hydrostatically tested, Rangeland Pipeline would excavate around each end of the section and install a manifold to the end of the pipe. The manifolds would include valves to allow for the filling and draining of the test section and the release of displaced air, and to connect to testing equipment that would be used to measure and record the pressure within the test section. Once the hydrostatic testing is completed, the manifolds would be removed and the separate pipeline test sections would be welded together. The excavations at the ends of the test sections would remain open only during testing and would be backfilled when the test is completed.

Rangeland Pipeline intends to initiate cleanup, rough grading, and installation of temporary erosion control measures soon after completion of backfilling. After the trench is backfilled, Rangeland Pipeline would re-grade and restore work areas as nearly as practical to the original contour of the land. Topsoil would be redistributed over areas from which it was originally removed. Fences that

had been removed to install the pipeline would be reconstructed. Rangeland Pipeline intends to complete cleanup soon after backfilling.

Disturbed areas would be revegetated in accordance with Rangeland Pipeline mitigation procedures, permit requirements, and landowner agreements. The time between the start of clearing activities and the start of restoration activities would be approximately 4 to 5 months.

Where necessary due to soil compaction concerns, cultivated fields and compacted or rutted areas would be tilled with a deep-tillage device or a chisel plow to loosen compacted soils. After tilling, the bulk density of the soil would be measured using a soil penetrometer.

The timing of revegetation would depend on conditions at the construction site. Temporary revegetation would be established in construction work areas where 14 days or more will elapse between the completion of final grading at a site and the establishment of permanent vegetation, or where there is a high risk of erosion due to site-specific soil conditions and topography. Temporary seeding may be accomplished sooner than 14 days at locations near sensitive resource areas and areas prone to wind and water erosion.

Final seeding operations would be completed soon after final grading. Permanent revegetation would be established using seed mixes that would include native seed varieties commonly occurring in the area.

If property improvements that were present prior to construction (such as fences, gates, irrigation ditches, cattle guards, and reservoirs) are damaged, they would be repaired to pre-construction conditions or better.

15. Discussion of the Manner in Which the Utility will Inform Affected Landowners of Easement Acquisition, and Necessary Easement Conditions and Restrictions (as Required by Section 49-22-08.1(f)(1) of the North Dakota Century Code)

Rangeland Pipeline has contracted with Contract Land Staff (CLS) of Sugar Land, Texas, to act as land agents for the Project and to contact the owners of lands crossed by the proposed route. CLS is authorized to negotiate easement terms and conditions with landowners on behalf of Rangeland Pipeline.

16. Discussion of the Manner in Which the Utility will Compensate Landowners for Easements, Without Reference to the Actual Consideration to be Paid (as Required by Section 49-22-08.1(f)(2) of the North Dakota Century Code)

Rangeland Pipeline is attempting to obtain new right-of-way easements with landowners along the proposed route. Negotiations would be for easements for construction, including extra workspace, or for construction and operation, depending on the parcel. Landowners would receive financial compensation for the easements, including compensation for temporary loss of use during construction, crop damages, and restoration of damage that may occur during construction.

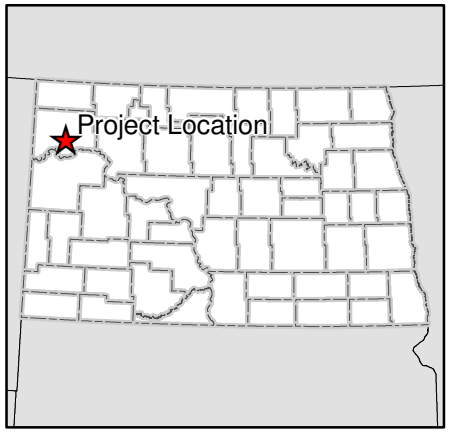
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Appendices

Appendix A

Project Overview Map





COLT Connector Pipeline

State Highway

US Highway

County Road

Railroad

River or Stream

Surface Water

Township Boundary

N

0 1.5 3 6

Miles

Rangeland Energy, LLC

BARR

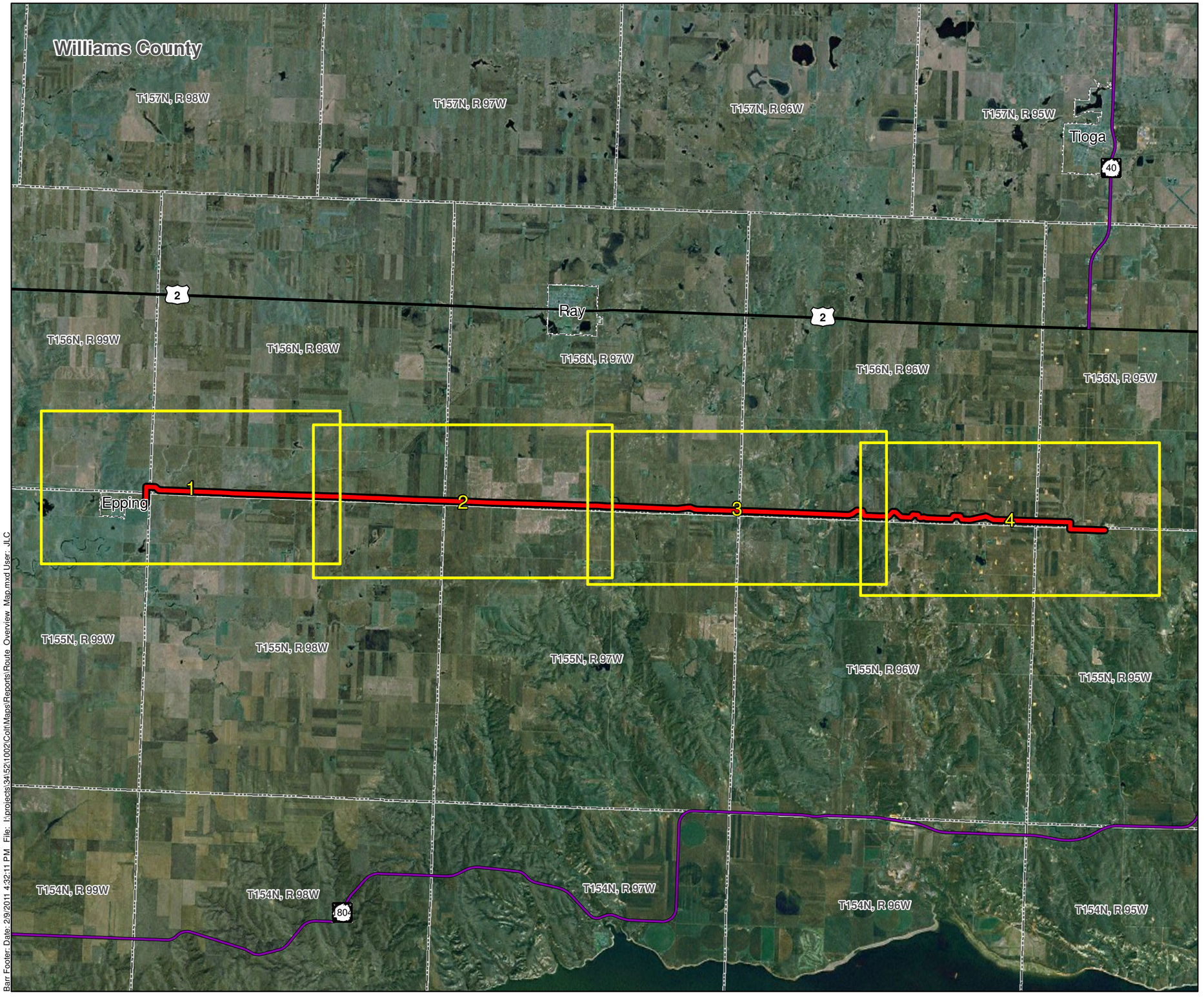
Appendix A

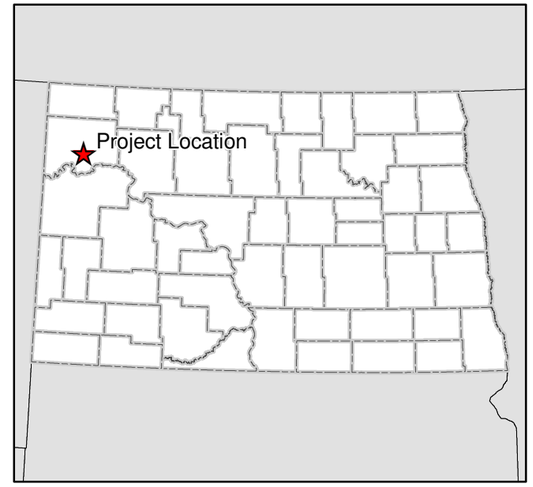
PROJECT OVERVIEW
COLT Connector Pipeline
Williams County, North Dakota

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Appendix B

Project Route Maps





COLT Connector Pipeline

State Highway

US Highway

Route Map Panel

Public Land Survey Township

Municipal Boundaries

N

0 1.5 3 6

Miles

Rangeland Energy, LLC

BARR

Appendix B - Index

ROUTE MAPS
COLT Connector Pipeline
Williams County, North Dakota

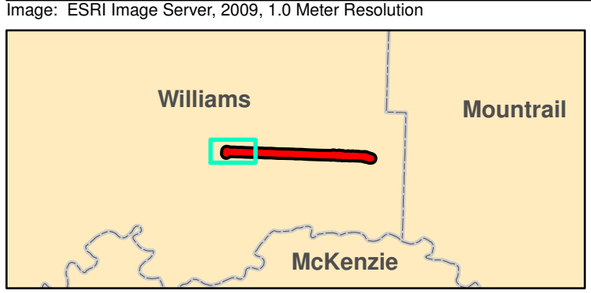
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Barr Footer: Date: 1/26/2011 4:38:32 PM File: I:\projects\34\52\1002\ColtMaps\Reports\Colt Map Book Series.mxd User: JLC

T156N, R99W S26
T156N, R99W S25
T156N, R98W S30
T156N, R98W S29
T156N, R98W S28
T156N, R98W S27
T156N, R99W S35
T156N, R99W S36
T156N, R98W S31
T156N, R98W S32
T156N, R98W S33
T156N, R98W S34
T155N, R99W S2
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T155N, R98W S6
T155N, R98W S5
T155N, R98W S4
T155N, R98W S3
T155N, R99W S11
T155N, R99W S12
T155N, R98W S7
T155N, R98W S8
T155N, R98W S9
T155N, R98W S10

1
2
3
4
Epping
Pump Station

Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Existing Pipeline
- Milepost
- Block Valve
- Pump Station
- 1-Mile Evaluation Corridor
- 200-Foot Field Survey Corridor
- Public Land Survey Sections
- Municipal Boundaries
- Waterbodies
- Watercourses

1 inch = 2,000 feet

0 0.25 0.5 1
Miles

Rangeland Energy, LLC
BARR

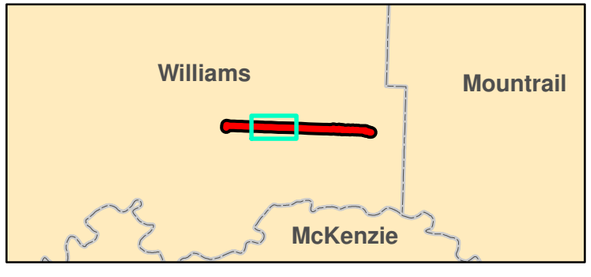
Appendix B - Sheet 01 of 04

ROUTE MAPS
COLT Connector Pipeline
Williams County, North Dakota



Barr Footer: Date: 1/26/2011 4:38:32 PM File: I:\projects\34\52\1002\ColtMaps\Reports\Colt Map Book Series.mxd User: JLC

Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Existing Pipeline
- Milepost
- Block Valve
- Pump Station
- 1-Mile Evaluation Corridor
- 200-Foot Field Survey Corridor
- Public Land Survey Sections
- Municipal Boundaries
- Waterbodies
- Watercourses

N

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

BARR

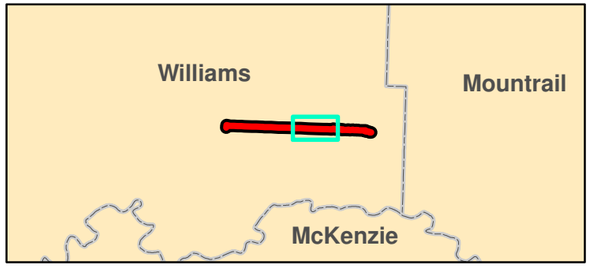
Appendix B - Sheet 02 of 04

ROUTE MAPS
COLT Connector Pipeline
Williams County, North Dakota



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Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Existing Pipeline
- Milepost
- Block Valve
- Pump Station
- 1-Mile Evaluation Corridor
- 200-Foot Field Survey Corridor
- Public Land Survey Sections
- Municipal Boundaries
- Waterbodies
- Watercourses

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

BARR

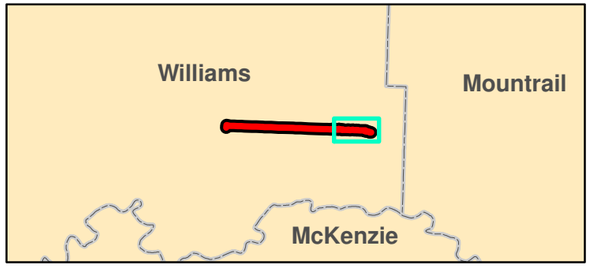
Appendix B - Sheet 03 of 04

ROUTE MAPS
COLT Connector Pipeline
Williams County, North Dakota



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Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Existing Pipeline
- Milepost
- Block Valve
- Pump Station
- 1-Mile Evaluation Corridor
- 200-Foot Field Survey Corridor
- Public Land Survey Sections
- Municipal Boundaries
- Waterbodies
- Watercourses

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

BARR

Appendix B - Sheet 04 of 04

ROUTE MAPS
COLT Connector Pipeline
Williams County, North Dakota

Appendix C

Agency Correspondence

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
NORTH DAKOTA REGULATORY OFFICE
1513 SOUTH 12TH STREET
BISMARCK ND 58504-6640

REPLY TO
ATTENTION OF
North Dakota Regulatory Office

December 28, 2010

RECEIVED
RECEIVED
JAN 11 2011
JAN 03 2011
BARR ENGINEERING CO
BARR ENGINEERING CO

Barr Engineering Company
ATTN: Dan Flo, Environmental Scientist
4700 West 77th Street, Suite #200
Minneapolis, Minnesota 55435

Dear Mr. Flo:

This is in response to a letter received December 27, 2010 requesting Department of the Army, U.S. Army Corps of Engineers (Corps) comments regarding the proposed construction of an 8-inch 20 mile long oil pipeline **(also known as COLT Connector Pipeline)** in a corridor between the town of Epping and the Beaver Lodge/Ramberg Station in Williams County, North Dakota by Rangeland Energy, LLC.

Corps Regulatory Offices administer Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act regulates work in or affecting navigable waters. This would include work over, through, or under Section 10 water. **Section 10** waters in North Dakota include the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. **Section 404** of the Clean Water Act regulates the discharge of dredge or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

Enclosed for your information is the fact sheet for Nationwide Permit 12, Utility Line Activities. Pipeline projects are already authorized by Nationwide Permit 12 **provided the utility line can be placed without any change to pre-construction contours and all other proposed construction activities and facilities are in compliance with the Nationwide's permit conditions and 401 Water Quality Certification is obtained.** Please note the pre-construction notification requirements on page 2 of the fact sheet. **If a project involves any one of the seven notification requirements, the project proponent must submit a DA application.** Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages 12 and 13 of the fact sheet. [The following info is for activities on a reservation] Please be advised that the United States Environmental Protection Agency (EPA), Region 8 has denied 401 Water Quality Certification for activities in perennial drainages and wetlands. Furthermore, EPA has placed conditions on activities in ephemeral and intermittent drainages. It is recommended you contact the U.S. Environmental Protection Agency, Region 8, Attn: Brent Truskowski, 1595 Wynkoop Street, Denver, Colorado 80202-1129 to review the conditions pursuant to Section 401 of the Clean Water Act prior to any construction.

Also enclosed for your information is the fact sheet for Nationwide Permit 14, Linear Transportation Projects. Road crossings are already authorized by Nationwide Permit 14 **provided the discharge does not cause the loss of greater than ½ acre of waters of the United States per crossing and all other proposed construction activities are in compliance with the Nationwide's permit conditions.** Please note the pre-construction notification requirements on the front page of the fact sheet. **If a project involves (1) the loss of waters of the United States exceeding 1/10 acre per crossing; or (2) there is a discharge in a special aquatic site, including wetlands, the project proponent must submit a DA application prior to the start of construction.** Please reference General Condition 27, Pre Construction Notification on page 8 of the fact sheet. Furthermore, a project must also be in compliance with the "Regional Conditions for Nationwide Permits within the State of North Dakota", found on pages

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11 and 12 of the fact sheet; General Conditions for all Nationwide Permits and specific conditions for Nationwide Permit 14.

In the event your project requires approval from the U.S. Army Corps of Engineers and cannot be authorized by Nationwide Permit(s), a Standard or Individual Permit will be required. A project that requires a Standard or Individual Permit is intensely reviewed and will require the issuance of a public notice. A Standard or Individual Permit generally requires a minimum of 120 days for processing but based on the project impacts and comments received through the public notice may extend beyond 120 days.

This correspondence letter is neither authorization for the proposed construction nor confirmation that the proposed project complies with the Nationwide Permit(s).

If any of these projects require a Section 10 and/or Section 404 permit, please complete and submit the enclosed Department of the Army permit application (ENG Form 4345) to the U.S. Army Corps of Engineers, North Dakota Regulatory Office, 1513 South 12th Street, Bismarck, North Dakota 58504. If you are unsure if a permit is required, you may submit an application; include a project location map, description of work, and construction methodology.

If we can be of further assistance or should you have any questions regarding our program, please do not hesitate to contact this office by letter of phone at (701) 255-0015.

Sincerely,

Daniel E. Cimarosti

Daniel E. Cimarosti
Regulatory Program Manager
North Dakota

Enclosures
ENG Form 4345
Fact Sheet NWP 12 and 14

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
P.O. Box 1458
Bismarck, ND 58502-1458

RECEIVED
JAN 10 2011
BARR ENGINEERING CO

January 5, 2011

Dan Flo
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

RE: Rangeland Energy, LLC – COLT Connector Pipeline Project
Williams County, ND

Dear Mr. Flo:

The Natural Resources Conservation Service (NRCS) has reviewed your letter dated December 20, 2010, regarding a new crude oil pipeline in Williams County, North Dakota.

Important Farmlands - NRCS has a major responsibility with Farmland Policy Protection Act (FPPA) in documenting conversion of farmland (i.e., prime, statewide, and local importance) to non-agricultural use. It appears your proposed project is not supported by Federal funding or actions; therefore, no further action is required.

Wetlands – The Wetland Conservation Provisions of the 1985 Food Security Act, as amended, provide that if a USDA participant converts a wetland for the purpose of, or to have the effect of, making agricultural production possible, loss of USDA benefits could occur. NRCS has developed the following guidelines for the installation of buried utilities. If these guidelines are followed, the impacts to the wetland(s) will be considered minimal allowing USDA participants to continue to receive USDA benefits. Following are the requirements: 1) Disturbance to the wetland(s) must be temporary, 2) no drainage of the wetland(s) is allowed (temporary or permanent), 3) mechanized landscaping necessary for installation is kept to a minimum and preconstruction contours are maintained, 4) temporary side cast material must be placed in such a manner not to be dispersed in the wetland, and 5) all trenches must be backfilled to the original wetland bottom elevation.

NRCS would recommend that impacts to wetlands be avoided. If the project requires passage through or disturbance of a wetland, NRCS can complete a certified wetland determination, if requested by the landowner/operator.

If you have additional questions pertaining to FPPA, please contact Steve Sieler, State Soil Liaison, at (701) 530-2019.

Sincerely,

JEROME SCHAAR
State Soil Scientist/MO Leader

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JAN 18 2011
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"VARIETY IN HUNTING AND FISHING"

NORTH DAKOTA GAME AND FISH DEPARTMENT

100 NORTH BISMARCK EXPRESSWAY BISMARCK, NORTH DAKOTA 58501-5095 PHONE 701-328-6300 FAX 701-328-6352

January 14, 2011

Dan Flo
Environmental Scientist
Barr Engineering Co.
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

Dear Mr. Flo:

RE: Rangeland Energy, LLC — COLT Connector Pipeline Project

Rangeland Energy LLC is proposing to build a new 8-inch diameter crude oil pipeline in Williams County, North Dakota. The proposed pipeline will generally parallel an existing Enbridge pipeline between the town of Epping and the Beaver Lodge/Ramberg Station.

Our primary concern with this project is the possible disturbance of native prairie and wooded draws associated with construction of the pipeline and access roads. We ask that work within these areas be avoided to the extent possible, every effort be made to prevent destruction of woody vegetation, and disturbed areas be reclaimed to pre-project conditions.

The National Wetland Inventory indicates various wetlands within the proposed project corridor. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas.

The pipeline route will cross Beaver Creek, a Class III fishery. We recommend that this stream be crossed by directional boring if possible. If this method is not feasible, construction should not take place within the waterway between April 15 and June 1, and controls should be implemented to minimize erosion and sedimentation.

Sincerely,

Paul Schadewald
Chief
Conservation & Communication Division

js

North Dakota Department of Transportation

Francis G. Ziegler, P.E.
Director

Jack Dalrymple
Governor

January 6, 2011

Dan Flo
Environmental Scientist
Barr Engineering Co.
4700 W. 77th Street, Suite 200
Minneapolis, MN 55435

CONSTRUCT A NEW CRUDE OIL PIPELINE, WILLIAMS COUNTY, NORTH DAKOTA

We have reviewed your December 20, 2010, letter.

The project referenced above will have no adverse effect on the North Dakota Department of Transportation highways.

However, if any work needs to be done on highway right-of-way, appropriate permits and risk management documents will need to be obtained from the Department of Transportation District Engineer, Walter Peterson at 701-774-2700.

RONALD J. HENKE, P.E., DIRECTOR - OFFICE OF PROJECT DEVELOPMENT

57:rjh:js
c: Walter A. Peterson, Williston District

RECEIVED
JAN 10 2011
BARR ENGINEERING CO

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

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Mark A. Zimmerman
Director
Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

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December 28, 2010

Mr. Dan Flo
Environmental Scientist
Barr Engineering Company
4700 West 77th Street Suite 200
Minneapolis, Minnesota 55435

ND SHPO Ref: 11-0446 PSC Colt Pipeline, Williams County North Dakota

Dear Mr. Flo:

We have received and reviewed **11-0446 PSC** letter correspondence and map for Colt Pipeline, Williams County North Dakota." Based on a preliminary file search (Class I Cultural Resource Inventory) conducted by our office indicates two prior surveys (MSS 3251 and 9856) that either abut or may cover the proposed project corridor. A number of sites were identified during this work, although some of these sites have not been evaluated for significance (see attached).

We recommend that a Class I Cultural Resource Source Inventory (file and records search) be prepared once the project corridor has been determined and be submitted for review. Recommendations regarding further work (Class III Cultural Resource Inventory, on-the-ground pedestrian survey) will be offered following review of the aforementioned Class I CRI. ***If the project either crosses lands administered by a federal or state agency or involves said permits or monies we recommend consultation with those entities at the earliest time possible.*** Thank you for the opportunity to review this project and we look forward to further consultation on it. Please include the ND SHPO reference number listed above in any further correspondence for this specific project. If you have any questions, please contact either Paul Picha at (701) 328-3574 or ppicha@nd.gov or Susan Quinnell at (701) 328-3576 or squinnell@nd.gov

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director, State Historical Society of North Dakota
enc. as stated
c: Patrick Fahn, North Dakota Public Service Commission

Previous Surveys in NDCRS Data Base:

Kuehn, D. D., and J. Borchert

1984 Archaeological Investigations along the Portal Beaver Lodge to Alexander Pipeline, Williams and McKenzie Counties, North Dakota. University of north Dakota Archaeological Research, Belfield, ND. (MS 3251 on file).

Harty, J. L., P. B. Heiner, and J. G. Morrison

2006 Enbridge Pipelines (North Dakota), LLC, North Dakota Pipeline Expansion Project: A Class II and III Cultural Resource Inventory and Evaluative Testing of Three Sites, Williams County, North Dakota. Merjent, Minneapolis, MN, and Earthworks (aka Kadrmas, Lee & Jackson), Bismarck, ND. (MS 9856, on file).

Recorded Sites in NDCRS Data Base:

32WI78: Rock cairn, destroyed

32WI79: Two stone rings, **unevaluated**

32WI80: One stone ring and flake, **unevaluated**

32WI81: Historic farmstead ruins, **unevaluated**

32WI82: Epping townsite and dump, **unevaluated**

32WI84: Evaluated, not significant and not National Register eligible

32WI 99: **Unevaluated**

32WI961: **Unevaluated**

32WI970: Historic depression, not significant and not National Register eligible

STATE HISTORICAL SOCIETY OF NORTH DAKOTA

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Jack Dalrymple
Governor of North Dakota

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Richard Kloubec
Fargo - Secretary

Albert I. Berger
Grand Forks

Calvin Grinnell
New Town

Diane K. Larson
Bismarck

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Tourism Division

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Parks and Recreation Department

Francis Ziegler
Director
Department of Transportation

Merlan E. Paaverud, Jr.
Director

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January 27, 2011

Judith R. Cooper
Principal Investigator
SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501

NDSHPO REF.: 11-0446a PSC Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota
Cultural Resources Class I and Class III Inventory Report

Dear Judy:

We have reviewed correspondence and project document for: **11-0446a PSC** "A Class I and Class III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota," by Nicholas Smith (SWCA Report No. 11-02, January 2011), and find it acceptable.

We concur with ***"No Significant Sites Affected"*** and ***"No Historic Properties Affected"*** determinations provided the project is of the nature stated, it takes place in the plotted and mapped location, and that site 32WI961 is avoided from impacts as recommended (pp. ii, 36-38, 42) in the report. Also, we concur that historic site 32WI1109 (pp. 39-41) is not significant and not eligible for listing in the National Register of Historic Places. Finally, we would encourage and recommend that an "Unanticipated Discovery Plan for Cultural Resources" be prepared for the project in the event of an inadvertent discovery.

Thank you for the opportunity to review this project. If you have questions please contact either Paul Picha at ppicha@nd.gov or (701) 328-3574 or Susan Quinnell at squinnell@nd.gov or (701) 328-3576.

Sincerely,

Merlan E. Paaverud, Jr.
State Historic Preservation Officer (North Dakota)
and
Director, State Historical Society of North Dakota
c: Patrick Fahn, ND PSC
c: Daniel Flo, Barr Engineering

From: Haupt, Michael L.
To: Daniel S. Flo
Subject: Proposed Rangeland Energy LLC - Colt Connector Pipeline Project
Date: Monday, January 03, 2011 8:53:03 AM

Dan,

Good morning! We received the notice of a proposed oil pipeline that may include ND School Trust land. Please submit an on-line application http://www.land.nd.gov/surface/row/ if School Trust land is proposed to be in this project. Who is the parent company of Rangeland Energy LLC? Let me know if you have questions. Thanks.

Michael L. Haupt

Land Management Professional, CPRM
North Dakota State Land Department
PO Box 5523, Bismarck ND 58506-5523
701-328-2800
mhaupt@nd.gov

Note: You can track the real time status of your right-of-way application 24/7 at http://www.land.nd.gov/surface/row/ using either the ROW number or by entering at least the first three letters of the company name. By checking this site you can find the name, telephone number and email address of the person working on the application as well as its current status in real time.

Jack Dalrymple, Governor
Mark A. Zimmerman, Director

1600 East Century Avenue, Suite 3
Bismarck, ND 58503-0649
Phone 701-328-5357
Fax 701-328-5363
E-mail parkrec@nd.gov
www.parkrec.nd.gov

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JAN 20 2011
BARR ENGINEERING CO

January 13, 2011

Dan Flo
Barr Engineering
4700 West 77th Street, Suite 200
Minneapolis, MN 55435

Re: Rangeland Energy, LLC - COLT Connector Pipeline Project

Dear Mr. Flo:

The North Dakota Parks and Recreation Department has reviewed the above referenced project proposal submitted by Rangeland Energy, LLC to build a new crude oil pipeline located in Williams County.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare species and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, there are no known occurrences within or adjacent to the project area.

Because this information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The lack of data for any project area cannot be construed to mean that no significant features are present. The absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks natural heritage resources. We recommend also contacting the North Dakota Game and Fish Department and the United States Fish and Wildlife Service regarding animal species.

Regarding any reclamation efforts, we recommend that any impacted areas be revegetated with species native to the project area.

Thank you for the opportunity to comment on this project. Please contact Kathy Duttenhefner (701-328-5370 or kgduttenhefner@nd.gov) of our staff if additional information is needed.

Sincerely,

Jesse Hanson

Jesse Hanson, Manager
Planning and Natural Resources Division

R.USNDNHI*2011-007
CD/0107/DL0120

Play in our backyard!

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
701-328-2750 • TDD 701-328-2750 • FAX 701-328-3696 • INTERNET: http://swc.nd.gov

RECEIVED
JAN 14 2011
BARR ENGINEERING CO

January 12, 2011

Dan Flo
Barr Engineering
4700 West 77th Street STE 200
Minneapolis, MN 55435

Dear Mr. Flo:

This is in response to your request for review of environmental impacts associated with the Rangeland Energy, LLC – Colt Connector Pipeline Project.

The proposed project has been reviewed by State Water Commission staff and the following comments are provided:

- Depending on the exact route selected, a Sovereign Land Permit may be required from the State Engineer – application enclosed. If you have any questions please call Jerry Heiser at (701) 328-4935.

- It is the responsibility of the project sponsor to ensure that local, state and federal agencies are contacted for any required approvals, permits, and easements.

- All waste material associated with the project must be disposed of properly and not placed in identified floodway areas.

- No sole-source aquifers have been designated in ND.

There are no other concerns associated with this project that affect State Water Commission or State Engineer regulatory responsibilities.

Thank you for the opportunity to provide review comments. If you have any questions, please call me at 328-4969.

Sincerely,

Larry Knudtson
Research Analyst

LJK:dp/1570

JACK DALRYMPLE, GOVERNOR
CHAIRMAN

TODD SANDO, P.E.
SECRETARY AND STATE ENGINEER

APPLICATION FOR AUTHORIZATION TO CONSTRUCT A PROJECT WITHIN ISLANDS AND BEDS OF NAVIGABLE STREAMS AND WATERS

Office of the State Engineer
900 East Boulevard
Bismarck, ND 58505-0850

Permit No. _____

Project No. 1625

Date Received Stamp Location

SWC USE ONLY

I, the undersigned, do hereby submit the following information to the Office of the State Engineer as an application to construct a project that may impact islands and beds of navigable streams and waters of North Dakota under NDCC Chapter 61-33.

GENERAL INFORMATION:

This Application must include a map from an actual survey, aerial photo or topographic map and plot map (if a development). The size of the map shall be 8½ by 11 inches. The map shall have a north arrow and approximate scale. Indicate the existing or proposed work on the drawing. Plans and specifications must be submitted if project includes construction work.

(1) Project will be located in the: _____ Water Resource District

(2) Legal description to the nearest 40 acre tract: _____ ¼ _____ ¼ Section _____ Township _____ Range _____

(3) Is this application for modification of an existing project ❒Yes ❒No If so, what year was project constructed: _____

By whom: _____

(4) Proposed project involves ❒ water crossing, type _____ ❒ boat dock, ❒ boat ramp, ❒ water intake, ❒dredge, volume _____ cu. yds. ❒ filling, volume _____cu. yds. , type _____,

❒other (explain) _____

(5) Water body on which project will be located: _____

(6) Purpose: _____

(7) Project Description: _____

_____

_____

(8) Contractor, if known: _____

(9) Anticipated construction start date: _____ Completion date: _____

The filing of this application and its approval in no way relieves the applicant or riparian landowner from any responsibility or liability resulting from the construction, operation or failure of the project.

Riparian Land Owner or Organization Sponsor: (Print) _____

Applicant: (Print)_____

Address: _____

_____

Phone: (H) _____

(W) _____

Signature:_____ Date Submitted: _____

(Riparian landowner or Organization Sponsoring the project)

Telephone Memo

BARR

Date: 1/20/11

Time: 5:15 a.m. (p.m.)

Dan Flo (Name) of Barr

☒ placed a call to ☐ received a call from ☐ received a voice mail from ☐ left message/voice mail to

Name	Position	Company	Telephone
Jerry Heiser		N.D. State Water Commission	701-328-4935

Re: COLT Connector Pipeline (Project) ___/___-___ (Project No.)

Notes: Mr. Heiser's name and number were provided in the N.D. State Water Commission response letter to our project/agency consultation letter. I called to ask whether the only perennial stream crossed by the proposed route is "sovereign" and would require a Sovereign Lands Permit to cross. That stream — Beaver Creek — is not a sovereign land/sovereign stream according to Mr. Heiser and therefore a crossing permit is not required.

Telephone Memo

BARR

Date: 1 / 10 / 11

Time: 11 : 20 (a.m.) p.m.

Dan Flo (Name) of Barr

☐ placed a call to ☒ received a call from ☐ received a voice mail from ☐ left message/voice mail to

Name	Position	Company	Telephone
Dennis Nelson		Williams County Highway Dept.	701-577-4521

Re: Rangeland COLT Connector (Project) 34152-1002 (Project No.)

Notes: Mr. Nelson called to inform Rangeland that it will need to obtain a Road Crossing Permit for all county road crossing. Call the county hwy dept. office to request an application by e-mail.

The application must contain:

- If pipeline is parallel and within road right-of-way, provide the distance from the centerline of the roadway to the pipeline.
- If pipeline is crossing the road/highway, provide bore diagrams to show that the top of the pipeline will be at least five feet (5') below the lowest point of the road ditch.

From: Rhonda Woodhams
To: Daniel S. Flo
Subject: COUNTY ROAD CROSSING PERMIT
Date: Monday, January 10, 2011 3:39:58 PM
Attachments: COUNTY ROAD CROSSING PERMIT.doc

COUNTY ROAD CROSSING PERMIT

The Williams County Commission board, or its representative, hereby grants permission to _____ whose address is _____
(Applicant)
to _____ a _____
(place or bore)
through the county road driving surface and across the drainage ditches and right-of-way of County Highway No. _____ located between the following Township and Range sections:

_____

_____

Applicant shall be responsible to leave site in same condition as before crossing was made and repair any damages resulting from crossing.

Applicant shall promptly remove said facilities from highway right-of-way, or shall relocate or adjust said facilities, at its sole cost and expense when requested to do so by the Board or their representative. The County shall not be held liable for damage to said facilities located within the public right-of-way resulting from reconstruction or maintenance of the highway.

Applicant shall mark crossing site with post and sign on each side of roadway. Signs shall be placed on County right-of-way line.

Please notify County Highway as to when work will start and finish, (701)577-4521.

_____	_____
Applicant	Williams County
By_____	Date:_____
Phone_____	

December 20, 2010

U.S. Army Corps of Engineers
North Dakota Regulatory Office
1513 S. 12th St.
Bismarck, ND 58504

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

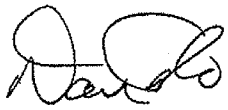
The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

The COLT Connector Pipeline Project will seek a combined Certificate of Corridor Compatibility and Route Permit from the North Dakota Public Service Commission pursuant to Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. Rangeland Energy plans to file the combined Certificate/Permit application in January 2011 and plans to begin construction of the pipeline in the second quarter of 2011.

The purpose of this letter is to inform your organization of the proposal by Rangeland Energy and to seek your comments on the proposed project. A project overview map and description of the proposed route are enclosed with this letter.

If you have questions regarding this proposed project, you are encouraged to contact Dan Flo at Barr by email (dflo@barr.com) or by phone (952-832-2975). If you have any comments, we would greatly appreciate receiving them in writing by January 20, 2011.

Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

U.S. Fish and Wildlife Service
North Dakota Field Office
3425 Miriam Ave.
Bismarck, ND 58501-7926

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

U.S. Bureau of Reclamation
Dakotas Area Office
304 E. Broadway Ave.
Bismarck, ND 58501

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

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The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

U.S. Bureau of Land Management
North Dakota Field Office
99 23rd Ave. W., Suite A
Dickinson, ND 58601

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Natural Resources Conservation Service
North Dakota State Office
220 East Rosser Avenue
Federal Building, Rm. 270
Bismarck, ND 58501

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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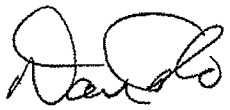
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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Farm Service Agency
1025 28th St S
Fargo, ND 58103

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Public Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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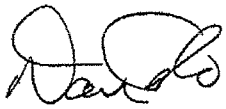
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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Aeronautics Commission
PO Box 5020
Bismarck, ND 58502-5020

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

resourceful. naturally.
engineering and environmental consultants

BARR

December 20, 2010

North Dakota Attorney General
State Capitol
600 E. Boulevard Ave., Dept. 125
Bismarck, ND 58505

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

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Environmental Scientist

Enclosures: Project Overview Map and Site Description

resourceful. naturally.
engineering and environmental consultants

BARR

December 20, 2010

North Dakota Dept. of Agriculture
600 E. Boulevard Ave. Dept. 602
Bismarck ND 58505-0020

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Dept. of Health
600 East Boulevard Avenue
Bismarck, N.D. 58505-0200

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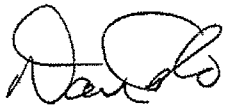
The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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The purpose of this letter is to inform your organization of the proposal by Rangeland Energy and to seek your comments on the proposed project. A project overview map and description of the proposed route are enclosed with this letter.

If you have questions regarding this proposed project, you are encouraged to contact Dan Flo at Barr by email (dflo@barr.com) or by phone (952-832-2975). If you have any comments, we would greatly appreciate receiving them in writing by January 20, 2011.

Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Dept. of Human Services
600 East Boulevard Avenue, Dept 325
Bismarck N.D. 58505-0250

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

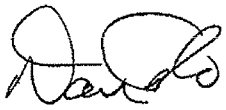
The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

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engineering and environmental consultants

BARR

December 20, 2010

North Dakota Dept. of Labor
600 East Boulevard Avenue, Dept 406
Bismarck ND 58505-0340

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Dept. of Career and Technical Education
600 East Boulevard Avenue, Dept. 270
Bismarck, ND 58505-0610

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Economic Development and Finance
1600 E. Century Ave., Suite 2
Bismarck, ND 58503

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Energy Development Impact Office
PO Box 5523
Bismarck, ND 58506-5523

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

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BARR

December 20, 2010

North Dakota Game and Fish Dept.
100 N. Bismarck Expressway
Bismarck, ND 58501-5095

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Geological Survey
600 East Boulevard Ave.
Bismarck, ND 58505-0840

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Office of the Governor
State of North Dakota
600 East Boulevard Ave.
Bismarck, ND 58505-0001

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

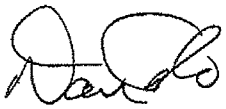
The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Dept. of Transportation
608 East Boulevard Ave.
Bismarck, ND 58505-0700

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

State Historical Society of North Dakota
State Historic Preservation Office
612 East Boulevard Ave.
Bismarck, ND 58505

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Indian Affairs Commission
600 East Boulevard Ave.
1st Floor, Room #117
Bismarck, ND 58505

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Job Service of North Dakota
PO Box 5507
Bismarck, ND 58506-5507

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota State Land Dept.
P.O. Box 5523
Bismarck, ND 58506-5523

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota Parks and Recreation Dept.
1600 E. Century Ave., Suite 3
Bismarck, ND 58503

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Sincerely,



Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Division of Community Services, North Dakota Dept. of Commerce
PO Box 2057
Bismarck, ND 58502-2057

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

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Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

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Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

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engineering and environmental consultants

BARR

December 20, 2010

North Dakota State Soil Conservation Committee
NDSU Extension Service
NDSU Dept. 7000
P.O. Box 6050
Fargo, ND 58108-6050

Re: Rangeland Energy, LLC – COLT Connector Pipeline Project

To Whom It May Concern:

Rangeland Energy, LLC, (Rangeland Energy) is proposing to build a new crude oil pipeline in Williams County, North Dakota and has retained Barr Engineering Co. (Barr) to assist with the environmental review and permitting process for the pipeline project.

The 8-inch-diameter pipeline will be approximately 20 miles long and will generally parallel an existing Enbridge pipeline between the town of Epping and Beaver Lodge/Ramberg Station. The proposed pipeline will transport crude oil from Rangeland Energy's proposed crude oil loading terminal (COLT Hub) located near Epping to a delivery facility to be located approximately eight miles south of Tioga. From there, connections will be provided to the Enbridge and Tesoro transmission pipelines at their respective terminal facilities in order to facilitate the outbound transportation of North Dakota crude oil to high-value markets. The proposed project will add needed capacity to existing transmission pipeline systems while providing a year-round safe and reliable alternative to trucking.

The COLT Connector Pipeline Project will seek a combined Certificate of Corridor Compatibility and Route Permit from the North Dakota Public Service Commission pursuant to Chapter 49-22 of the North Dakota Century Code and Article 69-06 of the North Dakota Administrative Code. Rangeland Energy plans to file the combined Certificate/Permit application in January 2011 and plans to begin construction of the pipeline in the second quarter of 2011.

The purpose of this letter is to inform your organization of the proposal by Rangeland Energy and to seek your comments on the proposed project. A project overview map and description of the proposed route are enclosed with this letter.

If you have questions regarding this proposed project, you are encouraged to contact Dan Flo at Barr by email (dflo@barr.com) or by phone (952-832-2975). If you have any comments, we would greatly appreciate receiving them in writing by January 20, 2011.

Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

North Dakota State Water Commission
900 East Boulevard Avenue
Dept 770
Bismarck, ND 58505-0850

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Sincerely,

Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Williams County Emergency Services
223 E. Broadway, Ste. 202
Williston, ND 58801

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Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Williams County Park Board
P.O. Box 2047
Williston, ND 58802-2047

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Enclosures: Project Overview Map and Site Description

December 20, 2010

Williams County Highway Dept.
213 11th St. W.
Williston, ND 58801

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Dan Flo
Environmental Scientist

Enclosures: Project Overview Map and Site Description

December 20, 2010

Williams County Planning and Zoning Administrator
P.O. Box 2047
Williston, ND 58802-2047

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December 20, 2010

Williams County Water Resource Board
P.O. Box 2047
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Environmental Scientist

Enclosures: Project Overview Map and Site Description

resourceful. naturally.
engineering and environmental consultants

BARR

December 20, 2010

Williams County Auditor
P.O. Box 2047
Williston, ND 58802-2047

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Environmental Scientist

Enclosures: Project Overview Map and Site Description

Appendix D

Class I and III Cultural Resource Inventory

A Class I and Class III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota

Prepared for

Barr Engineering Company

Prepared by

SWCA Environmental Consultants

January 25, 2011

MANUSCRIPT DATA RECORD FORM

1. Manuscript Number:

2. SHPO Reference #:

3. Author(s): Nicholas Smith

4. Title: A Class I and Class III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota

5. Report Date: January 25, 2011

6. Number of Pages: 34

7. Type – I, T, E, O: I

8. Acres: 506.24

9. Legal Location(s) (no quarter sections) with Historic Context Study Unit(s): Consult the township tables in *The North Dakota Comprehensive Plan for Historic Preservation: Archeological Component*, (SHSND 2008; available at http://history.nd.gov/hp/hpforms.html) for Study Unit assignments.
Study Units: LM, CB, KN, HE, SM, GA, JA, GR, NR, SR, SO, SH, YE

COUNTY	TWP	RNG	SEC	SU
Williams	155	95	5	GA
	155	96	6	GA
	155	99	1	GA
	156	95	31	GA
	156	96	31-36	GA
	156	97	31-36	GA
	156	98	31-36	GA
	156	99	36	GA

A Class I and Class III Cultural Resource Inventory of the Rangeland Energy COLT Connector Pipeline, Williams County, North Dakota

Submitted to:

State Historical Society of North Dakota

Prepared for:

Barr Engineering Company
234 West Century Avenue
Bismarck, ND 58503

Prepared by:

Nicholas Smith

Principal Investigator:

Judith Cooper

SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501

SWCA Cultural Resource Report Number 11-02

January 25, 2011

ABSTRACT

This report outlines the results of Class I and Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on behalf of Barr Engineering Company (Barr) between November 5 and 13, 2010, for the COLT Connector Pipeline project. Rangeland Energy, LLC, proposes to construct the approximately 20.35-mile-long COLT Connector crude oil pipeline in Williams County, North Dakota. The jurisdictional agency presiding over the construction of the COLT Connector pipeline is the North Dakota Public Service Commission (NDPSC). In compliance with NDPSC requirements, Barr requested SWCA perform a cultural resource survey to assess the potential effect of activities associated with the construction of the crude oil pipeline. The proposed pipeline will be constructed within a 100-foot-wide temporary construction right-of-way (ROW) and a 30-foot-wide permanent ROW will be maintained after construction is complete. The final construction ROW will be entirely within the inventoried area.

The Class III inventory includes a 200-foot-wide survey corridor centered on the 20.35-mile-long proposed pipeline centerline (493.79 acres). Additional areas totaling 12.45 acres were surveyed to provide alternate alignment options. In total, 506.24 acres were inventoried for the project. The inventoried area is situated on the Spring Brook, Epping, Ray, Ray SE, and Tioga SW, North Dakota (1979) U.S. Geological Survey (USGS) topographic quadrangles and includes parcels in Section 5 of Township (T) 155 North (N), Range (R) 95 West (W); in Section 6 of T155N, R96W; Section 1 of T155N, R99W; in Section 31 of T156N, R95W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R96W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R97W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R98W; and Section 36 of T156N, R99W.

During the inventory, one cultural resource (32WI1109) was newly recorded and one previously recorded site (32WI961) was revisited. 32WI1109 is an historic cultural material scatter consisting of farm machinery and is recommended not eligible for the National Register of Historic Places (NRHP). No further work is recommended at 32WI1109. 32WI961, a prehistoric site containing three depressions, has been left unevaluated regarding its NRHP eligibility and avoidance is recommended. SWCA recommends a 50-foot avoidance buffer be placed around the site and that all construction activities and vehicle traffic remain outside of this buffer zone. With the above stipulation, it is recommended that a determination of *No Historic Properties Affected* and *No Significant Sites Affected* be granted for the project to proceed as planned.

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INTRODUCTION

This report outlines the results of Class I and Class III cultural resource inventory conducted by SWCA Environmental Consultants (SWCA) on behalf of Barr Engineering Company (Barr) between November 5 and 13, 2010, for the COLT Connector Pipeline project. Rangeland Energy, LLC proposes to construct the approximately 20.35-mile-long COLT Connector crude oil pipeline in Williams County, North Dakota. The jurisdictional agency presiding over the construction of the COLT Connector pipeline is the North Dakota Public Service Commission (NDPSC). In compliance with NDPSC requirements, Barr requested SWCA perform a cultural resource survey to assess the potential effect of activities associated with the construction of the crude oil pipeline. The proposed pipeline will be constructed within a 100-foot-wide temporary construction right-of-way (ROW) and a 30-foot-wide permanent ROW will be maintained after construction is complete. The final construction ROW will be entirely within the inventoried area.

The Class III inventory includes a 200-foot-wide survey corridor centered on the proposed 20.35-mile-long pipeline centerline (Figures 1 and Figures 2a–2h). In total, 506.24 acres were inventoried for the project. The inventoried area is situated on the Spring Brook, Epping, Ray, Ray SE, and Tioga SW, North Dakota (1979) U.S. Geological Survey (USGS) topographic quadrant and includes parcels in Section 5 of Township (T) 155 North (N), Range (R) 95 West (W); in Section 6 of T155N, R96W; Section 1 of T155N, R99W; in Section 31 of T156N, R95W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R96W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R97W; in Sections 31, 32, 33, 34, 35, and 36 of T156N, R98W; and Section 36 of T156N, R99W.

For the cultural resource investigation, Judith Cooper served as Principal Investigator. Nicholas Smith, Jolene Schleicher, and Natalie Fewings (all of SWCA) completed the fieldwork. All field notes and photographs are on file at SWCA's Bismarck, North Dakota, office under project number 17121.

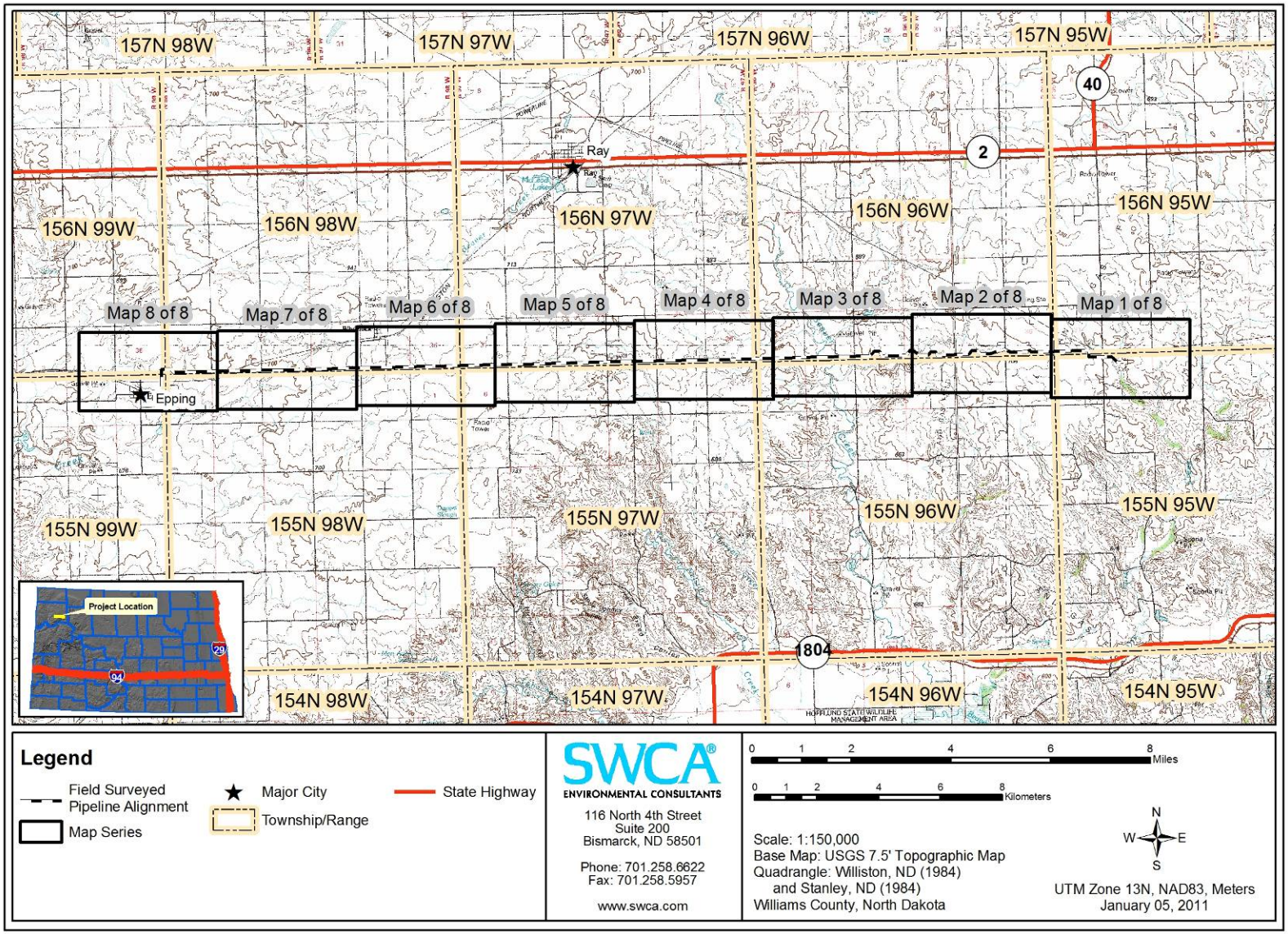


Figure 1. Project location map.

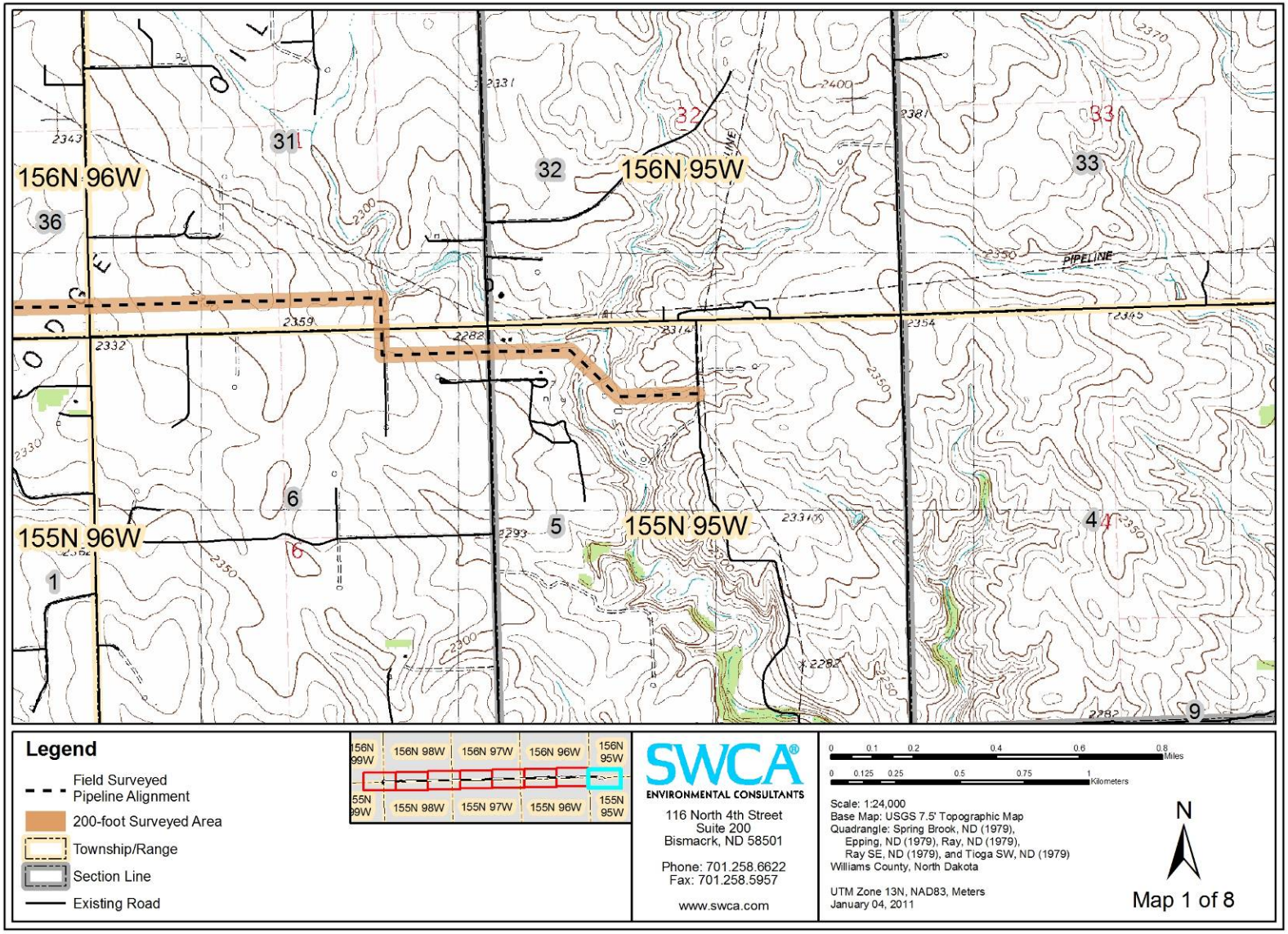


Figure 2a. Project area map 1 of 8.

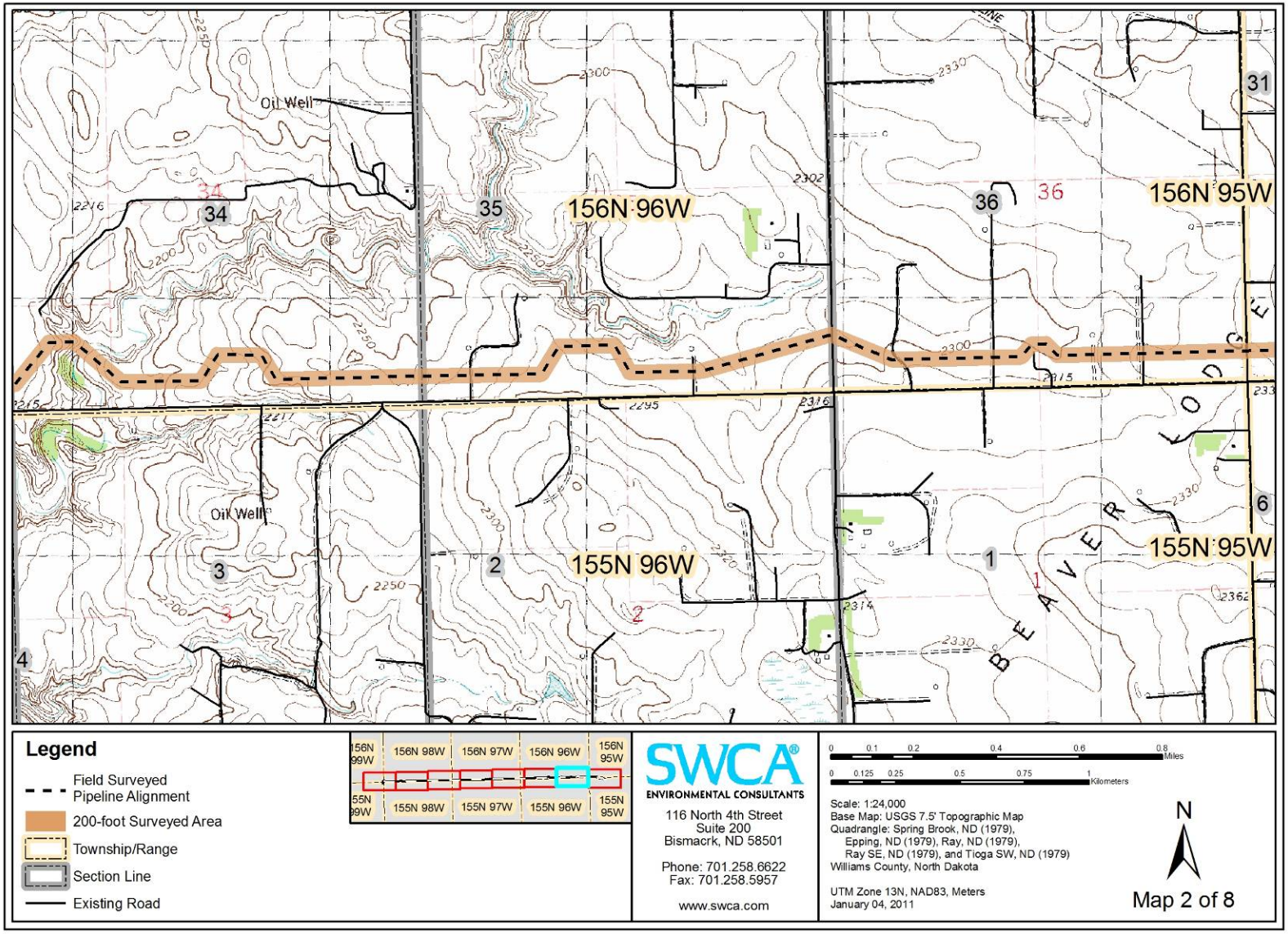


Figure 2b. Project area map 2 of 8.

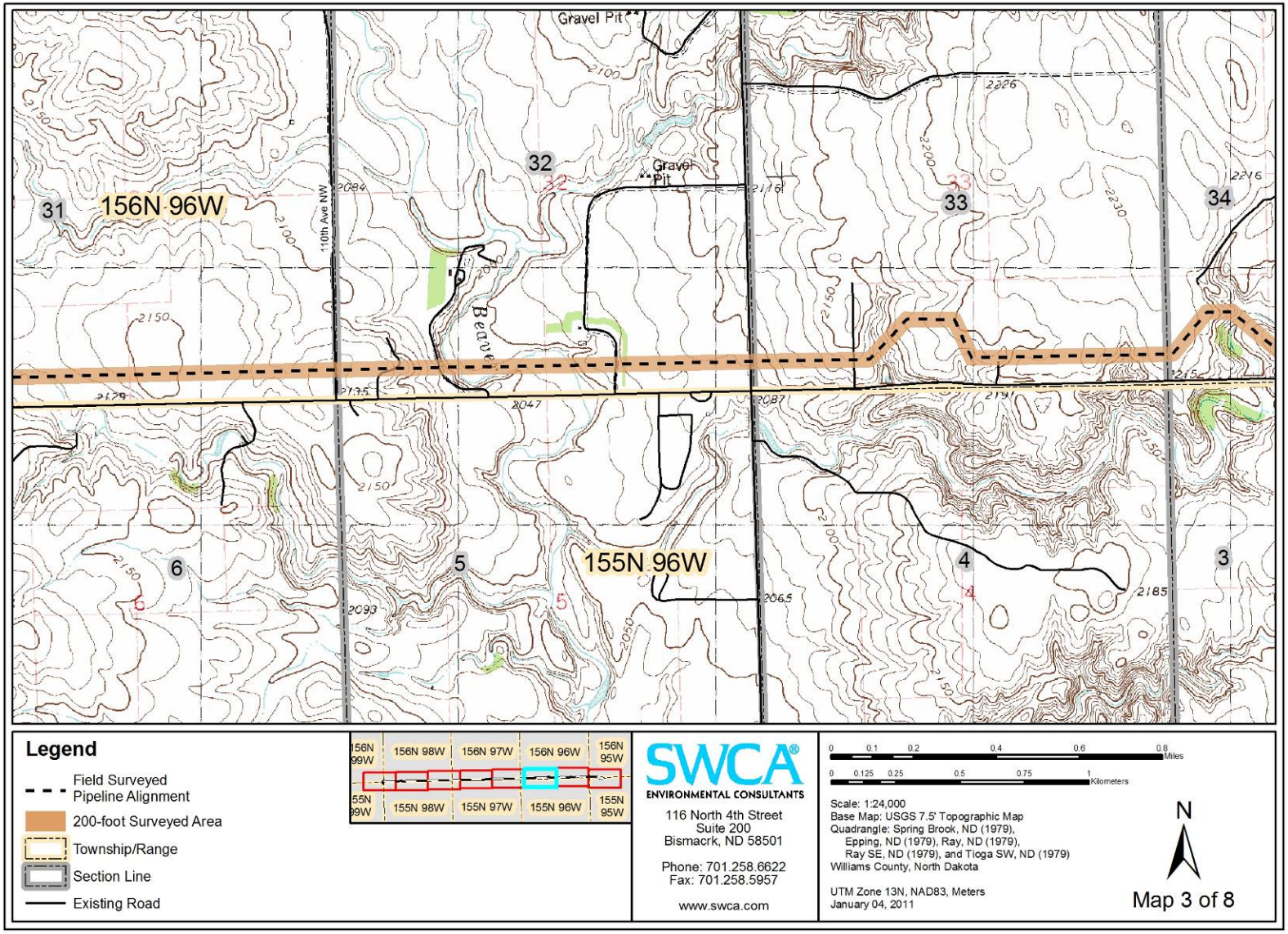


Figure 2c. Project area map 3 of 8.

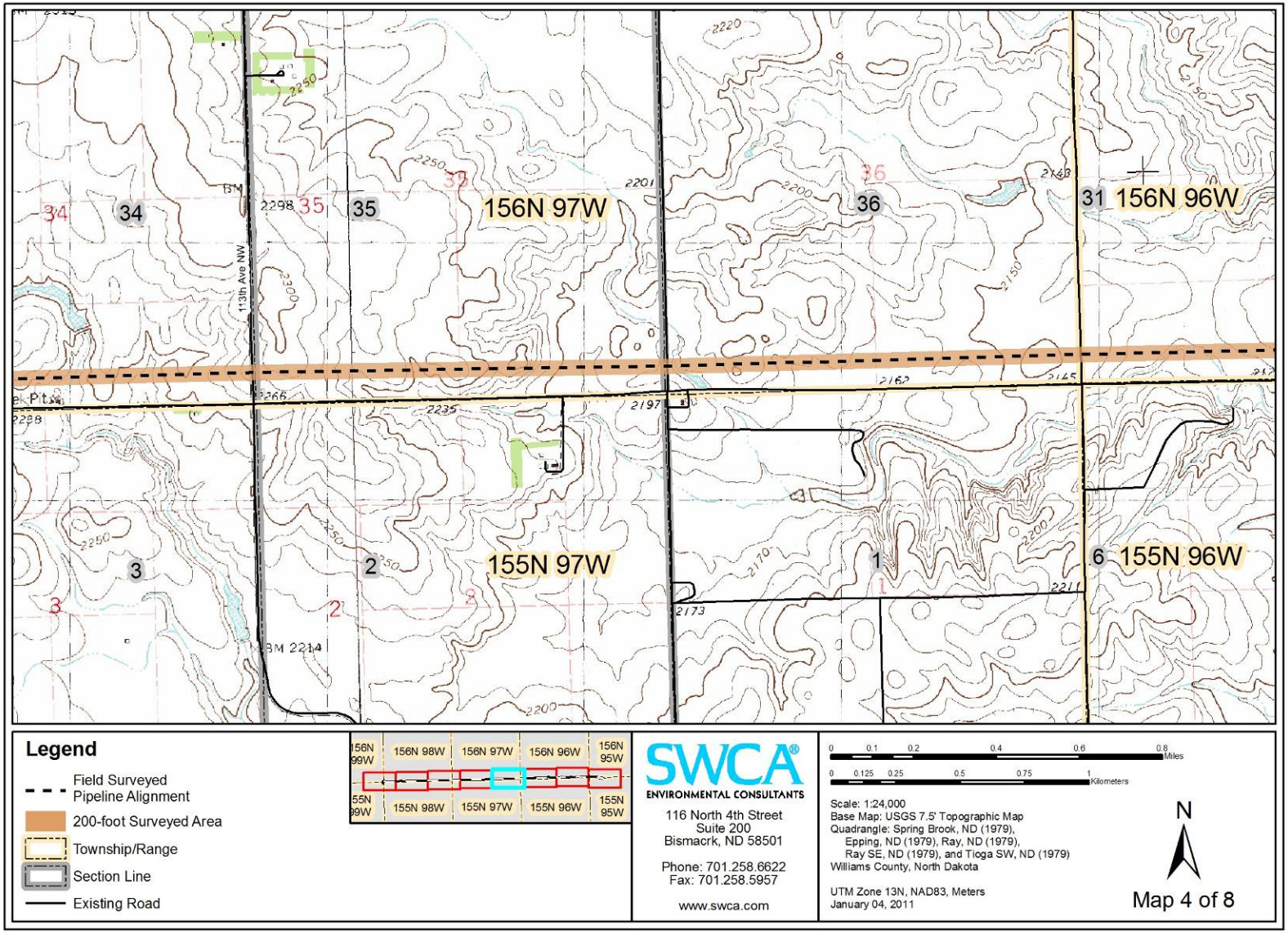


Figure 2d. Project area map 4 of 8.

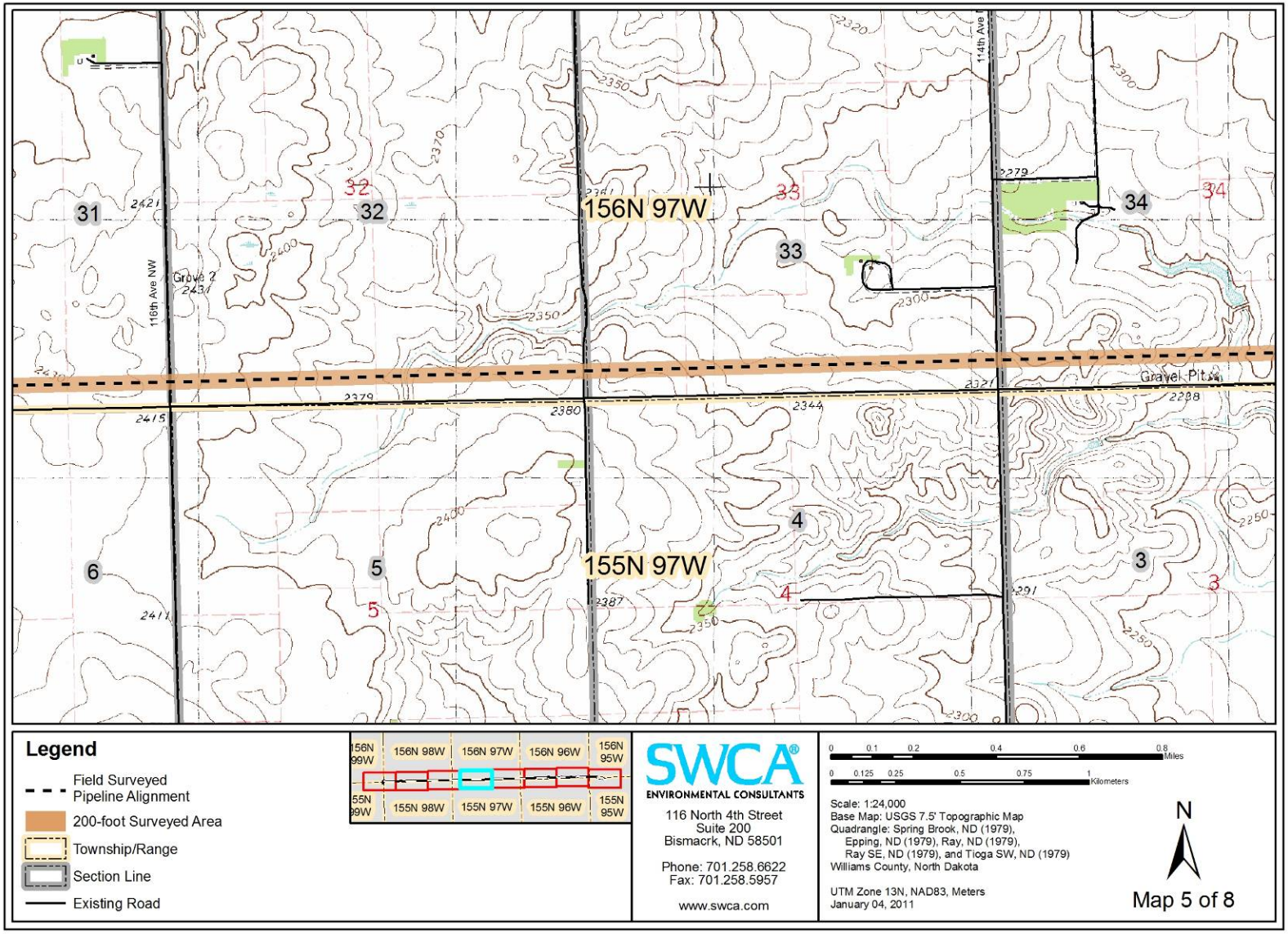


Figure 2e. Project area map 5 of 8.

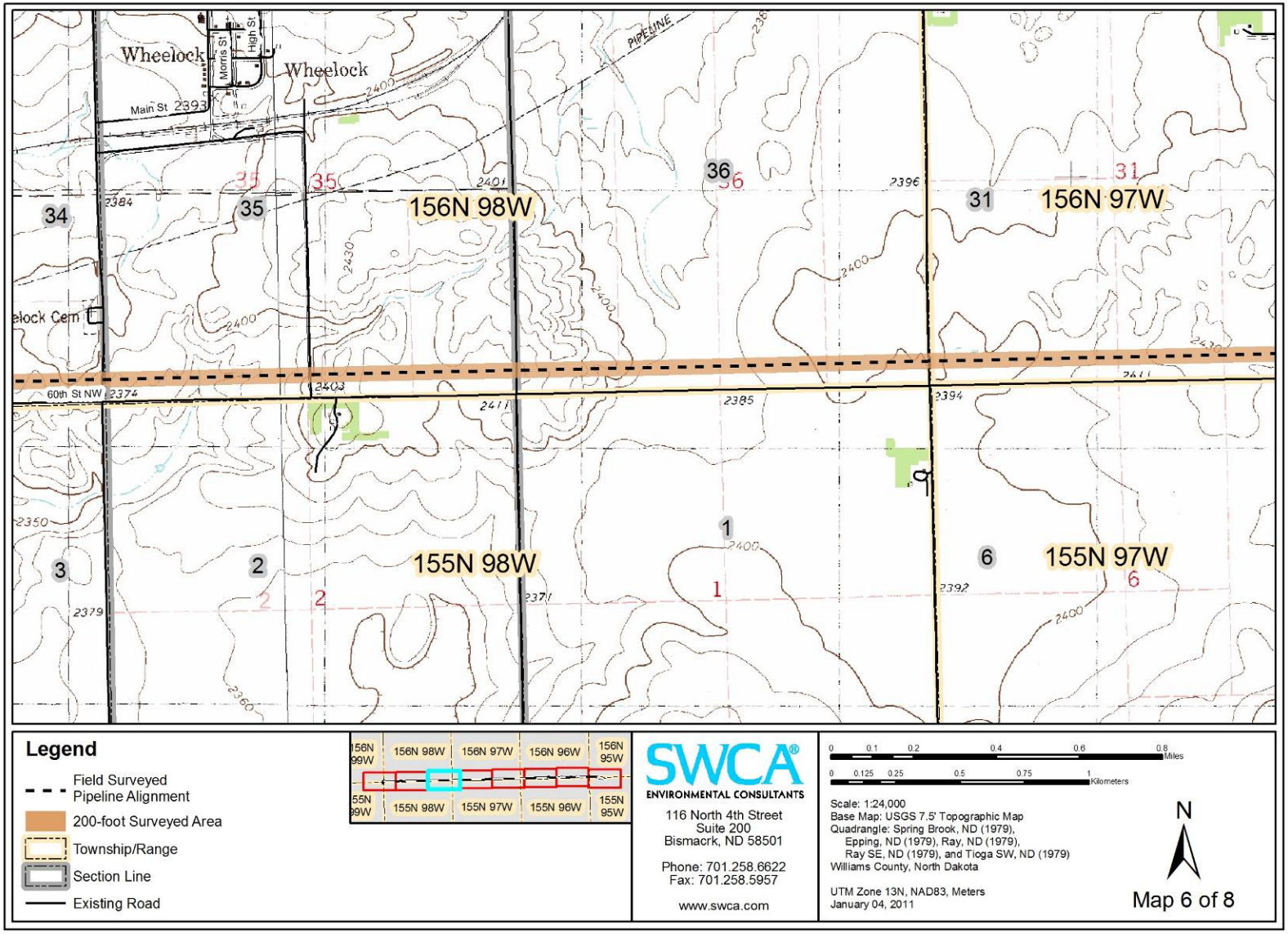


Figure 2f. Project area map 6 of 8.

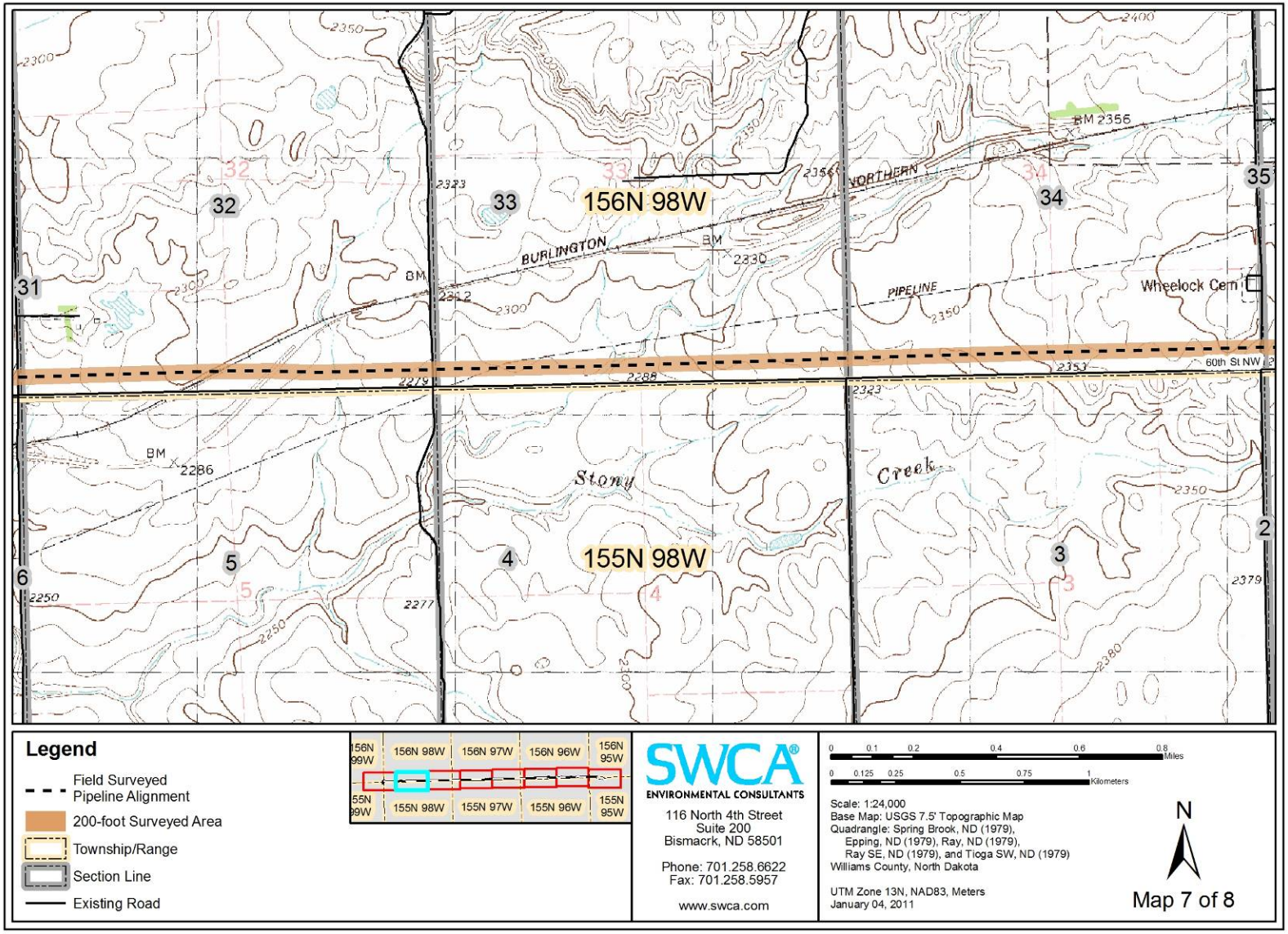


Figure 2g. Project area map 7 of 8.

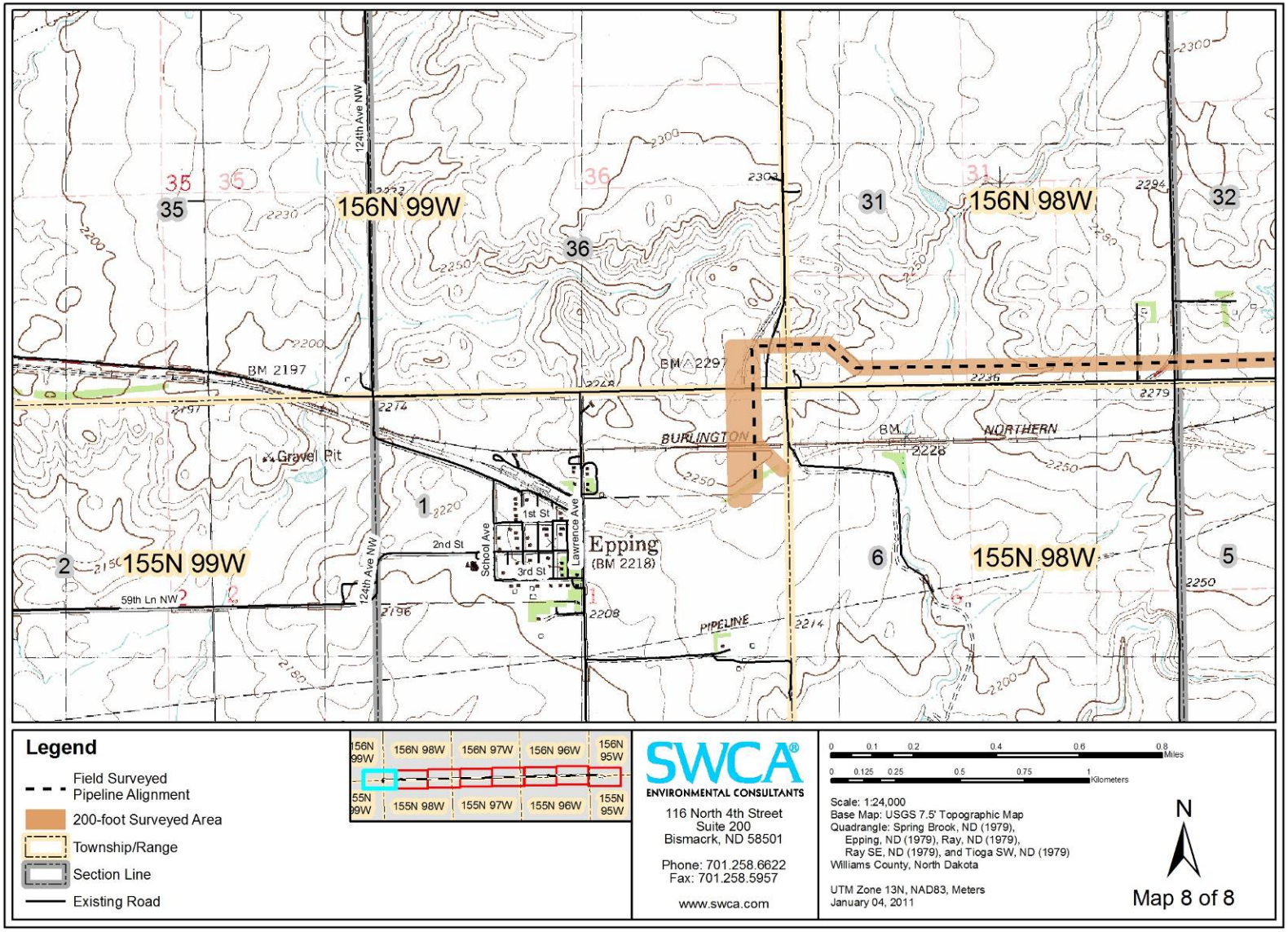


Figure 2h. Project area map 8 of 8.

PROJECT SETTING

TOPOGRAPHY

The project area is located in the Missouri Coteau Slope ecoregion of the Great Plains physiographic province in northwest North Dakota (Fenneman 1931). The Missouri Coteau Slope ecoregion declines in elevation from the Missouri Coteau to the Missouri River, and is characterized by a simple drainage pattern and fewer wetland depressions than the Missouri Coteau (Fenneman 1931). While there are sparse drainages in the immediate project area, the Missouri River is approximately 16 miles directly to the south. The elevation in the project area ranges from approximately 1,700 to 2,450 feet (518 to 747 meters [m]), with the highest elevations in the eastern portions of the project area. The general topography of the proposed project area is fairly consistent—significant surface irregularity and high concentrations of wetlands (Bryce et al. 1998) (Figures 3 and 4). Significantly affected by Wisconsinan stage glaciation, this ecoregion contains a high content of glacial till soils and a sparse drainage pattern (Bryce et al. 1998).



Figure 3. Project area overview depicting general topography of pipeline corridor, facing west.



Figure 4. Project area overview depicting general topography of pipeline corridor, facing north.

CLIMATE

The climate for northwest North Dakota is temperate. Based on climatic data collected from Williston Sloulin AP, North Dakota, between 1971 to 2000, January is the coldest month with a mean daily temperature of 8.0 degrees Fahrenheit (°F) while July is the warmest month with a mean daily temperature of 69.3°F (National Climatic Data Center [NCDC] 2009). Temperature extremes on record range from -50°F at the coldest to 109°F at the warmest. On average, 146 days are frost-free (28°F or above) and the average date of the first fall frost is September 29 and the average date of the last spring frost is May 5 (North Dakota Agricultural Statistics Service 2005). Per annum, Williston Sloulin AP receives 14.16 inches of precipitation (NCDC 2009). The wettest month is June, with an average of 2.36 inches of precipitation received; February is the driest, with only 0.39 inch of precipitation received on average. Forty-three inches of snow are received annually, on average, with the highest accumulations (8.3 inches, on average) received in January (NCDC 2009). The highest monthly snow fall on record occurred in April at which time 30.9 inches of snow fell. Overall, northwest North Dakota, like much of the northwestern Great Plains, is characterized by a moderate to cool climate, with cold, dry winters and mild to warm, dry to moderately wet summers.

HYDROLOGY

Beaver Creek winds throughout the project area and crosses into the survey area in four different locations. The creek eventually drains into Epping Dam Bay approximately 3.5 miles southwest of the western portion of the project area. The Lake Sakakawea portion of the Missouri River is, at its nearest point, approximately 11.5 miles south-southeast of the project area. The project area crosses 15 standing emergent water bodies and one additional unnamed stream.

GEOLOGY

In general, the geology of the project area is characterized by the Holocene to Pleistocene-aged Glacial Sediment Draped Over Pre-existing Topography formation. The Glacial Sediment formation consists of an unbedded, unsorted mixture of clay, silt, sand, and pebbles, and a few cobbles and boulders, and is at least 100 feet (30 m) thick (Clayton 1980).

SOILS

Twelve soil series are present in the project area (Natural Resources Conservation Service [NRCS] 2010); however, the dominant soil type in the project area is fine-loamy till, found on the rises and knolls. Table 1 summarizes the soils within the project area.

Table 1. Summary of Soil Series within the Project Area (NRCS 2010).

Soil Series	Parent Material	Drainage	Slope	Landform
Amor-Zahl-Cabba loams	Loamy residuum weathered from mudstone, fine-loamy till, fine-silty residuum weathered from sedimentary rock	Well drained	9%–25%	Hills, ridges
Arnegard loam	Fine-loamy till	Well drained	0–2%	Swales
Bowdle loam	Sandy and gravelly glaciofluvial deposits	Well drained	0–2%	Terraces
Cabba-Amor-Zahl loams	Fine-silty residuum from sedimentary rock, loamy residuum weathered from mudstone, fine-loamy till	Well drained	25%–60%	Hills, ridges
Farnuf loam	Fine-loamy alluvium	Well drained	0–2%	Flats
Korchea-Divide loams	Fine-loamy alluvium, glaciofluvial deposits	Somewhat poorly drained	0–2%	Channels on floodplains
Lehr loam	Glaciofluvial deposits	Somewhat excessively drained	2%–6%	Rises
Lehr-Williams loams	Glaciofluvial deposits, fine-loamy till	Somewhat excessively drained	0–6%	Rises
Wabek sandy loam	Sandy and gravelly glaciofluvial deposits	Excessively drained	6%–25%	Ridges

Soil Series	Parent Material	Drainage	Slope	Landform
Williams-Bowbells loams	Fine-loamy till	Well drained	0–6%	Rises
Williams-Zahl loams	Fine-loamy till	Well drained	3%–9%	Knolls
Zahl-Williams loams	Fine-loamy till	Well drained	9%–60%	Hills, ridges

FLORA AND FAUNA

The project area is situated within the Missouri Coteau Slope ecoregion, characterized by a simple drainage pattern and wetland depressions (Figure 5). Present vegetation includes such species as needle-and-thread grass (*Stipa comata*), western wheatgrass (*Pascopyrum smithii*), prairie junegrass (*Koeleria macrantha*), and green needlegrass (*Nassella viridula*) (Bryce et al. 1998).



Figure 5. Overview of the vegetation characteristic of the project area, facing west.

Approximately 160 wildlife species are resident or seasonal visitors to the Missouri River ecosystem, and hundreds of native fish species live in the mainstem and tributaries. Some of the animal species that would have been common and available for human use in the Missouri River Valley area—both prehistorically and historically—include fur bearing mammals such as beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), eastern cottontail (*Sylvilagus floridanus*), elk (*Cervus elaphus*), moose (*Alces alces*), mule deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), pronghorn (*Antilocapra americana*), and bison

(*Bison bison*); and bird and waterfowl species such as mallard (*Anas platyrhynchos*), Canada goose (*Branta canadensis*), sharp-tailed grouse (*Pedioecetes phasianellus campestris*), golden eagle (*Aquila chrysaetos*), and bald eagle (*Haliaeetus leucocephalus*) (Seabloom et al. 1978).

Several wildlife species that are listed as threatened or endangered under the Endangered Species Act either currently reside or once resided in Williams County. These include the black-footed ferret (*Mustela nigripes*), gray wolf (*Canis lupus*), interior least tern (*Sterna antillarum*), pallid sturgeon (*Scaphirhynchus albus*), piping plover (*Charadrius melodus*), and whooping crane (*Grus americana*) (U.S. Fish and Wildlife Service 2010).

ENVIRONMENTAL CONSTRAINTS

Preservation of archaeological materials within or adjacent to the project area has been impacted largely by natural erosion including ongoing aeolian and colluvial processes. Secondary sources of impact to archaeological resources include livestock grazing; oil and gas development; and road construction and vehicle traffic. Steep slopes tend to restrict land use to cattle grazing or dryland farming. Some oil and gas development has occurred adjacent to the project area, and is presently increasing as demand for domestic energy sources has grown in recent years. In some places, these varied land uses have resulted in increased ground visibility and removal of overburden, allowing for the identification of numerous sites and an interpretation of high site density. In other cases, though, it has simply removed the archaeological materials and resulted in the identification of low site densities. In combination, these factors may have disrupted the contexts of a moderate percentage of cultural materials.

CULTURAL/HISTORIC OVERVIEW

PREHISTORIC CONTEXTS

The following discussion incorporates a variety of sources to develop a prehistoric overview for the work conducted for this project and includes information from the Garrison Study Unit (GSU) in which the project area is located (Gregg and Bleier 2008). As of 2007, 3,303 archaeological sites were identified in the GSU, the majority of which were identified on ridges (40.5 percent); hills, bluffs, and knolls (24.0 percent); and terraces (10.4 percent) (Gregg and Bleier 2008).

Paleoindian Tradition (ca. 11,500–7,900 years before present [B.P.])

Although speculation exists regarding the possibility of earlier habitation of the Great Plains, the Paleoindian tradition is the oldest of the region, and, in general, is associated with a hunting and gathering adaptation (Gregg 1985). The Paleoindian tradition is subdivided here into six main complexes: Clovis, Goshen, Folsom, Hell Gap/Agate Basin, Alberta/Cody, and Parallel Oblique Flaked. Fourteen Paleoindian archaeological resources have been identified in the GSU (Gregg and Bleier 2008). Paleoindian sites in the GSU include, but are not limited to, the Beacon Island site (32MN234A), the Beacon Island Agate Basin site (32MN234), the Moe site (32MN101), and 32ME946.

The Clovis complex (ca. 11,500–10,800 B.P.), defined by large, fluted lanceolate projectile points, is the earliest unequivocal complex in North America. Clovis artifacts have been found with megafauna, such as mammoth, in buried contexts in the Southwest and Great Plains (Grayson and Meltzer 2002); however, although megafauna were probably dietary constituents, it is debated to what degree Early Paleoindians pursued large game (Cannon and Meltzer 2004; Grayson and Meltzer 2002). In the South Dakota Badlands, the Lange-Ferguson site yields the best evidence for proboscidean exploitation (Hannus 1990). Here, modified mammoth bones are directly associated with a flake and three projectile points were recovered from deposits similar to those containing mammoth, indicating that Clovis hunter-gatherers either killed the animals or scavenged their carcasses (Hannus 1990). Skeletal remains from a single mammoth were unearthed during building construction in 1988 near Powers Lake within the GSU. These remains were shallowly buried, were not radiocarbon dated, and were not appraised for the potential of associated cultural remains (Gregg and Bleier 2008). Few Clovis sites have been recorded in the region. Clovis artifacts were recovered from two sites, a single Clovis point base was recovered from 32ME946 (Floodman 1988) and Clovis points have been recovered from the Beacon Island Agate Basin site (Ahler 2003).

Goshen (ca. 10,900–10,100 B.P.) is a technological complex first identified at Hell Gap, Wyoming (Irwin 1967, 1971), but it is also found at Mill Iron, Montana, Carter-Kerr/McGee, Wyoming, and the Jim Pitts site, located in the South Dakota Black Hills (Sellet 2001). Goshen is poorly understood—the basally thinned, unfluted projectile points share affinities with both Clovis and Folsom, but are also similar to Southern Plains Plainview points. In stratified deposits, Goshen materials typically underlie Folsom (Frison et al. 1996). Plainview or Goshen points were recovered from the Moe site in the GSU (Gregg and Bleier 2008).

The Folsom complex (ca. 10,900–10,200 B.P.) is typified by distinctive fluted lanceolate projectile points. With most large grazers extinct by Folsom times and grasslands dominating the Great Plains, bison populations flourished, providing resources for Folsom hunters (Frison 1991). However, many high-elevation Folsom sites also demonstrate broad diets of diverse small prey (Hill 2007). Probable structures recorded at the Mountaineer and Barger Gulch sites in Colorado suggest long-term occupations in mountain settings (Stiger 2006; Surovell and Waguespack 2007). In North Dakota, there are numerous documented Folsom sites (Gregg 1985), including the Bobtail Wolf (32DU955A), Big Black (32DU955C), and Young-Man-Chief (32DU955D) sites (Root 2000; Shifrin 2000; William 2000). These sites are interpreted as camps, quarries, and lithic workshops where Knife River flint was procured and used for tool production. In the GSU, Folsom points were recovered from the Moe (32MN101) and Beacon Island Agate Basin (32MN234) sites (Gregg and Bleier 2008).

Both the Agate Basin (ca. 10,500–10,000 B.P.) and Hell Gap (ca. 10,000–9,500 B.P.) technocomplexes are typified by lanceolate projectile points with thick lenticular cross-sections (Frison 1991). Based on morphological similarities and stratigraphic evidence, Hell Gap is technologically descended from Agate Basin. Agate Basin and Hell Gap hunter-gatherers were probably specialized bison hunters. Sites like Agate Basin II (Hill 2001) and Casper (Todd et al. 1997) indicate more frequent extraction of marrow and within-bone nutrients, suggesting a greater focus on planning than previously evident. Some sites associated with this tradition have been recorded in North Dakota and South Dakota, but these

mainly consist of isolated and surface finds (Gregg 1985). One of the most significant Paleoindian sites in the GSU is the Beacon Island Agate Basin site (Ahler 2003). Agate Basin points have also been recovered from the Moe site, and an isolated Knife River flint Agate Basin point was recorded in the same report as 32ME946 (Gregg and Bleier 2008).

Alberta (9800–9000 B.P.) is a poorly dated technology that probably descends from Hell Gap and is documented at the Hell Gap, Wyoming, and Hudson-Meng, Nebraska, sites (Agenbroad 1978; Frison 1991). Hudson-Meng is one of the largest documented bison kills and suggests that Alberta people focused on bison hunting (Agenbroad 1978); however, more recent work suggests that humans were not responsible for killing the bison and that they died of a natural event (Todd and Rapson 1999). The Cody Complex (9200–8800 B.P.), which includes stemmed/shouldered Eden and Scottsbluff projectile points and the distinctive Cody knife, apparently arose from Alberta (Frison 1991). These sites are widespread across the northwestern and central Great Plains, with components at the Wyoming Horner I, Finley, and Medicine Lodge Creek sites (Frison and Todd 1986; Frison and Walker 2007) and the Mammoth Meadows, Myers-Hindman, and MacHaffie sites in Montana (Davis 1993). Such sites indicate that Cody adaptations were diverse and utilized large fauna as well as small prey and floral resources (Frison et al. 1996; Galvan 2007). Alberta/Cody sites have been recorded in North Dakota and South Dakota. In fact, Hudson-Meng contains extensive Knife River flint, showing a strong connection to the Missouri River region. A single Scottsbluff point was recorded at the Moe site, and Metcalf et al. (1988) recorded a probable Alberta point as an isolated find near Scorio Creek.

The Parallel Oblique Flaked complex is a catch-all grouping of Paleoindian projectile point types (Gregg 1985) including Angostura, Milnesand, Browns Valley, Lusk, Allen, and Frederick; these range in age from around 9400 to 7900 B.P. All types are lanceolate with parallel oblique flaking. Bison kill-butcheries became rare on the northwestern and northern Great Plains after approximately 8000 B.P. (Frison 1998), perhaps due to severe ecological deterioration that could no longer support large bison populations. Complex excavated and surface sites have been recorded in the Dakotas, including sites on the Missouri River. In the GSU, six archaeological resources defined under the general “Plano” category have been identified (Gregg and Bleier 2008).

Plains Archaic Tradition (ca. 8000–1500 B.P.)

The transition from Paleoindian to Archaic is archaeologically visible as an abrupt shift to large notched projectile points (Frison 1991), perhaps indicating a shift to atlatl propelled darts from hand-thrown spears. This transition is also associated with warming/drying trends that prompted diverse subsistence adaptations among hunter-gatherers (Carlson 1994). Ground stone appears in the Archaic, suggesting a greater focus on processing floral resources. In conjunction with the appearance of pithouses and storage pits in the western intermontane basins, this suggests a shift in subsistence base, a reduction in overall residential mobility, and more predictable seasonal rounds (Frison 1991). In the GSU, 96 Archaic archaeological resources have been identified. Thirty-one of these are from unspecified associations (Gregg and Bleier 2008). Important Archaic-age sites in the GSU include the Mondrian Tree site (32MZ58) and the Moe site (32MN101).

The Logan Creek/Mummy Cave complex (5600–4000 B.P.) is the earliest example of large side-notched projectile points on the northern Great Plains. The blending of the Logan Creek and Mummy Cave for this complex is due to varied nomenclature used among archaeologists regionally for similar archaeological complexes (Gregg 1985). Settlement types associated with this complex include bison kills, transient camps, and some stone circle sites. Four archaeological resources containing large side-notched projectile point varieties have been identified in the GSU (Gregg and Bleier 2008).

The Oxbow complex (5000–4000 B.P.), typified by side-notched, deeply concave-based projectile points, is concentrated in northern Montana, Alberta, and Saskatchewan (Hannus 1994:180) but is also quite common in North and South Dakota, with numerous sites along the Missouri River and its tributary system. Oxbow subsistence apparently centered on bison and sites include bison impoundments and jumps, encampments on stream terraces, stone circles, and processing areas (Hannus 1994; Reeves 1969). However, numerous birds and small mammals were probably exploited (Aaberg et al. 2006:174). Some northern Great Plains sites further yield evidence of complex cultural behavior including bundle burials with elaborate grave goods (Bryan 1991). Four Oxbow archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

The McKean complex (ca. 4500–3400 B.P.) encompasses three distinct sub-phases—the McKean lanceolate, Duncan, and Hannah. The McKean complex is widespread across the Great Plains, and sites from this period can be found associated with bison kills, stone circles, lithic caching, and seasonal settlements (Frison 1991). Slab-lined pit hearths are common, as are ground stone artifacts suggesting a greater reliance on plant resources (Carlson 1994; Frison 1991). McKean complex sites often demonstrate evidence of lithic raw material exchange, including Swan River chert, Tongue River silicified sediment, and Knife River flint (Gregg 1985). In the GSU, 23 archaeological resources dating to the McKean complex have been identified (Gregg and Bleier 2008).

Pelican Lake (ca. 3000–2700 B.P.), typified by broad, thin corner-notched projectile points, is likely a descendant of McKean and is found across the northern and central Great Plains (Frison 1991). This wide spatial distribution may indicate significant population growth in response to the favorable moist conditions of the Sub-Atlantic episode (Reeves 1983). Numerous communal bison kills, such as Head-Smashed-In (Frison 1991), indicate communal bison hunting, but this does not suggest it was an exclusive feature of their subsistence. Rather, Pelican Lake populations probably relied on a broad-based economy across diverse ecozones (Hannus 1994). Thirty-four Pelican Lake archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

Plains Woodland Tradition (ca. 2000–450 B.P.)

Temporally overlapping with the Northwestern Plains Late Archaic, the Plains Woodland tradition is characterized by increased sedentism, garden horticultural activity, expanding regional exchange networks with eastern Woodland populations (Adena and Hopewell), and the elaboration of ceremonial activities and mortuary practices, specifically mound burials (Griffin 1967). Significant technological advances such as bow and arrow and ceramics-use are also apparent (Gregg 1985); however, the fundamental subsistence strategies of the Plains Woodland did not drastically differ from their Archaic predecessors (Zimmerman 1985). It is

assumed that this tradition saw the beginning of horticultural practices in the region. For the purposes of this study the complexes that are classed as belonging to the Plains Woodland include Besant, Sonota, Laurel, Avonlea, Old Woman's, and Blackduck. The Besant and Sonata components are well represented in the GSU (Gregg and Bleier 2008). Of the 184 Woodland sites in the GSU, 119 are unspecified, and 37 are Besant and/or Sonata age sites (Gregg and Bleier 2008).

The Besant complex (ca. 2000–1500 B.P.), typified by small to medium-sized side-notched triangular projectile points, represents the earliest presence of ceramics in North Dakota, probably resulting from eastern woodland influence (Walde 2006). Besant ceramics are more common in the eastern half of the Dakotas; the vessels show a basic conoidal shape and suggest lump modeling manufacture with some coarse cording (Wood and Johnson 1973). Besant sites show extensive use of Knife River flint (Reeves 1970). Site types include stone circle sites, habitations on stream and river terraces, and bison kills. Numerous communal kill sites, including the Ruby bison pound in Wyoming (Frison 1991), suggest that Besant people were sophisticated bison hunters. The Sonota complex (1850–1350 B.P.) appears to be a possible sub-complex of Besant, but differs in that burial mounds are common at Sonota sites (Reeves 1983; Wood 1967). These mounds include rectangular subfloor pits/tombs with dismembered bodies and, commonly, articulated bison remains (Johnson and Johnson 1998). The presence of associated exotic artifacts is often cited as evidence of Hopewell influence on Middle Plains Woodland populations (Johnson and Johnson 1998). In the GSU, 37 Besant/Sonota archaeological resources have been identified, including at 32DU2, the Twin Buttes site (32DU32/32ME617), and 32ME254.

Sites from the Laurel complex (2100–850 B.P.) are generally found in the eastern portions of North Dakota, northern Minnesota, and southern Canada. Laurel pottery and mound building are fairly distinct, but lithics associated with this complex tend to be various and lack a particular style (Gregg 1985).

Avonlea complex (ca. 1800–1000 B.P.) sites occur across the northern Great Plains and are contemporaneous with Besant. This complex includes a variety of site types, including stone circles, bison kills, and rock shelter habitations (Reeves 1970). Avonlea represents the first regional complex to produce arrow points exclusively, suggesting a transition to bow and arrow technology (Frison 1988). Avonlea point types are small and indistinctly side-notched. Saskatchewan Basin Complex: Early Variant pottery is found at Avonlea sites (Byrne 1973). Avonlea subsistence in the north relied heavily on communal bison procurement, but in their southern range bison hunting was supplemented by smaller game (e.g., pronghorn), fish, and seasonal plant exploitation (Smith and Walker 1988). Avonlea sites are relatively rare in the Dakotas (Vickers 1994). In North Dakota, the Evans site (32MN301) contained Avonlea projectile points and ceramics (Schneider and Kinney 1978). Only one Avonlea-aged archaeological resource was identified in the GSU.

Rare in North Dakota is the Old Woman's complex (A.D. 700–1300). This complex is contemporary with the Plains Village tradition, so it would seem likely that many associated sites would be granted the latter designation (Gregg 1985).

The Blackduck complex (A.D. 1150–450) derives from northern Minnesota and was concentrated in southern Manitoba. It is contemporary with both Avonlea and Old Woman's complexes, and with Extended and Terminal Middle Missouri traditions. Some evidence of possible Blackduck pottery has been found along the Missouri River, which suggests trade between the Missouri River villagers and the Blackduck people to the north (Joyes 1970).

Plains Village Tradition (ca. 1050–350 B.P.)

Lehmer (1971) defined the Plains Village tradition as possessing the following diagnostic traits: equal horticulture and hunting and gathering strategies; semi-permanent villages near the Missouri River floodplain; earthlodges; large storage and refuse pits; distinctive ceramics; abundant end scrapers and arrow points; bison scapula hoes; and a well-developed bone tool industry. The Plains Village Tradition is divided into the Middle Missouri tradition (A.D. 969–1500) and the Coalescent tradition (A.D. 1300–1650), discussed below. Only 15 Plains Village archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

Three primary Middle Missouri variants are recognized: Initial Middle Missouri (A.D. 969–1297), Extended Middle Missouri (A.D. 1075–1443), and Terminal Middle Missouri (A.D. 1300–1500) (Eighmy and LaBelle 1996). These represent a continuation and intensification of Northern Plains Woodland lifeways and their appearance coincides with the onset of the Medieval Warm Period (Bryson et al. 1970) when a moisture increase likely permitted horticulture in areas previously characterized by tenuous farming conditions (Wood 2001).

The Initial Middle Missouri Variant (IMMV) is thought to have developed as an outgrowth of the Great Oasis (Tiffany 2007) or via the arrival of eastern populations already exploiting a Plains Village lifeway (Lehmer 1971). The IMMV was concentrated in the southern portions of the Middle Missouri region and characterized by highly fortified villages of large, semi-subterranean rectangular houses (Lehmer 1971; Winham and Calabrese 1998).

The Extended Middle Missouri Variant (EMMV) is concentrated in the northern portions of the Middle Missouri region (Lehmer 1971). EMMV groups resided in small villages of semi-subterranean rectangular houses; southern villages were more often fortified than those in the north (Wood 2001). It is unclear whether the EMMV replaced the IMMV or represents a contemporaneous offshoot of the IMMV. Origins aside, it is assumed that IMMV populations were eventually absorbed into EMMV populations. The final expression of this tradition was the Terminal Middle Missouri (Winham and Calabrese 1998:282). These sites were concentrated in a smaller geographic area along the Missouri River in southern North Dakota and characterized by fewer but much larger villages (Wood 2001). Sites again contained long, rectangular semi-subterranean houses but were highly fortified (Wood 2001). A continuation of the Middle Missouri Tradition is recognized historically as the Siuoan-speaking Mandan and Hidatsa (Wood 2001).

The Coalescent period is temporally divided into Initial (650–350 B.P.), Extended (500–300 B.P.), and Post-Contact Coalescent (300 B.P.–Historic period) (Johnson 1998; Lehmer 1971). The Coalescent Tradition is thought to represent a geographic movement of Central Plains Tradition village-dwelling populations to the Missouri River Valley in South Dakota (Blakeslee 1993). Central Plains Traditions might have migrated from Nebraska and Kansas in response to drought brought on by the Pacific climatic episode (Lehmer 1971). Similar to

Middle Missouri Tradition groups, Coalescent populations practiced an economy split between mixed cultigen horticulture and bison hunting (Johnson 1998).

Initial Coalescent Variant sites are located on bluffs overlooking the Missouri River and its drainages in southern South Dakota. Populations lived in fortified villages consisting of subrectangular to circular/oval earthlodges and often surrounded by complex fortifications (Johnson 1998). Violence amongst Coalescent groups is evidenced at the Crow Creek site (39BF11) where approximately 486 individuals were killed in the village fortification ditch around 625 B.P. (Willey and Emerson 1993). Crow Creek is interpreted as evidence of internecine warfare amongst Initial Coalescent groups over land competition (Zimmerman and Bradley 1993) or, conversely, as evidence of warfare between immigrant Coalescent groups and resident Middle Missouri Tradition peoples (Johnson 1998). The Extended Coalescent Variant apparently descended from the Initial Coalescent sometime in the fifteenth century A.D. Sites are concentrated along the Missouri River and its tributaries in central and northern South Dakota (Krause 2001). Extended Coalescent sites are far more abundant than during the Initial Coalsecent and are characterized by a dispersed, unfortified village structure of circular earthlodges (Johnson 1998; Krause 2001; Lehmer 1971). The Extended Coalescent Variant evolved into the Post-Contact Coalescent during the Protohistoric and Historic and the Coalescent Tradition is recognized as the Arikara (Krause 2001). The last post-contact village was Like-a-Fishhook Village, occupied by the Arikara, Mandan, and Hidatsa; it was abandoned in 1886 when groups relocated to the Fort Berthold Reservation (Smith 1972).

HISTORIC CONTEXTS

European Trade and Exploration (A.D. 1738–1858)

Perhaps the earliest attempts at exploring the Northern Great Plains came as a result of the ventures of Pierre Gaultier de Varennes Siure de la Verendrye (Dill 1983). His travels from New France into North Dakota led him as far as the Missouri River (somewhere near Bismarck), and led to subsequent expeditions by his sons, which went farther south into South Dakota (near Pierre) and west towards the Black Hills. While the elder la Verendrye met the Mandan, his sons encountered the Arikara and other tribes in South Dakota. Their reports heightened interest in the region and the possibilities that existed for trade with its inhabitants.

Following the la Verendryes, a modest fur trade developed in the region, but until the expedition of Captains Meriwether Lewis and William Clark returned successfully from their voyage up the Missouri, the region was considered a wild unknown (Schulenberg 1957).

In 1807, Manuel Lisa established a short-lived post at the mouth of the Bighorn, and by 1809 his St. Louis Missouri Fur Company was building posts among most of the tribes all along the Missouri River. Other notable companies, such as the Northwest Company, Hudson Bay Company, the Columbia Fur Company, and the American Fur Company, soon followed suit (Schulenberg 1957). The life of these posts tended to be short, but they did much to influence the tribes who frequented the Missouri River in both North and South Dakota. Fort Union—at the confluence of the Yellowstone and Missouri rivers—was the last of the great posts, and its waning during the late 1850s saw the fur trade in the Dakotas in its last throes.

Post-Contact Tribal Overview (A.D. 1780–1900)

In addition to the tribes that arose from the Middle Missouri and Coalescent traditions (Mandan, Hidatsa, and Arikara), the northern Great Plains and the Missouri River were also used by countless other tribes since before European contact.

The Assiniboine were known to frequent the northern Missouri River (mainly near the confluence with the Yellowstone), and were active in the fur trade throughout the eighteenth and nineteenth centuries. As well, the Cheyenne were pushed westward by the Chippewa during the middle of the eighteenth century and took up at least a temporary settlement period on the Missouri River. At least one earthlodge village has been attributed to the Cheyenne in eastern North Dakota, and some Cheyenne villages on the Missouri River were located between the Mandan to the north, and the Arikara to the south, where they built earthlodges and pursued horticulture and buffalo hunting (Schlesier 1968).

The Plains Cree and Plains Chippewa also frequented the northern Missouri—mainly near the confluence with the Yellowstone, but also near Fort Clark. Both tribes traded actively with the Mandan and Hidatsa. The Crow, although more westerly in their territory, were related to the Hidatsa and would often trade and visit with the Missouri River tribes (Schulenberg 1957).

Based on linguistic evidence, the Sioux (or Dakota) originated from the southwest Great Lakes region (DeMallie 2001a). The timing of the migration is unclear, but ceramic evidence suggests that the Dakota were living on the plains several centuries before the arrival of Europeans (Hanson 1998). Based on linguistics, it is thought that the Assiniboine split from the Sioux sometime before the mid-seventeenth century (Hanson 1998). The Teton Dakota are divided into seven sub-tribes, including the Oglala, Brule, Sans Arc, Hunkpapa, Blackfeet, Miniconjou, and Two Kettles (Hanson 1998). According to DeMallie (2001a), by the mid-eighteenth century, the Teton Dakota hunted bison in the area east of the Missouri River, their movements limited in part by the Arikara stronghold along the Missouri River. However, a series of smallpox epidemics from 1771 to 1781 devastated the Arikira villages (Johnson 1998) and permitted the Teton Dakota to move west of the Missouri River. Like the Teton Dakota, the Yankton and Yanktonai Dakota occupied the prairies east of the Missouri River and north into Minnesota in the mid-seventeenth century (DeMallie 2001a). By the mid-nineteenth century, the Yankton and Yanktonai occupied the prairies east of the Missouri River from the mouth of the Big Sioux River in the south to the Red River in the north (DeMallie 2001b).

The Reservation Period began in the 1860s and continues into today. This time period contains numerous accounts of hurt feelings and unjust actions—including government actions to stop tribal ceremonialism, forced boarding school education of Indian children, and attempts at termination and relocation to solve the "Indian Problem" in the Dakotas. Regardless of this checkered history, the tribes who lived on, and used, the Missouri River have persisted to the present as strong and vital people with a living culture which has survived for present and future generations.

In the GSU, 5 Hidatsa, 1 Arikara, 1 Chippewa, 1 Mandan, and 21 unspecified historic Native American archaeological resources have been identified (Gregg and Bleier 2008).

Homesteading in the Dakotas (A.D. 1860–1930)

The first homestead in North Dakota was filed in 1868, which was the only homestead filed until 1871. The true rush for homesteads did not take place until 1885. This rush was spurred by the extension of the Northern Pacific Railroad across the Red River from Minnesota (Works Progress Administration [WPA] 1950). Western North Dakota—including Williams County—did not see much settlement prior to the 1890s, and the major settlement of this region did not start in any great numbers until between 1900 and 1910. In general, those homesteaders who selected lands along the Missouri River were able to do some crop farming, but the majority of homesteads were arranged as ranch operations for sheep or cattle.

In addition to the homesteading, which brought an increasing number of people to western North Dakota, the discovery of large deposits of lignite coal further boosted interest in the development of Williams County and the surrounding area (WPA 1950). Although slow at first, the mining industry started to flourish during the 1930s; to this day it remains a major focus of activity which drives the economy of both the county and the state. In total, eight historic Euro-American archaeological resources have been identified in the GSU (Gregg and Bleier 2008).

BACKGROUND RESEARCH

As part of the initial phase of this investigation, SWCA conducted a background search of archaeological and historical literature and records for the project area and surrounding 1-mile area. Researchers searched relevant records holdings at the State Historical Society of North Dakota and other available sources for information regarding previously recorded historic and prehistoric sites located within the project area. Background research was conducted on November 4, 2010.

Results of the background search identified 112 previously recorded cultural resources within the project area and surrounding 1-mile study area (Table 2). Of the 19 prehistoric resources, six are stone circle sites (32WI79, 32WI99, 32WI100, 32WI106, 32WI108, and 32WI316); three are stone circle and cultural material scatter sites (32WI80, 32WI137, and 32WI138); two are stone circle and stone cairn sites (32WI993 and 32WI994); three are stone cairn sites (32WI78, 32WI105, and 32WI1072); two are cultural material scatter sites (32WI82 and 32WI104); one contains a cultural material scatter, stone circle, and stone cairn (32WI107); one contains pits (32WI961); and one is an isolated chipped stone find (32WIX163). Of the 92 historic resources, 84 are buildings (32WI775, 32WI776, 32WI777, 32WI778, 32WI779, 32WI780, 32WI781, 32WI782, 32WI783, 32WI784, 32WI785, 32WI786, 32WI787, 32WI788, 32WI789, 32WI790, 32WI791, 32WI792, 32WI793, 32WI794, 32WI795, 32WI796, 32WI797, 32WI798, 32WI799, 32WI800, 32WI801, 32WI802, 32WI803, 32WI804, 32WI805, 32WI806, 32WI807, 32WI808, 32WI809, 32WI810, 32WI811, 32WI812, 32WI813, 32WI814, 32WI815, 32WI816, 32WI817, 32WI818, 32WI819, 32WI820, 32WI821, 32WI822, 32WI823, 32WI824, 32WI825, 32WI826, 32WI827, 32WI828, 32WI829, 32WI830, 32WI831, 32WI832, 32WI833, 32WI834, 32WI835, 32WI836, 32WI837, 32WI838, 32WI839, 32WI840, 32WI842, 32WI843, 32WI844, 32WI845, 32WI846, 32WI847, 32WI848, 32WI849, 32WI850, 32WI851, 32WI852, 32WI853, 32WI854, 32WI855, 32WI856, 32WI869, and 32WIX433); two are bridges

(32WI920 and 32WI924); one is a cultural material scatter and depression (32WI970); one is a grainery, foundation depression, well, and cultural material scatter (32WI81); one is a windmill, foundation, and cultural material scatter (32WI1070); one is a homestead (32WI109); one is a quarry/mine (32WIX113); and one is isolated machinery (32WIX164). The remaining site (32WIX136) is a cultural material scatter of unknown age. Regarding eligibility for listing on the National Register of Historic Places (NRHP), 80 of the previously recorded sites have been recommended as potentially eligible, 18 have been left as unevaluated, and the remaining 14 are recommended not eligible. One previously recorded site, 32WI961, is within the project area, and was revisited during the current inventory (discussed below).

Table 2. Previously Recorded Resources.

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI78	None	SE¼ SE¼ SE¼, Section 34, T156N, R96W	Stone Cairn	Unknown Prehistoric	Unevaluated
32WI79	None	SW¼ SE¼ SW¼, Section 33, T156N, R96W	Stone Circle	Unknown Prehistoric	Unevaluated
32WI80	None	SW¼ SW¼ SW¼, Section 34, T156N, R97W	Stone Circle, Cultural Material Scatter	Unknown Prehistoric	Unevaluated
32WI81	None	SW¼ SW¼ SW¼, Section 31, T156N, R98W	Grainery, Foundations, Depression, Well, and Cultural Material Scatter	Unknown Historic	Unevaluated
32WI82	None	S½ SE¼ SW¼, Section 36, T156N, R99W	Cultural Material Scatter	Unknown Historic	Not Eligible
32WI99	Horse Skull Site	NE¼ NE¼ NW¼, Section 5, T155N, R95W	Stone Circle	Unknown Prehistoric	Unevaluated
32WI100	None	NE¼ SW¼ NW¼, Section 5, T155N, R95W	Stone Circle	Unknown Prehistoric	Unevaluated
32WI104	None	SE¼ SE¼ NE¼, Section 2, T155N, R96W	Cultural Material Scatter	Unknown Prehistoric	Unevaluated
32WI105	None	SE¼ SE¼ NW¼, Section 2, T155N, R96W	Stone Cairn	Unknown Prehistoric	Unevaluated

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI106	High Swale Ring	SW¼ SE¼ NE¼, Section 4, T155N, R96W	Stone Circle	Unknown Prehistoric	Unevaluated
32WI107	None	S½ SE¼ NE¼, Section 34, T155N, R96W	Stone Circle, Stone Cairn, and Cultural Material Scatter	Unknown Prehistoric	Unevaluated
32WI108	None	SE¼ SW¼ NE¼, Section 1, T155N, R97W	Stone Circle	Unknown Prehistoric	Potentially Eligible
32WI109	None	NE¼ NW¼ SW¼, Section 4, T155N, R97W	Homestead	Unknown Historic	Unevaluated
32WI137	None	E½ SW¼ SE¼, Section 5, T155N, R95W	Stone Circle and Cultural Material Scatter	Unknown Prehistoric	Potentially Eligible
32WI138	None	S½ SW¼ NE¼, SE¼ SE¼ NW¼, NE¼ NE¼ SW¼, NW¼ NE¼ SE¼, SW¼ SE¼ NE¼, Section 5, T155N, R95W	Stone Circle and Cultural Material Scatter	Unknown Prehistoric	Unevaluated
32WI316	None	SE¼ SE¼ SW¼, Section 29, T156N, R96W	Stone Circle	Unknown Prehistoric	Unevaluated
32WI775	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI776	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI777	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI778	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI779	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI780	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI781	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI782	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI783	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI784	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI785	Epping Iron Works	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI786	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI787	None	SE¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI788	None	SE¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI789	None	SW¼ NW¼ NE¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI790	None	SW¼ NW¼ NE¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI791	None	SW¼ NW¼ NE¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI792	None	SE¼ SE¼ NW¼, NE¼ NE¼ SW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI793	Epping Lutheran	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI794	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI795	Sons of Norway Hall	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI796	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI797	CF Carpenter and Co.	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI798	Buffalo Trails Museum	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI799	Ellingson General Merch.	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI800	Buffalo Inn Café	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI801	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI802	Epping Hardware and Implement	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI803	None	NE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Not Eligible
32WI804	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI805	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI806	None	SE¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI807	None	SW¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Not Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI808	None	NW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI809	None	NW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI810	None	NW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI811	None	NW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI812	None	NW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI813	St. Mary's Catholic Church	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI814	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI815	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI816	None	SW¼ SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI817	None	SE¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI818	None	SW¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI819	None	SW¼ NE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1930–1945	Potentially Eligible
32WI820	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI821	None	SW¼ NE¼ NW¼, NW¼ SE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI822	None	SW¼ NE¼ NW¼, NW¼ SE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI823	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI824	None	S½ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Not Eligible
32WI825	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI826	None	SE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI827	None	SE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI828	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1930–1945	Potentially Eligible
32WI829	None	SE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI830	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI831	None	NW¼ SE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI832	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI833	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI834	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Not Eligible
32WI835	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI836	Wheelock Garage	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI837	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI838	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI839	None	SW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI840	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI841	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI842	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI843	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI844	None	SW¼ SE¼ SW¼, Section 26, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI845	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI846	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI847	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI848	Wheelock Lutheran Church	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI849	None	NW¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Unknown Historic	Potentially Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI850	None	NE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Unknown Historic	Potentially Eligible
32WI851	None	N½ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI852	None	NE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI853	None	NE¼ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Not Eligible
32WI854	Farmer's Union Elevator	NE¼ SE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1900–1915	Potentially Eligible
32WI855	None	E½ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI856	None	E½ NE¼ NW¼, Section 35, T156N, R98W	Historic Building	Unknown Historic	Potentially Eligible
32WI869	Trinity Lutheran Church	NE¼ NE¼ NW¼, Section 31, T156N, R95W	Historic Building	Historic 1915–1930	Potentially Eligible
32WI920	Bridge	NE¼ NE¼ NE¼, Section 1, T155N, R99W; SE¼ SE¼ SE¼, Section 12, T155N, R99W	Historic Bridge	Historic 1930–1945	Not Eligible
32WI924	Bridge	SE¼ SE¼ SW¼, Section 19, T156N, R96W; NE¼ NE¼ NW¼, Section 30, T156N, R96W	Historic Bridge	Historic 1915–1930	Not Eligible
32WI961	None	SE¼ SW¼ SE¼, Section 34, T156N, R96W	Prehistoric Pit	Unknown Prehistoric	Unevaluated
32WI970	None	SE¼ SW¼ SW¼, Section 34, T156N, R96W	Depression and Cultural Material Scatter	Unknown Historic	Not Eligible

Site Number	Site Name	Legal Location (S/T/R)	Site Type	Cultural Affiliation	NRHP Recommendation
32WI993	None	NE¼ NE¼ SE¼, Section 11, T155N, R96W	Stone Circle and Stone Cairn	Unknown Prehistoric	Unevaluated
32WI994	None	SE¼ SE¼ SE¼, Section 11, T155N, R96W	Stone Circle and Stone Cairn	Unknown Prehistoric	Unevaluated
32WI1070	None	SE¼ NW¼ SE¼, Section 8, T155N, R95W	Windmill, Foundation, and Cultural Material Scatter	Unknown Historic	Unevaluated
32WI1072	None	NE¼ SW¼ NE¼, Section 8, T155N, R95W	Stone Cairn	Unknown Prehistoric	Unevaluated
32WIX113	Iverson Oil Well	SW¼ SW¼, Section 6, T155N, R95W	Quarry/Mine	Unknown Historic	Not Eligible
32WIX136	None	NE¼ SW¼ NW¼, Section 11, T155N, R99W	Cultural Material Scatter	Unknown	Not Eligible
32WIX163	None	Section 36, T156N, R96W	Isolated Chipped Stone	Unknown Prehistoric	Not Eligible
32WIX164	None	Section 35, T156N, R98W	Isolated Machinery	Unknown Historic	Not Eligible
32WIX433	None	SE¼ NW¼, Section 1, T155N, R99W	Historic Building	Historic 1900–1915	Not Eligible

NRHP = National Register of Historic Places
S/T/R = Section/Township/Range

Twelve previous studies, or other research projects, have been performed within the 1-mile study area. These include 11 cultural resource inventories and one evaluative testing project. A bibliographic listing of previous archaeological and historic studies for project lands and the 1-mile study area in Williams County, North Dakota, is provided in Appendix A.

FIELDWORK METHODS

Fieldwork was designed so that project archaeologists could collect all appropriate and necessary data for the completion of the project report of results and recommendations, and to ensure accurate completion of site forms for all resources encountered.

In accordance with the scope of work, archaeologists surveyed a 200-foot-wide corridor using parallel linear transects with spacing not exceeding 30 m. The ground surface was examined for artifacts, features, or other evidence of cultural occupation. Cut banks, eroded surfaces, and other areas with significant exposure were examined intensively throughout fieldwork, especially where previously recorded cultural resources existed. In areas with high vegetation cover and high probability of cultural resources, survey transects were reduced to 10 m to maintain adequate visibility. Ground visibility during the project ranged from 0 to 30 percent, with highest visibility in agricultural fields and heavily grazed areas. No snow cover was present at the time of inventory.

Where cultural resources were located, project archaeologists made an intensive effort to fully and accurately establish the extent and boundaries of new and previously recorded sites. As such, sites were mapped using sub-meter accurate Trimble Global Positioning System (GPS) units. When detailed mapping or remapping was required, all linear site features, such as site boundaries, roads, and fence lines, as well as point features, such as the site datum, cultural features, artifact concentrations, diagnostic artifacts and tools, and other necessary data, were mapped with the Trimble GPS unit for post-processing into ArcMap 9.3 shapefiles, and for plotting onto associated USGS 7.5-minute quadrangles to ensure accuracy and to produce required location maps of all sites and resources.

In addition to site mapping, project personnel photographed sites in overview and for other data collection needs. Associated features and diagnostic artifacts were described, measured, recorded with GPS, and photographed, as appropriate. Field personnel noted environmental setting, context, topography, and geographical location for each cultural resource. No collection or subsurface testing was conducted during the inventory.

SITE EVALUATION

SWCA evaluated sites and their significance, as defined by criteria set forth in Title 36 Code of Federal Regulations 60.4 (National Park Service [NPS] 1991), which states:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> A) That are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> B) That are associated with the lives of persons significant in our past; or
>
> C) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> D) That has yielded or may be likely to yield information important in prehistory or history.

Not eligible sites have lost integrity and are unlikely to contribute further data significant to knowledge of prehistory or history.

Prehistoric Archaeological Sites

Prehistoric lithic scatters/campsites (sites without any structures or association with known significant events or persons) recorded for the project generally will not contain NRHP discussion for Criteria A, B, or C. Instead, for NRHP recommendation purposes, these properties will be discussed for their potential to yield information significant to prehistory or the archaeological record under NRHP Criterion D. Special cases generally apply to Criterion A, where a prehistoric site type (such as a stone circle site) may not be recommended eligible for the NRHP from an archaeological perspective, but may be considered important to cultures of Native American peoples.

Evaluation of the significance of archaeological sites under Criterion D considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site (construction techniques, building materials, structural integrity); and the age range reflected by the site assemblage. Sites considered to be significant generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions about human lifeways contain associated features, structures, and/or relatively intact and dateable artifacts.

Historic Archaeological Sites or Components

Historic sites containing or consisting of preserved features or structures are evaluated primarily under Criteria A, B, and C. Historic trash scatters lacking associated features or

structures are primarily evaluated under Criterion D. In general, these types of sites represent ephemeral prospecting or stock management activities, but they lack identifiable or important association with specific persons or events of regional or national history (Criteria A and B), and they lack the formal and structural attributes necessary to qualify as eligible under Criterion C. The evaluation of significance of historic archaeological sites under Criterion D focuses on the capacity of the sites or components to yield significant information regarding knowledge of history during the period(s) of site significance. Evaluation of the significance of historic sites considers general characteristics such as the nature, size, and diversity of the site assemblage; the potential presence or absence of subsurface cultural deposits; the nature of any features within the site; construction techniques; building materials; structural integrity; and the age range reflected by the site assemblage.

Historic sites considered to be significant under Criterion D generally contain an assemblage of cultural remains that reflects sufficient diversity to permit identification of activities and to allow confirmation of the period of site use. Sites with the most potential to address research questions contain associated features, structures, and relatively intact and datable artifacts. Significant sites are those that could impart information not available solely from historical documents. Although archival research may provide an essential form of information, often historical records are inaccurate or incomplete. For example, examination of construction techniques or household assemblages can provide information on economic slumps, reuse of structures for other than original purposes, and re-occupation cycles. As a result, insight may be gained into questions about human lifeways that are often asked in archaeology, but rarely specified directly in historical documentation.

Non-Archaeological Historic Sites or Components

Non-archaeological historic sites or sites with non-archaeological components are those primarily assessed for NRHP eligibility under Criteria A, B, or C, rather than Criterion D and typically are not subject to subsurface testing. Individual segments of significant historic sites are evaluated as contributing or non-contributing in terms of physical and environmental integrity. Examples of historic site types include linear historic features, such as transportation routes and water conduits, standing building and structure sites, and potentially extend to any historic feature on an otherwise archaeological site, such as Traditional Cultural Property (TCP) features. Historic and ethnographic sites evaluated for potential contribution to history or cultural traditions for reasons beyond their possible future research value tend to have different evaluation and management considerations than archaeological sites. Typically, the integrity of historic sites is addressed using the guidelines presented in National Register Bulletin 15 (NPS 1991), which defines the seven elements of integrity as location, design, materials, workmanship, setting, feeling, and association. As such, properties are basically evaluated in consideration of their physical integrity and the integrity of their surroundings. TCPs are also considered under the guidelines of National Register Bulletin 38 (Parker and King 1998).

INVENTORY RESULTS AND RECOMMENDATIONS

During the COLT Connector Pipeline inventory, SWCA archaeologists revisited one previously recorded site (32WI961) and newly recorded one site (32WI1109). 32WI961 is a prehistoric site consisting of three adjacent depressions and 32WI1109 is an historic cultural material scatter consisting of farm machinery. Both are discussed in detail below. Copies of the North Dakota Site Forms for both resources are provided in the detached Appendix B, and resource location maps are provided in Appendix C.

32WI961

Site Type:	Depressions
Association:	Unknown Prehistoric
Site Size:	12.23 by 14.20 m (149.53 m^2)
NRHP Recommendation:	Unevaluated
Management Recommendation/Project Effect:	Avoid/No Effect

Site Description and Previous Recording

32WI961 is a prehistoric site consisting of three depressions located in a low saddle on the southern slope of a slightly eroded hilltop (Figures 6 and 7). East/west-trending 60th St. NW is 300 feet south of the site. An existing pipeline scar can be seen approximately 70 feet south of the site. Vegetation on site consists of mixed short prairie grasses, allowing for 0 to 10 percent bare ground visibility. Sediments consist of brown silt clay loam formed through colluvial processes. Impacts to this site include cattle grazing, bioturbation, and colluvial erosion. The site is in moderate condition and retains integrity with only minimal impacts.



Figure 6. 32WI961 site overview, facing west.

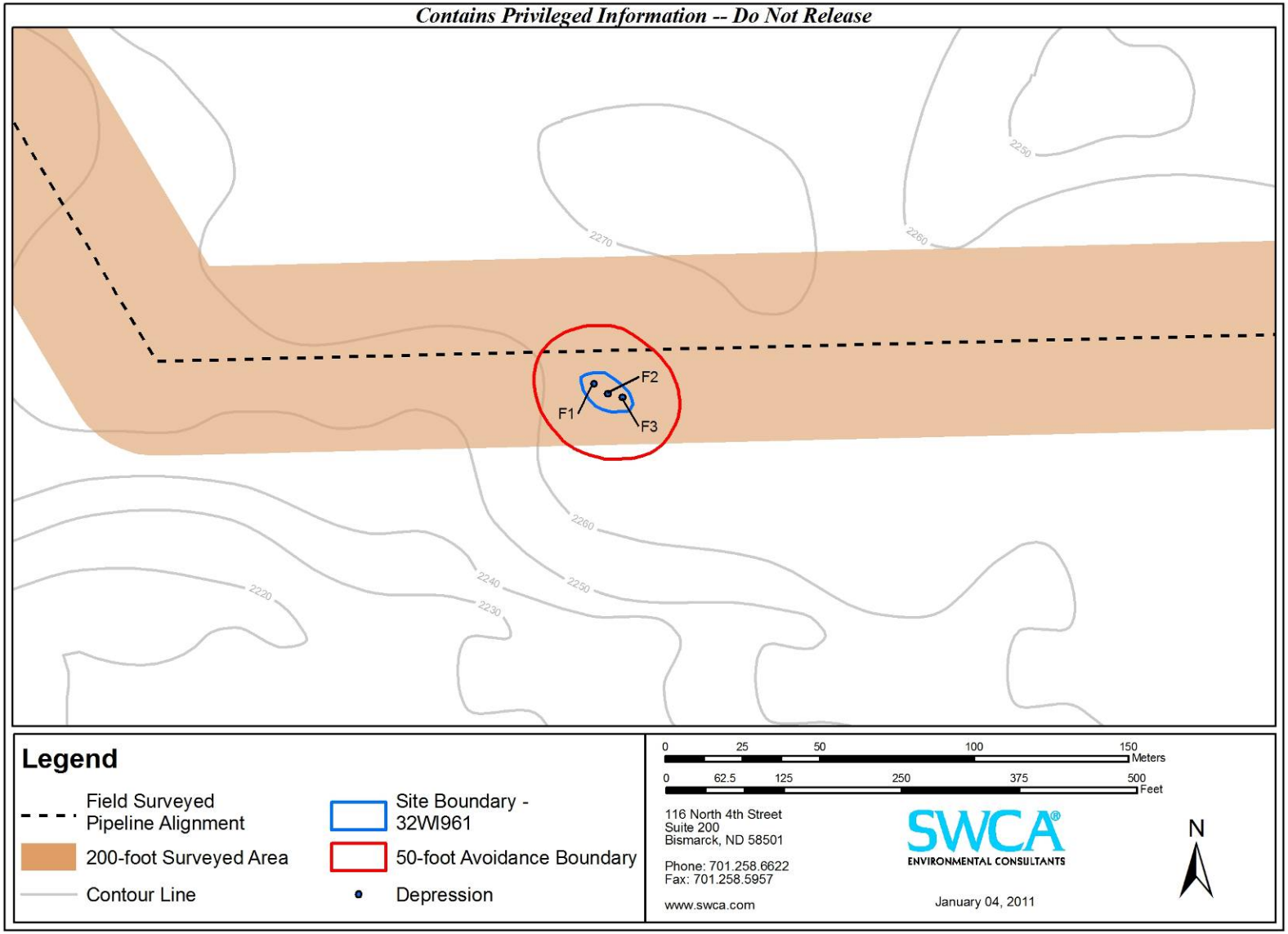


Figure 7. 32WI961 site sketch map

32WI961 was originally recorded in 2006 as part of the Enbridge, North Dakota Pipeline Expansion Project completed by Earthworks, Inc. Three depressions (Features 1 through 3) were originally recorded within 0.5 m of one another. Feature 1 measured 1.00 m in diameter with a depth of 0.25 m, and is the westernmost feature. A large stone sits in the center of the depression. Feature 2 lies in the middle of the three features and measures 2.0 m in diameter with a depth of 0.5 m. It is the largest of the three depressions and contains stone lining on the southern and eastern margins as well as a rock lining at the bottom. Feature 3 is the easternmost depression and measures 1.00 m in diameter and 0.25 m in depth. No stones are associated with this depression. The features appeared to be prehistoric in age due to their size and depth. They were interpreted as possible storage pits, but no cultural material was found in association with the features. This site was left unevaluated regarding its NRHP eligibility and at least 50 feet avoidance was recommended during pipeline construction.

Survey Results

SWCA revisited 32WI961 on November 8, 2010, for the current project. The site consists of three depressions (Features 1–3) each separated by a distance of approximately 0.5 m. The site is in the same condition as recorded in 2006, with no additional features or cultural material observed. No changes have been made to the site boundary.

NRHP Eligibility Recommendation

32WI961 is a grouping of three depressions situated in a low saddle on the southern slope of a slightly eroded hilltop. The site was originally recorded in 2006 and was left unevaluated regarding its NRHP eligibility. During the current revisit, no changes to the site were observed. The site is currently in moderate condition, with impacts from bioturbation and grazing. Due to the size and depth of the depressions, as well as the stone lining of the largest, the site contains potential for buried cultural material within or around the features; however, no shovel testing was conducted. SWCA recommends the site remain unevaluated regarding its eligibility for nomination to the NRHP under Criterion D pending subsurface testing.

Management Recommendation

SWCA recommends avoidance of 32WI961 pending subsurface testing. SWCA recommends a 50-foot avoidance buffer be placed around the site boundary (Figure 7) and that all construction activities and vehicle traffic remain outside of this buffer zone.

32WI1109

Site Type:	Cultural Material Scatter (Farm Machinery)
Association:	Unknown Historic
Site Size:	77.00 by 114.76 feet (8,836.52 feet^2)
NRHP Recommendation:	Not Eligible
Management Recommendation/Project Effect:	No Further Work/No Effect

Site Description

32WI1109 is an historic cultural material scatter consisting of farm machinery located at the bottom of a saddle in an upland grassland ecosystem (Figures 8 and 9). Small knolls are located to the northwest, southwest, and northeast, while a small wetland depression lies to the southeast. East/west-trending 60th St. NW is 400 feet south of the site. Vegetation on site consists of crested wheatgrass, smooth brome, and a snowberry patch, allowing for less than 10 percent bare ground visibility. Sediments consist of brown silt clay loam formed through colluvial processes. Impacts to this site include cattle grazing and colluvial erosion. Since the entire site is in secondary context (debris dump), the site is in very poor condition and lacks integrity.



Figure 8. 32WI1109 site overview, facing north.

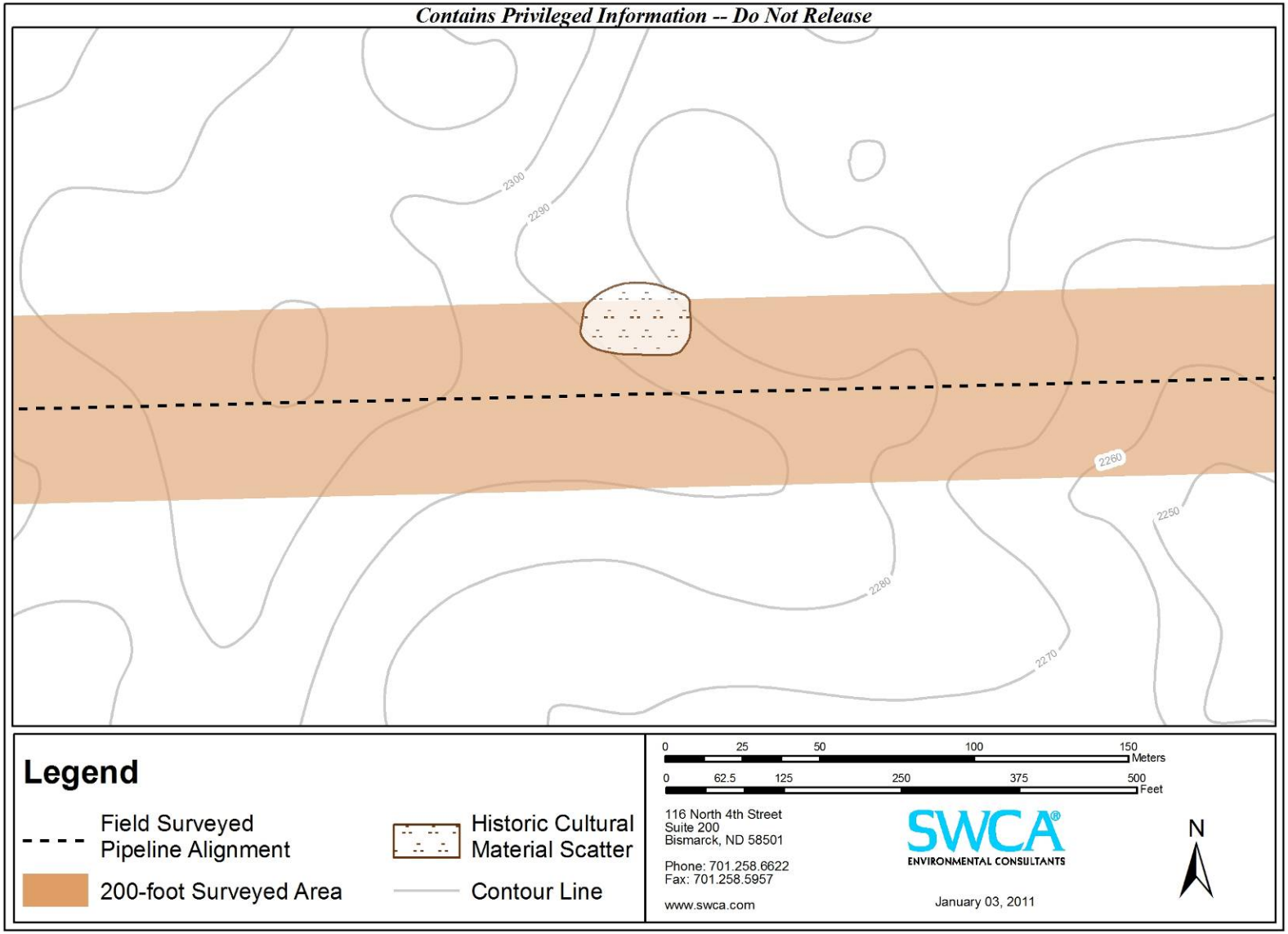


Figure 9. 32WI1109 site sketch map.

Survey Results

SWCA recorded 32WI1109 on November 9, 2010. The site consists of historic farm machinery, equipment parts, and bundles of electric wire and barbed wire. Eight items were identified within the historic trash pile, including two wagons of wood and steel construction; a wood and steel manure spreader; a wood and steel pull-behind bailer; a steel pull-behind sickle mower with a wood tongue; a steel single row disc; a steel single row plow; and a steel seeder with a wood tongue.

Historic Research

A Bureau of Land Management General Land Office records search was conducted for the parcel on which the site is located, the results of which indicated that one patent had been issued for the parcel. The patent for the south half of the southwest quarter of Section 34 in T156N, R97W was granted to Gilbert Gakstad on April 27, 1908. It cannot be determined through the available records if Gilbert Gakstad lived on the property, and no further information for him was available.

NRHP Eligibility Recommendation

32WI1109 is a scatter of farm machinery at the bottom of a saddle in an upland grassland ecosystem. Eight pieces of farm equipment were observed at the site, along with miscellaneous hardware parts and wire bundles. Historic research did not reveal that the site is linked to any historically significant events or people; therefore, SWCA recommends the site as not eligible under Criteria A and B. There are no standing structures or building on site; therefore, SWCA recommends the site not eligible under Criterion C. No shovel testing was conducted by project design; however, as a trash dump, the artifacts are in a secondary context and there is little potential for associated intact, subsurface cultural deposits. Therefore, SWCA recommends the site as not eligible under Criterion D.

Management Recommendation

No further work is recommended.

CONCLUSIONS

SWCA conducted a Class I and Class III cultural resource inventory on behalf of Barr between November 5 and 13, 2010, for the COLT Connector Pipeline project. Rangeland Energy, LLC, proposes to construct the approximately 20.35-mile-long COLT Connector crude oil pipeline in Williams County, North Dakota. The jurisdictional agency presiding over the construction of the COLT Connector pipeline is the NDPSC. In compliance with NDPSC requirements, Barr requested SWCA perform a cultural resource survey to assess the potential effect of activities associated with the construction of the crude oil pipeline. The proposed pipeline will be constructed within a 100-foot-wide temporary construction ROW and a 30-foot-wide permanent ROW will be maintained after construction is complete. The final construction ROW will be entirely within the inventoried area.

The Class III inventory includes a 200-foot-wide survey corridor centered on the 20.35-mile-long proposed pipeline centerline (493.79 acres). Additional areas totaling 12.45 acres were surveyed to provide alternate alignment options. In total, 506.24 acres were inventoried for

the project. During the inventory, one cultural resource (32WI1109) was newly recorded and one previously recorded site (32WI961) was revisited. 32WI1109 is an historic cultural material scatter consisting of farm machinery and is recommended not eligible for the NRHP. No further work is recommended at 32WI1109. 32WI961, a prehistoric site containing three depressions, has been left unevaluated regarding its NRHP eligibility and avoidance is recommended. SWCA recommends a 50-foot avoidance buffer be placed around the site and that all construction activities and vehicle traffic remain outside of this buffer zone. With the above stipulation, it is recommended that a determination of *No Historic Properties Affected* and *No Significant Sites Affected* be granted for the project to proceed as planned.

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APPENDIX A
List of Previous Studies

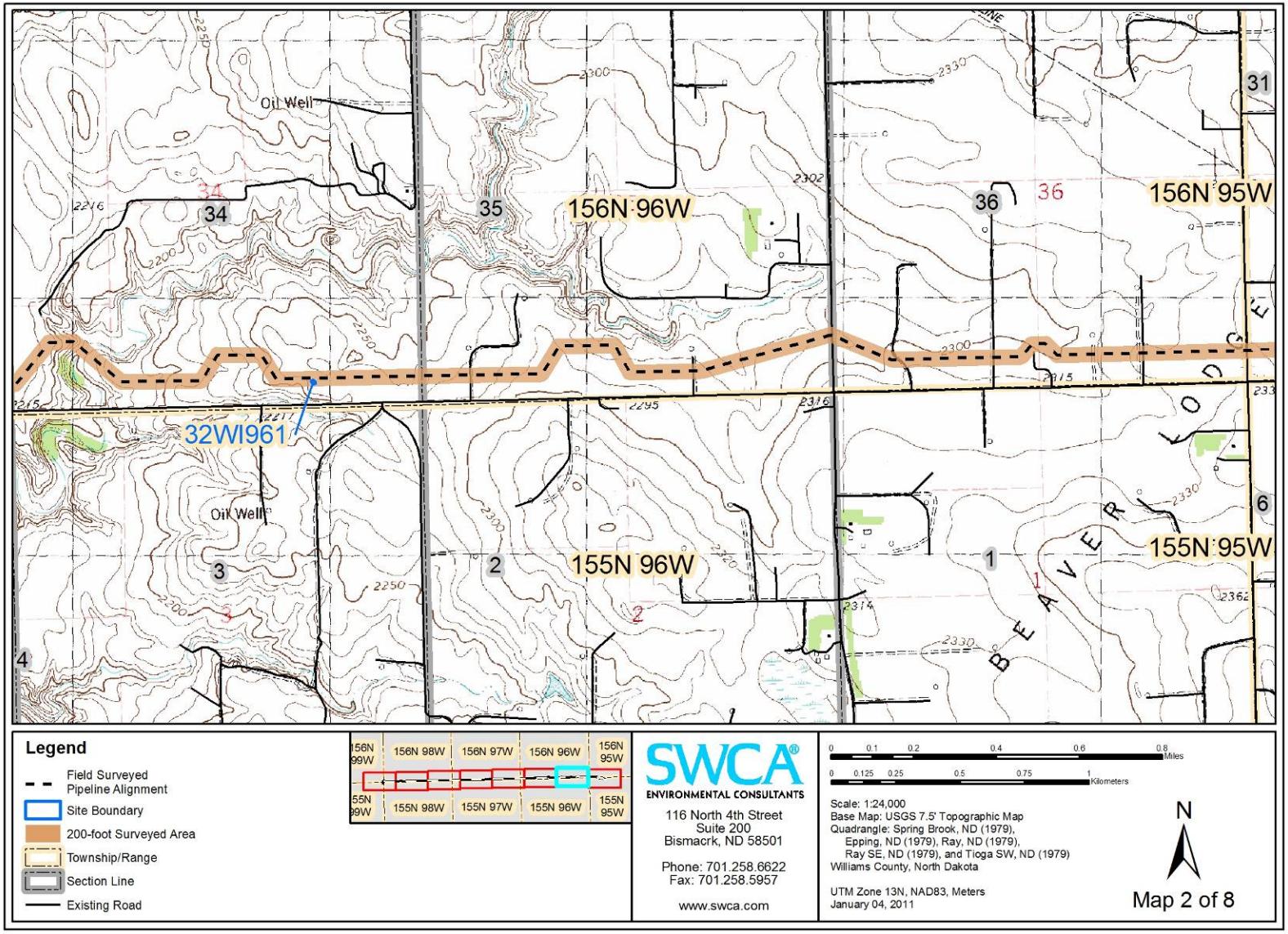
Bibliographic Listing of Previous Archaeological and Historic Studies for Project Lands in Williams County, North Dakota.

Manuscript Number	Location	Title	Authors	Year
003251	Sections 31, 32, T156N, R95W; Sections 31, 32, 33, 34, 35, 36, T156N, R96W; Sections 31, 32, 33, 34, 35, 36, T156N, R97W; Sections 31, 32, 33, 34, 35, 36, T156N, R98W; Sections 35, 36, T156N, R99W	Archaeological Investigations Along the Portal Beaver Lodge to Alexander Pipeline, Williams and McKenzie Counties, ND	D. Kuehn and J. Borchert	1984
004319	Sections 5, 8, T155N, R95W; Sections 29, 32, T156N, R95W	Cultural Resource Investigations on the North Dakota Segment of the Exxon Company, USA Bairoil – Dakota CO2 Pipeline Project, Golden Valley, Billings, Stark, Dunn, McKenzie, & Williams Co., Western North Dakota Vols 1 & 2	M. Metcalf and K. Schweigert	1987
004540	Section 1, T155N, R99W; Section 35, T156N, R98W	Final Report of Reconnaissance Surveys in Williston, Kenmare, and Eight Smaller Communities in Mountrail, Williams, Ward, and Renville Counties in Northwestern ND	M. Fiege, F. Quivik, D. Martin, and J. Kestle	1988
005749	Sections 6, 7, 8, T155N, R95W; Sections 29, 31, 32, T156N, R95W	Amerada Hess Corporation, 10 Inch Natural Gas Pipeline Project Cultural Resources Inventory McKenzie and Williams Counties, North Dakota and Final Report	B. Olson	1992
008057	Sections 29, 32, T156N, R96W	STATEOP-381 Class III Inventory Report, Williams Co., ND	B. Christensen	2001
008670	Section 12, T156N, R99W	Cultural Resource Investigations Along U.S. Highway 2 in Ward, Mountrail, and Williams Counties, North Dakota Vol 1 & 2	B. Perkl, B. Mitchell, J. Lindbeck, S. Buskey, R. Weddle, M. Beck, and G. Bolling	2001

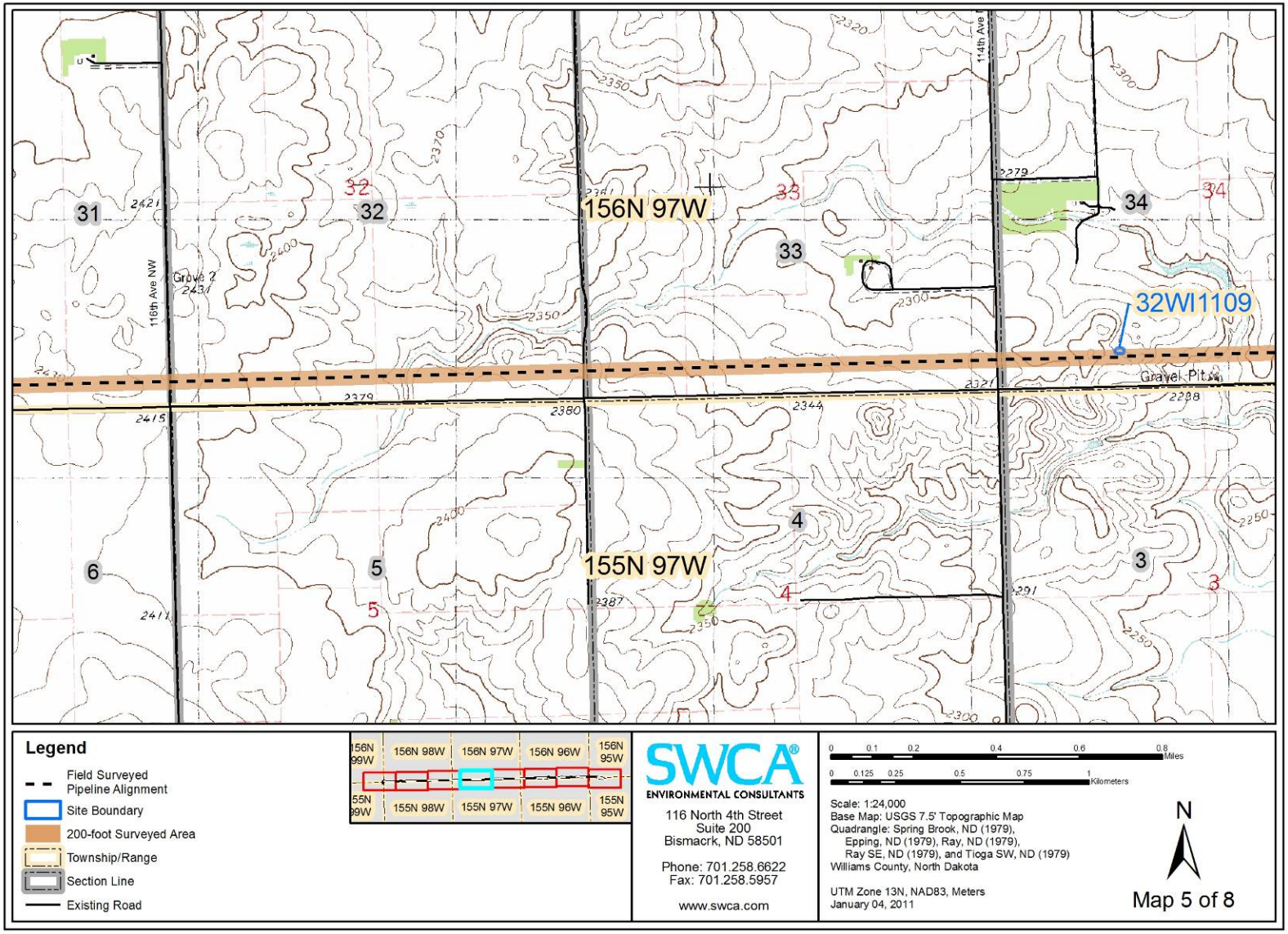
Manuscript Number	Location	Title	Authors	Year
009856	Sections 5, 6, T155N, R95W; Sections 1, 2, 3, 4, 5, 6, T155N, R96W; Sections 1, 2, 3, 4, 5, 6, T155N, R97W; Sections 1, 2, 3, 4, 5, 6, T155N, R98W; Sections 1, 2, T155N, R99W; Sections 31, 32, T156N, R95W; Sections 31, 32, 33, 34, 35, 36, T156N, R96W; Sections 31, 32, 33, 34, 35, 36, T156N, R97W; Sections 31, 32, 33, 34, 35, 36, T156N, R98W; Sections 35, 36, T156N, R99W	Enbridge Pipelines (North Dakota) LLC, North Dakota Pipeline Expansion Project: A Class II and Class III Cultural Resource Inventory and Evaluative Testing of Three Sites, Williams Co., ND	J. Harty, P. Heiner, and J. Morrison	2006
010128	Sections 1, 12, T155N, R99W; Section 30, T156N, R96W	Historic Bridges in North Dakota 2004 Revision	M. Hustetler and J. Goff	2005
010603	Section 28, T156N, R97W	Class III: Intensive Cultural Resources Inventory ND01 Radiance Alt 62nd Street Northwest, Ray, Williams Co., ND	E. Eigenberger	2008
011243	Sections 31, 32, T156N, R95W	A Class I and Class III Cultural Resource Inventory of the Red Sky Oil Pipeline in Mountrail and Williams Co., ND	J. Markman, A. Hutchinson, and A. Wuenschel	2009
011686	Sections 5, 32, T155N, R95W	Beaver Lodge to Berthold Pipeline: A Class III Cultural Resource Inventory, Mountrail, Ward, & Williams Counties, ND	J. Harty, M. Shropshire, and D. Klinner	2010
011790	Sections 5, 8, 32, T155N, R95W	SORTI and Dunn Pipeline Projects: A Class III Cultural Resource Inventory, Williams and McKenzie Co., ND	J. Harty, M. Shropshire, and D. Klinner	2010

APPENDIX B
(Detached)
North Dakota Site Forms

APPENDIX C
Resource Location Map



Resource location map for 32WI961 at 1:24,000 scale.



Resource location map for 32WI1109 at 1:24,000-scale.

Appendix E

Natural Resources and Wetland Determination Report

Natural Resources and Wetland Determination Report for the COLT Connector Pipeline, Williams County, North Dakota

Prepared for

Barr Engineering Company

Prepared by

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18 January 2011

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1.0 INTRODUCTION

1.1 BACKGROUND

Rangeland Energy, LLC is proposing to construct an approximately 20.5-milelong crude oil pipeline named the COLT Connector in Williams County, North Dakota (survey area). The proposed pipeline will be constructed within a 100-foot temporary construction right-of-way (ROW) and a permanent 30-foot-wide ROW will be maintained after construction is complete.

The North Dakota Public Service Commission (ND PSC) has claimed jurisdiction over the survey area and is requiring a certificate of corridor compatibility and route permit be obtained prior to the commencement of construction activities. SWCA Environmental Consultants (SWCA) was contracted by Barr Engineering Company (Barr) to complete natural and cultural resource field surveys in order to identify exclusion and avoidance areas as specified in North Dakota Administrative Code (NDAC) 69-06-08-02.

SWCA conducted a field survey of a 200-foot-wide corridor between November 8 and 17, 2010, to determine the potential presence and extent of waters of the U.S., commonly referred to as a wetland determination, within the proposed survey area. Concurrently with the wetland determination, SWCA also conducted a cursory threatened and endangered species survey and habitat assessment; a tree, sapling, and shrub enumeration survey; and a noxious weed survey.

This report outlines the methodology used by SWCA's ecologists to complete each of the aforementioned surveys. Additionally, this report presents the results of the completed field surveys and regulatory recommendations to ensure compliance with the ND PSC and the U.S. Army Corps of Engineers (USACE) Nationwide Permit 12.

1.2 REGULATORY BACKGROUND

1.2.1 Clean Water Act, Section 404

Section 404 of the Clean Water Act prohibits the discharge of fill material into waters of the U.S., also known as jurisdictional waters, without a permit from the USACE.

1.2.2 USACE Nationwide Permit 12

The USACE Nationwide Permit 12 authorizes the construction of utility lines and associated facilities in waters of the U.S., provided the activity does not result in the permanent loss of greater than 0.5 acre of waters of the U.S., including wetlands.

Nationwide Permit 12 also authorizes the construction of access roads for utility lines, provided that the access road:

- does not result in the permanent loss of greater than 0.5 acre of waters of the U.S.;
- is constructed to the minimum width necessary;

- is constructed so that the length of the road minimizes any adverse effects to waters of the U.S.;
- is as near as possible to pre-construction contours and elevations; and
- is properly bridged or culverted when constructed above pre-construction contours.

If the access roads are used exclusively for construction purposes, they must be temporary and removed upon project completion.

Nationwide Permit 12 requires that the permittee submit a pre-construction notification prior to commencing construction if any of the following criteria are met.

- The activity involves mechanized land clearing in a forested wetland.
- A Section 10 permit is required to cross a navigable waterbody (Rivers and Harbors Act).
- The utility line exceeds 500 feet in length through any single crossing of a water of the U.S.
- The utility line is placed within a jurisdictional area (i.e., water of the U.S.) and it runs parallel to a stream bed that is within that jurisdictional area.
- Discharges result in the permanent loss of greater than 0.1 acre of waters of the U.S.
- Permanent access roads are constructed above grade in waters of the U.S. for a distance of more than 500 feet.
- Permanent access roads are constructed in waters of the U.S. with impervious materials.

Please refer to Appendix D for a copy of the USACE Nationwide Permit 12 conditions.

1.2.3 USACE Regional Conditions

The USACE has published several regional conditions for projects operating under Nationwide Permits in North Dakota. The regional conditions apply to wetlands classified as "fens," waters adjacent to natural springs, the Missouri River, historic properties, and fish spawning areas. Please refer to Appendix D for a copy of the USACE Nationwide Permit Regional Conditions for the state of North Dakota.

2.0 METHODS

2.1 SURVEY AREA

The proposed survey area trends east to west entirely within Williams County, North Dakota, beginning at a point south of Tioga, North Dakota, in Section 5, Township (T) 155 North (N), Range (R) 95 West (W), of the 5th Prime Meridian. Moving east to west, the survey area first traverses Section 6, T155N, R95W, then moves north into Section 31, T156N, R95W, and back west through Sections 31–36, T156N, R96–98W, turning south in Section 31, T156N,

R99W and ending at a point in Section 1, T155N, R99W. The study area is located in the Great Plains (Level I), West-Central Semi-Arid Prairies (Level II), Northwestern Glaciated Plains (Level III), and the Missouri Coteau Slope (Level IV) ecoregions. The Missouri Coteau Slope is characterized by an average precipitation amount of 15 to 18 inches and mean July temperatures ranging from 59 degrees Fahrenheit (°F) to 86°F (U.S. Geological Survey [USGS] 2006).

2.2 WETLANDS

SWCA ecologists conducted wetland determinations, within the survey area, based on the principles and guidelines provided in the 1987 Corps of Engineers Wetlands Delineation Manual (Manual) (Environmental Laboratory 1987) and the *Interim Regional Supplement to the Corps of Engineers Wetlands Determination Manual: Great Plains Region* (Supplement) (USACE 2008). According to the Manual, an area is a wetland if three mandatory wetland indicators are present in a given area, with special exceptions. These criteria include the presence of hydrophytic vegetation, wetland hydrology, and hydric soils. All wetlands and waterbodies geographically referenced within the survey area during field survey are depicted on the Site Layout Maps in Appendix A.

2.2.1 Vegetation

SWCA taxonomically identified all plant species within each recorded wetland area. All species were recorded according to their respective vegetative stratum. A tree is defined by the Supplement to be a woody-stemmed plant with a trunk diameter at breast height (DBH) of equal to or greater than 3 inches, regardless of height. The sapling and shrub stratum is defined by the Supplement to be composed of woody-stemmed plants with a trunk DBH of less than 3 inches, regardless of height. The herbaceous stratum includes all non-woody-stemmed plants regardless of height. Finally, the woody vine stratum includes all woody-stemmed vines, regardless of diameter.

SWCA ecologists noted each plant species' respective U.S. Fish and Wildlife Service (USFWS) indicator status (i.e., upland [UPL], facultative upland [FACU], facultative [FAC], facultative wetland [FACW], and obligate [OBL]).

SWCA also noted all populations of North Dakota state or county listed noxious weeds identified within the survey area.

2.2.2 Hydrology

A wetland was determined to contain wetland hydrology if at least one primary indicator or at least two secondary indicators of wetland hydrology were present, as defined by the Manual. Common hydrologic indicators include the presence of surface water, high water table, soil saturation, water marks on trees or other objects, sediment deposits, water-stained leaves, and oxidized rhizospheres on living roots.

2.2.3 Soil

No soil profiles were excavated by SWCA during the wetland determination. Hydric soils were assumed to be present within each area that exhibited greater than 50% hydrophytic vegetation, a positive indication of wetland hydrology. Additionally, the assumption of the presence of hydric soil was predicated on the geomorphic position of each wetland area.

2.3 WATERBODIES

Waterbodies (i.e., creeks, streams, rivers) were identified by the presence of an ordinary high water mark (OHWM). Common identifiable indicators of an OHWM include a clear, natural line visible on the bank; shelving; changes in soil characteristics; the destruction of terrestrial vegetation; the presence of litter and debris; and watermarks on structures that are inundated during normal high water conditions. The OHWM typically represents the potential limits of the USACE jurisdiction. Please note that the USACE has full discretion in determining the jurisdictional status of referenced wetlands and waterbodies.

SWCA classified streams as perennial, intermittent, or ephemeral based on field observations. During a typical year, a perennial stream contains flowing water year-round and the water table is located above the stream bed. Groundwater is the primary water source for stream flow while precipitation runoff is supplemental. Ecologists classified streams that showed significant flow during the field survey or were named or designated as solid blue lines on the USGS topographic maps as perennial.

An intermittent stream has flowing water for only portions of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.

2.4 WILDLIFE INCLUDING THREATENED AND ENDANGERED SPECIES

Information regarding the presence of threatened or endangered species, which may occur within the survey area, was obtained from the U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species by North Dakota county (USFWS 2010a). This document does not represent a comprehensive survey, but rather acknowledges the past and/or current presence of listed species. The lack of discovery of threatened or endangered species does not signify their non-existence within the area, but only that no primary or secondary indications of these species were recorded.

SWCA conducted a cursory pedestrian survey concurrently with the wetland determination for all listed species that could be potentially impacted by construction activities. Additionally, SWCA characterized suitable threatened and endangered species habitat encountered during the field survey.

SWCA ecologists noted all wildlife observed during the field survey. Wildlife sightings can involve primary observations (i.e., actual sighting of an animal) or secondary observations (i.e., observation of scat, tracks, or fur deposits).

2.5 TREE, SAPLING, AND SHRUB COUNT

SWCA ecologists determined the total number of trees, saplings, and shrubs present within the surveyed 200-foot ROW by employing several different techniques depending on the type of woody vegetation habitat (i.e., forested upland, shrubland, or shelterbelt) encountered and the overall extent of each habitat within the ROW. The boundary of all forested upland, shrubland, and shelterbelt habitat was geographically referenced using a Trimble GeoXT series handheld global positioning system (GPS) unit. In forested upland and shrubland habitat, SWCA counted or estimated the number of all woody stemmed vegetation regardless of DBH. In shelterbelt areas, all woody stemmed vegetation with a DBH of ≥ 1 inch were inventoried, regardless of height. Ecologists taxonomically identified all recorded individuals to the species level within each habitat type.

Linear Spacing Estimates: SWCA ecologists estimated the total number of individual trees or shrubs within each observed shelterbelt by calculating the total number of individuals, regardless of DBH of each species within a set linear distance. This method assumes that spacing and species pattern between individuals is equal along the entire length of the shelterbelt. When a satisfactory number of replications was averaged (usually up to 50% of the total shelterbelt length), ecologists determined the total shelterbelt length and estimated the total number of individuals potentially present based on the average number of individuals per linear foot. Once the number of individuals per foot was estimated for each shelterbelt, SWCA used a shapefile depicting the width of the proposed disturbance area (i.e., 100 feet) to determine the linear length of each shelterbelt segment potentially impacted by construction activities. This linear length was then used to estimate the number of individual trees or shrubs potentially impacted through construction activities.

Sub-Plot Estimates: Some shrub species, such as silver buffaloberry (*Shepherdia argentea*), are difficult to individually count due to the nature of their assemblages. Therefore, SWCA used a sub-plot estimation technique to estimate the total number of silver buffaloberry individuals within the ROW. SWCA completed an actual count of all silver buffaloberry individuals within a given geographically referenced sub-plot area. The area contained within the geographically referenced sub-plot was calculated using ArcGIS v9.3 (ESRI Redlands, CA). This process was repeated until a satisfactory number of replications were completed. Once the total number of individuals was determined per the total geographically referenced area, an average number of individuals per acre was calculated. SWCA then calculated the total area of silver buffaloberry assemblages within the ROW and determined the total number of individuals based on the average individuals per acre value.

2.6 MAPPING

The boundaries of each wetland, waterbody, and woody vegetation habitat were geographically recorded using a Trimble GeoXT GPS unit. The aforementioned GPS unit is capable of recording geographic data with sub-meter accuracy. SWCA used Universal

Transverse Mercator Zone 13N as the projected coordinate system and North American Datum 1983 as the datum. ArcGIS v9.3 (Redlands, California) was used to analyze collected features, calculate areas, and generate the maps provided in Appendix A. Please note that all data collected using the GPS unit, and displayed on the attached maps, are for review purposes only and do not represent a professional civil survey.

3.0 RESULTS

3.1 VEGETATION

SWCA ecologists identified four general types of vegetative communities within the survey area. These vegetative communities were classified as herbaceous upland, shrubland, cropland, and palustrine emergent (PEM) wetland. PEM wetlands are characterized by the presence of herbaceous hydrophytic or submergent aquatic macrophytes.

Vegetation communities met the hydrophytic vegetation criterion for wetlands if greater than 50 percent of dominant species had an indicator status of FAC, FACW, or OBL. The upland communities failed to meet at least one of the two assessed wetland criteria. Refer to Appendix B for photographs that depict representative vegetation at wetlands surveyed. Examples of common dominant species identified within each vegetative community are listed below.

SWCA ecologists did not observe any occurrences of North Dakota state or county listed noxious weeds within the surveyed area.

3.1.1 Herbaceous Upland

Herbaceous upland communities occurring throughout the survey area consisted of non-wetland areas dominated by non-woody vegetation such as grasses and forbs. Common species found within these communities include crested wheatgrass (*Agropyron cristatum*), big bluestem (*Andropogon gerardii*), green sagewort (*Artemisia campestris*), fringed sagewort (*Artemisia frigida*), cudweed sagewort (*Artemisia ludoviciana*), sideoats grama (*Bouteloua curtipendula*), blue grama (*Bouteloua gracilis*), smooth bromegrass (*Bromus inermis*), purple coneflower (*Echinacea angustifolia*), squirreltail (*Elymus elymoides*), American licorice (*Glycyrrhiza lepidota*), curlycup gumweed (*Grindelia squarrosa*), needle and thread (*Hesperostipa comata*), gayfeather (*Liatris puncata*), yellow sweetclover (*Melilotus officinalis*), green needlegrass (*Nassella viridula*), western wheatgrass (*Pascopyrum smithii*), Kentucky bluegrass (*Poa pratensis*), prairie coneflower (*Ratibida columnifera*), prairie rose (*Rosa arkansana*), and little bluestem (*Schizachyrium scoparium*).

3.1.2 Shrubland

Shrubland communities occurring throughout the survey area consisted of upland areas dominated by woody-stemmed vegetation including downy hawthorn (*Crataegus mollis*), Russian olive (*Elaeagnus angustifolia*), silverberry (*Elaeagnus commutata*), chokecherry (*Prunus virginiana*), silver buffaloberry (*Shepherdia argentea*), and western snowberry (*Symphoricarpos occidentalis*).

3.1.3 Cropland

Cropland vegetation included canola (*Brassica napus*) and hard red spring wheat (*Triticum aestivum*).

3.1.4 PEM Wetland

PEM wetlands found within the survey area mainly consisted of herbaceous, non-woody vegetation such as sedges, spike-rushes, grasses, and forbs although some woody vegetation was present but not dominant. Common species found within these communities include quackgrass (*Agropyron repens*), big bluestem, smooth brome, *Carex* spp., redosier dogwood (*Cornus sericea*), creeping spikerush (*Eleocharis palustris*), Canada wildrye (*Elymus canadensis*), American licorice, foxtail barley (*Hordeum jubatum*), witchgrass (*Panicum capillaire*), reed canarygrass (*Phalaris arundinacea*), fowl bluegrass (*Poa palustris*), Kentucky blue grass, smartweed (*Polygonum* sp.), *Rumex* sp., bulrush (*Scirpus* sp.), prairie cordgrass (*Spartina pectinata*), cattail (*Typha angustifolia*), and stinging nettle (*Urtica dioica*).

3.2 HYDROLOGY

Wetland communities observed during the determination effort displayed at least one primary or two secondary indicators of wetland hydrology, as defined by the Manual. Upland communities either failed to display hydrologic indicators or failed to meet the hydrophytic vegetation requirement, as defined by the Manual.

According to National Weather Service (NWS) preliminary climatological data for Williston, North Dakota, 3.21 inches of precipitation was recorded from 1 September through 17 November 2010 (Table 1). This amount is 0.6 inch above normal for this time period.

Table 1. Monthly Recorded Rainfall at NWS Williston, ND.

Month	Recorded Precipitation (inches)	Normal Precipitation (inches)	Difference (inches)
September 2010	1.41	1.35	0.06
October 2010	1.26	0.87	0.39
Nov. 1–17, 2010	0.54	0.39	0.15
Total	**3.21**	**2.61**	**0.60**

Source: National Oceanic and Atmospheric Administration 2009

3.3 SOILS

SWCA assumed all wetland areas that exhibited the hydrophytic vegetation and wetland hydrology criteria also exhibited hydric soil characteristics. Table 2 summarizes the soil types present within the survey area. Please refer to Appendix C for Natural Resources Conservation Service (NRCS) soil series descriptions.

Table 2. NRCS Derived Soil Series Present within the ROW.

Soil Types	Acres within 100-foot ROW	Hydric Component Present	Component Name and % Within Map Unit
Arnegard loam, 0 to 2 percent slopes	1.65	No	N/A
Bowdle loam, 0 to 2 percent slopes	1.69	No	N/A
Farnuf loam, 0 to 2 percent slopes	22.0	No	N/A
Lehr loam, 2 to 6 percent slopes	0.40	No	N/A
Williams-Bowbells loams, 0 to 3 percent slopes	42.5	Yes	Tonka – 2% Heil – 1%
Williams-Bowbells loams, 3 to 6 percent slopes	76.1	Yes	Tonka – 1%
Williams-Zahl loams, 3 to 6 percent slopes	14.1	Yes	Tonka – 1%
Williams-Zahl loams, 6 to 9 percent slopes	49.2	No	N/A
Zahl-Williams loams, 9 to 15 percent slopes	11.6	No	N/A
Zahl-Williams loams, 15 to 60 percent slopes	9.73	No	N/A
Amor-Zahl-Cabba loams, 9 to 25 percent slopes	1.19	No	N/A
Cabba-Amor-Zahl loams, 25 to 60 percent slopes	1.11	No	N/A
Korchea-Divide loams, channeled 0 to 2 percent slopes	4.78	No	N/A
Lehr-Williams loams, 0 to 6 percent slopes	6.60	No	N/A
Wabek sandy loam, 6 to 25 percent slopes	2.76	No	N/A

Source: NRCS 2009

3.4 WETLANDS

SWCA recorded 15 PEM wetlands within the survey area, totaling 3.9 acres. However, only approximately 1.97 acres of PEM wetland is anticipated to be temporarily impacted by the proposed 100-foot construction ROW centered on the proposed centerline.

Table 3. PEM Wetland Acreage within the Survey area.

Wetland ID	Total Wetland Area (acres)	Temporarily Impacted Wetland Area within 100-foot ROW (acres)	Crossing Distance (feet)	USACE Jurisdictional Status[1]
WET 1	0.07	0.03	3.3	Jurisdictional
WET 2	0.01	0	0	Jurisdictional
WET 3	0.02	0.02	22.7	Non-Jurisdictional

Wetland ID	Total Wetland Area (acres)	Temporarily Impacted Wetland Area within 100-foot ROW (acres)	Crossing Distance (feet)	USACE Jurisdictional Status[1]
WET 4	0.07	0.01	0	Non-Jurisdictional
WET 5	0.02	0	0	Jurisdictional
WET 6	1.84	1.02	454.3	Jurisdictional
WET 7	0.11	0.0004	0	Non-Jurisdictional
WET 8	0.25	0.14	66.4	Jurisdictional
WET 9	0.24	0.05	0	Non-Jurisdictional
WET 10	0.30	0.17	74.4	Jurisdictional
WET 11	0.11	0.06	0	Non-Jurisdictional
WET 12	0.01	0	0	Non-Jurisdictional
WET 13	0.01	0	0	Non-Jurisdictional
WET 14	0.60	0.30	77.8	Jurisdictional
WET 15	0.24	0.17	90.7	Jurisdictional
Total	**3.9**	**1.97**	**789.6**	

[1] The USACE has the final authority on the jurisdictional status of a waterbody

3.5 WATERBODIES

SWCA identified one perennial stream, one intermittent stream, and one pond of approximately 0.19 acre (Table 4). The single perennial waterbody (Beaver Creek) will be crossed approximately three times by the currently proposed centerline. Two drainages were noted within the survey area and displayed no indicators of an ordinary high water mark (Appendix A). Additionally, these drainages did not meet the criteria to be considered a wetland.

Table 4. Waterbody ID, Names, Classification, Acreages, Crossing Methods and Lengths, and Jurisdictional Status.

Waterbdody ID	Waterbody Name	Classification	Determined Area (acres)	Crossing Length (feet)	USACE Jurisdictional Status[1]
WB1	Unnamed	Intermittent Stream	N/A	5.9	Jurisdictional
WB2	Beaver Creek	Perennial Stream	N/A	4.3	Jurisdictional
WB3	Beaver Creek	Perennial Stream	N/A	5–15	Jurisdictional
WB4	Beaver Creek	Perennial Stream	N/A	5–15	Jurisdictional

WB5	Beaver Creek	Perennial Stream	N/A	5–15	Jurisdictional
WB6	Unnamed	Pond	19	N/A	Jurisdictional

[1] The USACE has the final authority on the jurisdictional status of a waterbody.

3.6 WILDLIFE

SWCA conducted a cursory threatened and endangered species survey concurrently with the wetland determination. Ecologists did not observe any primary (i.e., actual sighting) or secondary (tracks, scat, fur) indication of the presence of threatened or endangered species. However, the survey area does contain suitable foraging and stopover habitat for the whooping crane (*Grus americana*) and foraging habitat for the gray wolf (*Canis lupus*).

3.6.1 Endangered Species Act

3.6.1.1 Black-footed Ferret (*Mustela nigripes*)

Federal Status: Endangered

Affects Determination: No Effect

Black-footed ferrets are nocturnal, solitary carnivores of the weasel family that have been largely extirpated from the wild primarily due to range-wide decimation of the prairie dog (*Cynomys* sp.) ecosystem (Kotliar et al. 1999). They have been listed by the USFWS as endangered since 1967, and have been the object of extensive re-introduction programs (USFWS 2010b). Ferrets inhabit extensive prairie dog complexes of the Great Plains, typically composed of several smaller colonies in proximity to one another that provide a sustainable prey base. The *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act* (USFWS 1989) states that ferrets require black-tailed prairie dog (*Cynomys ludovicianus*) towns or complexes greater than 80 acres in size, and towns of this dimension may be important for ferret recovery efforts (USFWS 1988a). Prairie dog towns of this size were not observed during the field survey. In addition, this species has not been observed in the wild for more than 20 years. Therefore, the proposed COLT Connector Pipeline project would have **no effect** on this species.

3.6.1.2 Gray Wolf

Federal Status: Endangered

Affects Determination: No Effect

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s with only sporadic reports from the 1930s to present (Licht and Huffman 1996). The presence of wolves in most of North Dakota consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings that have occurred within western North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known pack of wolves is the Minnesota population located approximately 28 kilometers (km) from the northeast corner of North Dakota.

The gray wolf uses a variety of habitats that support a large prey base, including mountain and low-elevation forests, grasslands, and desert scrub (USFWS 2010c). Due to a lack of forested habitat and distance from Minnesota and Manitoba populations, as well as the troubled relationship between humans and wolves and their vulnerability to being shot in open habitats (Licht and Huffman 1996), the re-establishment of gray wolf populations in North Dakota is unlikely. Additionally, habitat fragmentation may further act as a barrier against wolf recolonization in western North Dakota. Therefore, the proposed COLT Connector Pipeline project would have **no effect** on the gray wolf.

3.6.1.3 Whooping Crane (*Grus americana*)

Federal Status: Endangered
Affect Determination: May Affect, Is Not Likely to Adversely Affect

The whooping crane was listed as endangered in 1970 in the United States by the USFWS and in 1978 in Canada. Historically, population declines were caused by shooting and destruction of nesting habitat in the prairies from agricultural development. Current threats to the species include habitat destruction, especially suitable wetland habitats that support breeding and nesting, as well as feeding and roosting during their fall and spring migration (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007).

The July 2010 total wild population was estimated at 383 (USFWS 2010d). There is only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, which nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83% of the wild nesting sites occur (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007; USFWS 2010d). Williams County, including the survey area, is within the primary migratory flyway of whooping cranes.

Whooping cranes probe the soil subsurface with their bills for foods on the soil or vegetation substrate (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007). Whooping cranes are omnivores and foods typically include agricultural grains, as well as insects, frogs, rodents, small birds, minnows, berries, and plant tubers. The largest amount of time during migration is spent feeding in harvested grain fields (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007). Studies indicate that whooping cranes use a variety of habitats during migration, in addition to cultivated croplands, and generally roost in small palustrine (marshy) wetlands within 1 km of suitable feeding areas (Howe 1987, 1989). Whooping cranes have been recorded in riverine habitats during their migration, with eight sightings along the Missouri River in North Dakota (Canadian Wildlife Service and U.S. Fish and Wildlife Service 2007:18). In these cases, they roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

Suitable whooping crane foraging habitat (i.e., cultivated cropland) was observed within the survey area. Therefore, the proposed project **may affect, but is not likely to adversely affect** the endangered whooping crane.

3.6.1.4 Piping Plover (*Charadrius melodus*)

Federal Status: Threatened

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The piping plover is a small shorebird which breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Piping plover populations were federally listed as threatened and endangered in 1985, with the Northern Great Plains and Atlantic Coast populations listed as threatened, and the Great Lakes population listed as endangered (USFWS 1985a).

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems (USFWS 2002, 2010e). The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. Piping plovers nest on the ground, making shallow scrapes in the sand, which they line with small pebbles or rocks (USFWS 1988b). Anthropogenic alterations of the landscape along rivers and lakes where piping plover nest have increased the number and type of predators, subsequently decreasing nest success and chick survival (USFWS 2002, 2010e). The birds fly south by mid to late August to areas along the Texas coast and Mexico (USFWS 2002). The Northern Great Plains population has continued to decline despite federal listing, with population estimates of 1,500 breeding pairs in 1985 reduced to fewer than 1,100 in 1990. Low survival of adult birds has been identified as a factor (Root et al. 1992). Current conservation strategies include identification and preservation of known nesting sites, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 1988b, 2010e).

A suitable shoreline habitat for breeding and nesting plovers does not occur within the survey area, and Lake Sakakawea is a minimum of 13 river miles away from the proposed survey area. It is unlikely that migrating plovers would visit the survey area during their migration. Therefore, the proposed project **may affect, but is not likely to adversely affect** piping plovers.

3.6.1.5 Designated Critical Habitat of Piping Plover

Affect Determination: No Effect

The USFWS has designated critical habitat for the Great Lakes and Northern Great Plains populations of piping plover (USFWS 2002). Designated critical habitat for the piping plover includes 183,422 acres and 1,207.5 river miles of habitat along the shoreline of Lake Sakakawea in McKenzie County, North Dakota (USFWS 2002).

Since the proposed project will not modify, alter, disturb, or affect the shoreline of Lake Sakakawea or any of its tributary streams in any way, **no effect** to designated critical habitat of the piping plover would occur.

3.6.1.6 Interior Least Tern (*Sterna antillarum*)

Federal Status: Endangered

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The interior population of the least tern is listed as endangered by the USFWS (1985b). This bird is the smallest member of the gull and tern family, measuring approximately 9 inches in

length. Terns remain near flowing water, where they feed by hovering over and diving into standing or flowing water to catch small fish (USFWS 2010f).

The interior population of least terns breeds in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems, where they nest in small colonies. From late April to August, terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed flat and bare sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. The adults continue to care for chicks after they hatch. Least terns in North Dakota will often be found sharing sandbars with the piping plover, a threatened species (USFWS 2010f).

Census data indicate over 8,000 least terns in the interior population. In North Dakota, the least tern is found mainly on the Missouri River from Garrison Dam south to Lake Oahe, and on the Missouri and Yellowstone rivers upstream of Lake Sakakawea (USFWS 1990a, 2010f). Approximately 100 pairs breed in North Dakota (USFWS 2010f). Details of their migration are not known, but their winter range is reported to include the Gulf of Mexico and Caribbean Islands (USFWS 1990a, 2010f).

Loss of suitable breeding and nesting habitat for terns has resulted from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande River systems. River and reservoir changes have led to reduced sandbar formation and other shoreline habitats for breeding, resulting in population declines. In addition, other human shoreline disturbances affect the species (USFWS 1990a). Critical habitat has not been designated for the species (USFWS 2010f).

Current conservation strategies include identification and avoidance of known nesting areas, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 2010f).

A suitable shoreline habitat for breeding and nesting terns does not occur in the survey area, and Lake Sakakawea is a minimum of 13 river miles away from the survey area. It is unlikely that terns would visit the upland or wetland habitats present in the survey area. Therefore, the proposed COLT Connector Pipeline project **may affect, but is not likely to adversely affect** endangered least terns.

3.6.1.7 Pallid Sturgeon (*Scaphirhynchus albus*)

Federal Status: Endangered
Affect Determination: May Affect, Is Not Likely to Adversely Affect

The pallid sturgeon was listed as Endangered in 1990 in the United States by the USFWS (1990b). The primary factor leading to the decline of this species is the alteration of habitat through river channelization, creation of impoundments, and alteration of flow regimes (USFWS 1990b). These alterations within the Missouri River have blocked movements to spawning, feeding, and rearing areas; destroyed spawning habitat; altered flow conditions which can delay spawning cues; and reduced food sources by lowering productivity (USFWS 2007a). The fundamental elements of pallid sturgeon habitat are defined as the bottom of swift waters of large, turbid, free-flowing rivers with braided channels, dynamic flow patterns, flooding of terrestrial habitats, and extensive microhabitat diversity (USFWS 1990b).

The pallid sturgeon population which may be found approximately 13 river miles from the survey area occurs from the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS 2007a). This population consists of approximately 136 wild adult pallid sturgeon (USFWS 2007a). Hatchery reared sturgeon have also been stocked since 1998. The pallid sturgeon has been found to utilize the 25 km of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996 per USFWS 2007a). Larval pallid sturgeons have also been found to drift into Lake Sakakawea. While the majority of pallid sturgeons are found in the headwaters of Lake Sakakawea, North Dakota Game and Fish have caught and released pallid sturgeon in nets set in 80 to 90 feet of water between the New Town and Van Hook area. Based on this information, pallid sturgeon could be found throughout Lake Sakakawea (personal communication, email from Steve Krentz, Pallid Sturgeon Project Lead, U.S. Fish and Wildlife Service, to Mike Cook, Aquatic Ecologist, SWCA Environmental Consultants, September 3, 2010).

A suitable habitat for pallid sturgeon does not occur in the survey area, and Lake Sakakawea is a minimum of 13 river miles away from the proposed survey area. However, Beaver Creek, which drains a portion of the survey area, is a perennial tributary to the Missouri River and Lake Sakakawea. Potential pollution occurring as a result of construction activities and pipeline operations are concerns for downstream populations of endangered pallid sturgeon. Activities associated with the construction, reclamation, and operation of the proposed COLT Connector Pipeline project are not anticipated to adversely affect water quality and subsequently the pallid sturgeon. Therefore, the proposed project **may effect, but is not likely to adversely affect** pallid sturgeon.

3.6.1.8 Dakota Skipper (*Hesperia dacotae*)

Federal Status: Candidate
Affect Determination: May Affect, Is Not Likely to Adversely Affect

The Dakota skipper is a small butterfly with a 1-inch wingspan and is found primarily in undisturbed native tall grass and upland dry mixed grass prairie areas with a high diversity of wildflowers and grasses (Committee on the Status of Endangered Wildlife in Canada 2003). The Dakota skipper appears to require a range of precipitation-evaporation ratios between 60 and 105 and a soil pH between 7.2 and 7.9 (McCabe 1981). Larvae feed on grasses, favoring little bluestem. Adults commonly feed on nectar of flowering native forbs such as harebell (*Campanula rotundifolia*), wood lily (*Lilium philadelphicum*), and purple coneflower. The species is threatened by conversion of native prairie to cultivated agriculture or shrublands, over-grazing, invasive species, gravel mining, and inbreeding (USFWS 2005). Dakota skippers are not known to occur within the survey area; however, suitable habitat does occur. The proposed project **may affect, but is not likely to adversely affect** this species. The use of best management practices and conservation guidelines (USFWS 2007b) during construction and operation and immediate reclamation of short-term disturbance should decrease direct, indirect, and cumulative impacts to this species.

3.6.1.9 Sprague's Pipit (*Anthus spragueii*)

Federal Status: Candidate

Affect Determination: May Affect, Is Not Likely to Adversely Affect

The Sprague's pipit is a small passerine bird that is native to the North American grasslands. It is a ground nester that breeds and winters on open grasslands and feeds mostly on insects and spiders and some seeds. The Sprague's pipit is closely tied with native prairie habitat and breeds in the north-central United States in Minnesota, Montana, North Dakota, and South Dakota as well as south-central Canada (USFWS 2010g). Wintering occurs in the southern states of Arizona, Texas, Oklahoma, Arkansas, Mississippi, Louisiana, and New Mexico. Within the survey area, suitable habitat does occur. The proposed project **may affect, but is not likely to adversely affect** this species.

3.6.2 Migratory Bird Treaty Act / Bald and Golden Eagle Protection Act

3.6.2.1 Bald Eagle (*Haliaeetus leucocephalus*)

Federal Status: Delisted in 2007; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Effects of Project: No adverse effects anticipated

Suitable nesting or foraging habitat for bald eagles includes old growth trees relatively close (usually less than 1.24 miles [Hagen et al. 2005]) to perennial waterbodies. The survey area does not contain old growth trees and is at least 6.4 actual miles from Lake Sakakawea. Therefore, no adverse effects are anticipated. However, the possibility of transient, flying bald eagle individuals traversing the survey area does exist.

3.6.2.2 Golden Eagle (*Aquila chrysaetos*)

Federal Status: Unlisted; protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act

Effects of Project: No adverse effects anticipated

No golden eagles were observed during the field surveys, however, golden eagles may occur within or near the survey area. The golden eagle prefers habitat characterized by open prairie, plains, and forested areas. Usually, golden eagles can be found in proximity to badland cliffs which provide suitable nesting habitat. However, no primary or secondary indication of golden eagle presence, including nests, was observed within or near the survey area during the field survey. Therefore, the proposed project is unlikely to cause any adverse effects to golden eagles.

3.6.3 Wildlife Observed

During the field survey, SWCA ecologists observed different species of wildlife which utilize wetlands and other habitat within the survey area. Species observed included a leopard frog (*Rana pipiens*), ring-necked pheasant (*Phasianus colchicus*), and a sharp-tailed grouse (*Tympanicus phasianellus*).

Additionally, secondary observations of a northern raccoon (*Procyon lotor*), white-tailed deer (*Odocoileus virginianus*), bivalve shells, and various waterfowl were observed.

3.7 TREE, SAPLING, AND SHRUB COUNT

During SWCA's field survey, approximately 15 windbreaks and 9 naturally occurring forested upland and shrubland areas were geographically referenced within the survey area. SWCA calculated an average density of 182 individual silver buffaloberry individuals per acre. Table 5 indicates the number of trees estimated to be impacted by the COLT Connector Pipeline project as currently proposed. The ND PSC requires a 2:1 post- to pre-construction mitigation for all trees impacted during the construction of the proposed pipeline. Therefore, SWCA estimates approximately 720 2-year-old sapling individuals will need to be replanted in order to fulfill the 2:1 mitigation requirement.

Table 5. Tree, Sapling, and Shrub Count

Woody Vegetation (WV) ID	Species	Type	Number of Trees		Estimated Mitigation Commitment
			200-foot Survey ROW	100-foot Construction ROW	
WV1	*Elaeagnus angustifolia, Caragana arborescens*	Farmstead windbreak	117	0	0
WV2	*Shepherdia argentea*	Natural	60	42	84
WV3	*Shepherdia argentea, Fraxinus pennsylvanica*	Natural	21	2	4
WV4	*Shepherdia argentea*	Natural	5	2	4
WV5	*Shepherdia argentea*	Natural	20	9	18
WV6	*Prunus virginiana*	Natural	50	7	14
WV7	*Prunus virginiana*	Natural	75	4	8
WV8	*Crataegus mollis*	Natural	75	20	40
WV9	*Pinus ponderosa*	Field windbreak	16	8	16
WV10	*Prunus virginiana*	Field windbreak	40	20	40
WV11	*Pinus ponderosa*	Field windbreak	40	20	40
WV12	*Pinus ponderosa*	Field windbreak	40	20	40
WV13	*Ulmus pumila, Pinus ponderosa, Caragana arborescens*	Farmstead windbreak	120	60	120
WV14	*Shepherdia argentea*	Natural	5	5	10
WV15	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	22	11	22
WV16	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	10	5	10
WV17	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	25	12	24
WV18	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	30	15	30

Woody Vegetation (WV) ID	Species	Type	Number of Trees		Estimated Mitigation Commitment
			200-foot Survey ROW	100-foot Construction ROW	
WV19	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	50	25	50
WV20	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	46	23	46
WV21	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	45	22	44
WV22	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	40	20	40
WV23	*Ulmus pumila, Fraxinus pennsylvanica*	Field windbreak	10	5	10
WV24	*Ulmus pumila, Shepherdia argentea, Prunus virginiana*	Natural	3	3	6

4.0 CONCLUSIONS AND RECCOMENDATIONS

1. SWCA ecologists recorded approximately 3.9 acres of wetlands within the survey area.
2. In total, 1.97 acres of PEM wetland *may* be temporarily impacted by construction activities.
3. SWCA estimates 360 trees, saplings, and shrubs may be impacted. Therefore, approximately 720 2-year-old saplings may need to be replanted to fulfill the 2:1 mitigation requirement.
4. According to the recommendations of the North Dakota Forest Service, tree species selection for replacement should be accomplished through collaboration with a reputable area nursery. This will allow for species to be selected based on various factors including species hardiness and area soil type (personal communication, telephone conversation between Tom Claeys, Forestry and Fire Management Team Leader, North Dakota Forest Service, and Michael Cook, Ecologist, SWCA, December 7, 2009).
5. According to the recommendations of the North Dakota Forest Service, non-native species are permitted and to an extent recommended for planting as they may be more resistant to known tree pathogens in the area (personal communication, telephone conversation between Tom Claeys, Forestry and Fire Management Team Leader, North Dakota Forest Service, and Michael Cook, Ecologist, SWCA, December 7, 2009).
6. No threatened or endangered species were observed during the field survey. The known species which occur in Williams County are not likely to be detrimentally impacted by construction activities.

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APPENDIX A

Vicinity Maps and Site Layout Maps

COLT Connector Pipeline



Legend

- Field Surveyed/Final Pipeline Alignment
- Originally Proposed Pipeline Alignment
- 200-foot Surveyed Area
- 100-foot Construction ROW
- Stream
- Ephemeral Drainage
- Existing Road
- Woody Vegetation
- Pond
- Wetland
- Township/Range
- Section Line

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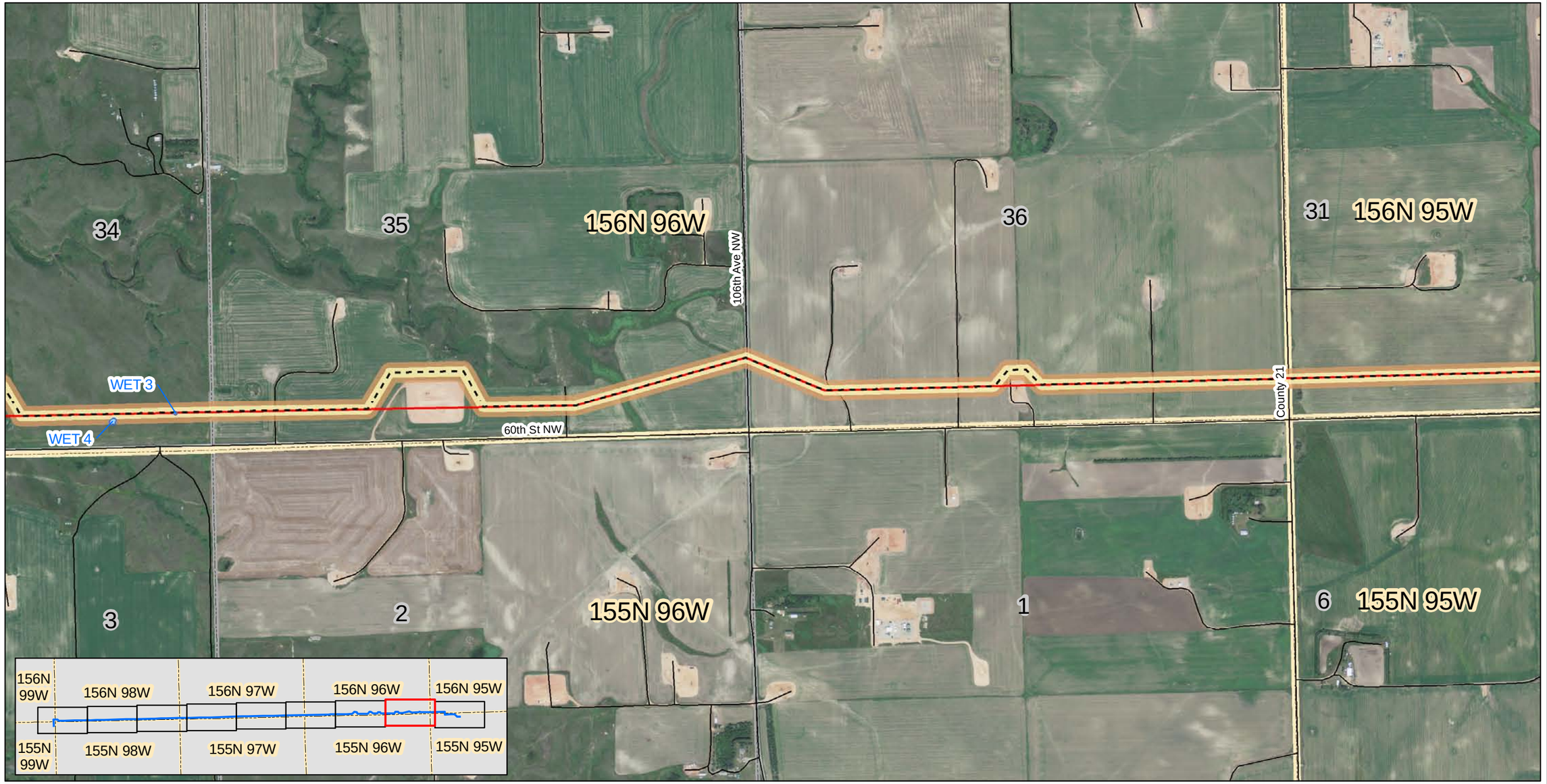
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Scale: 1:12,000
Base Map: Aerial Photo, National Agricultural Imagery Program, 2010
Williams County, North Dakota

UTM Zone 13N, NAD83, Meters
January 03, 2011

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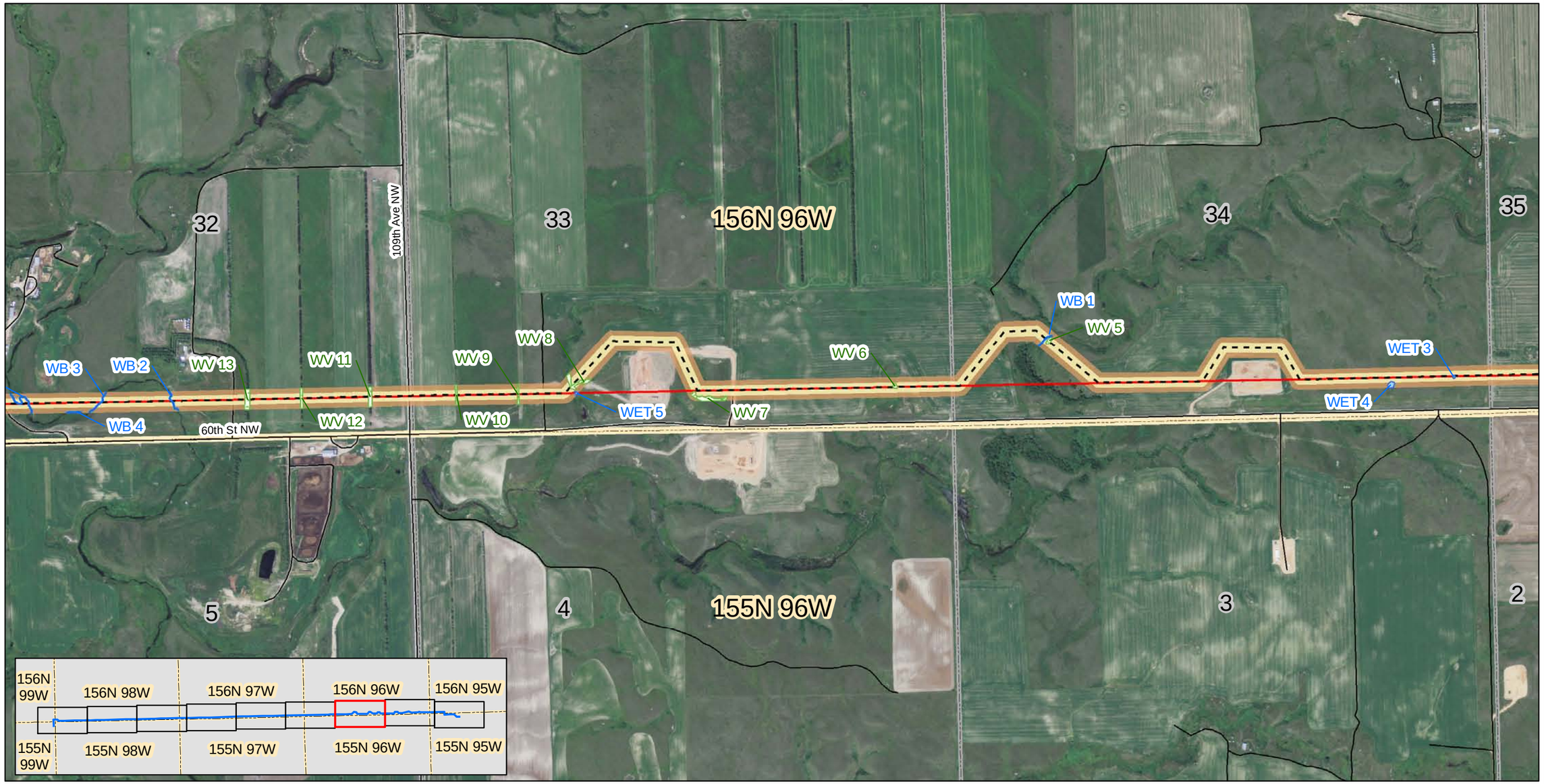
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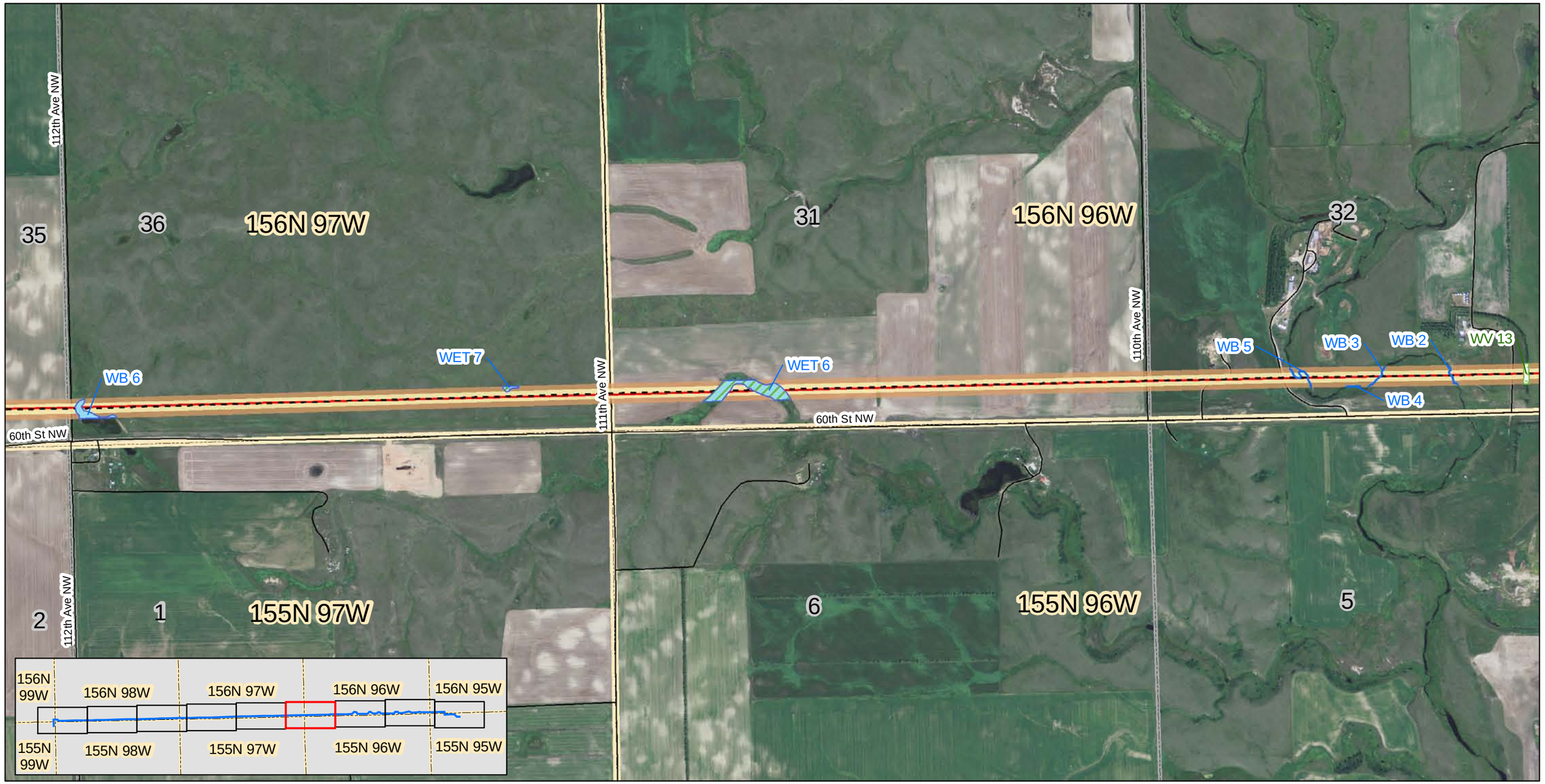
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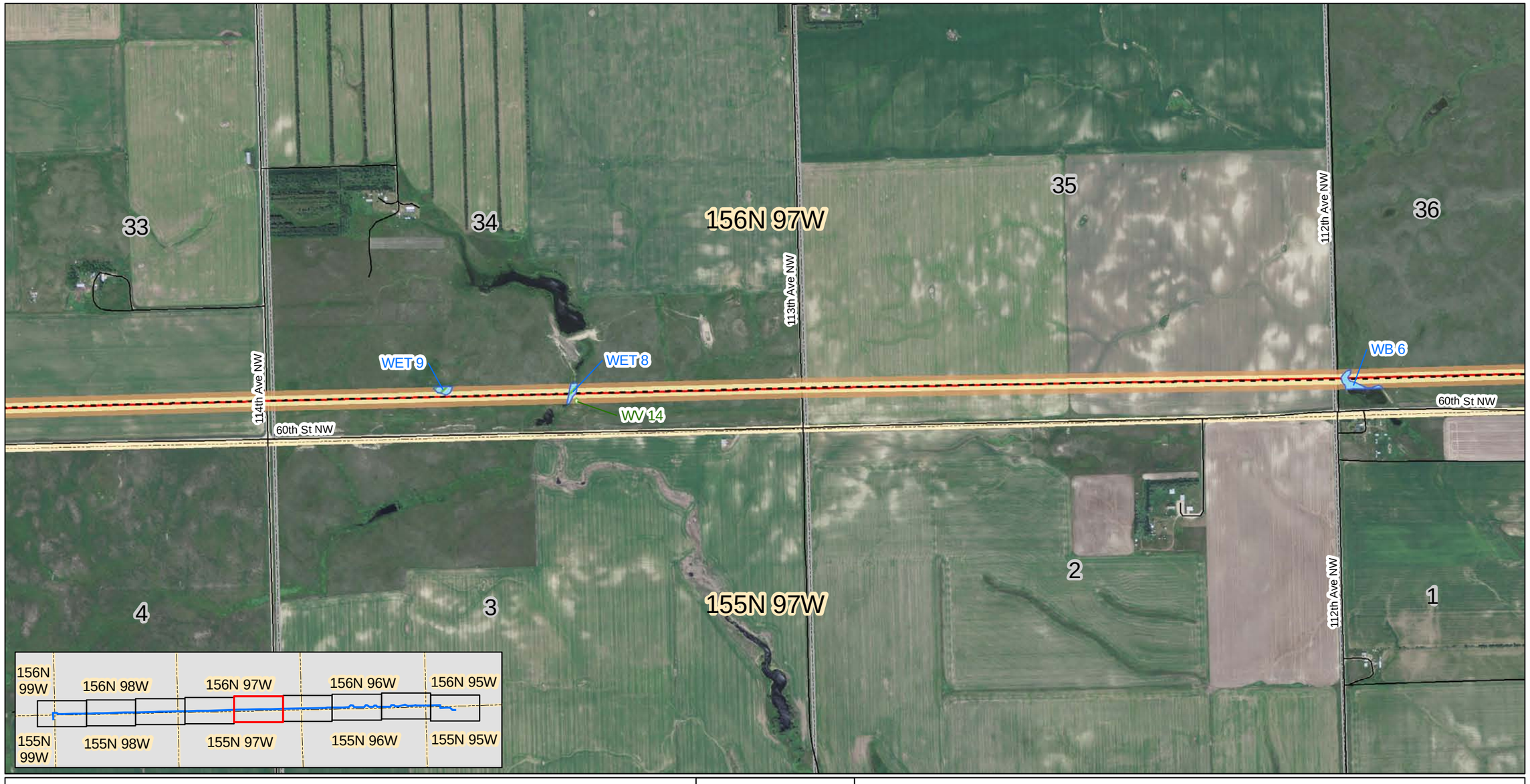
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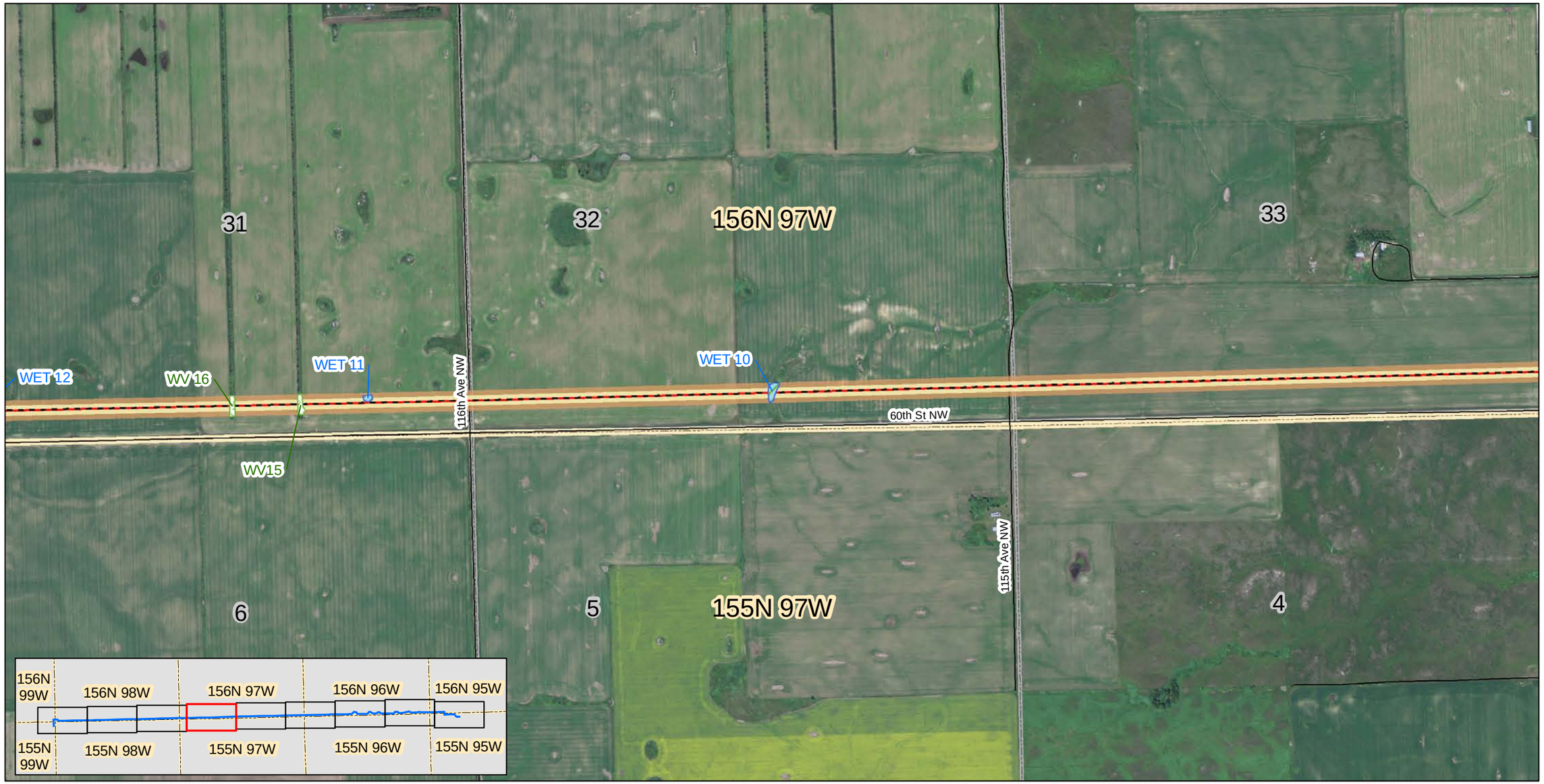
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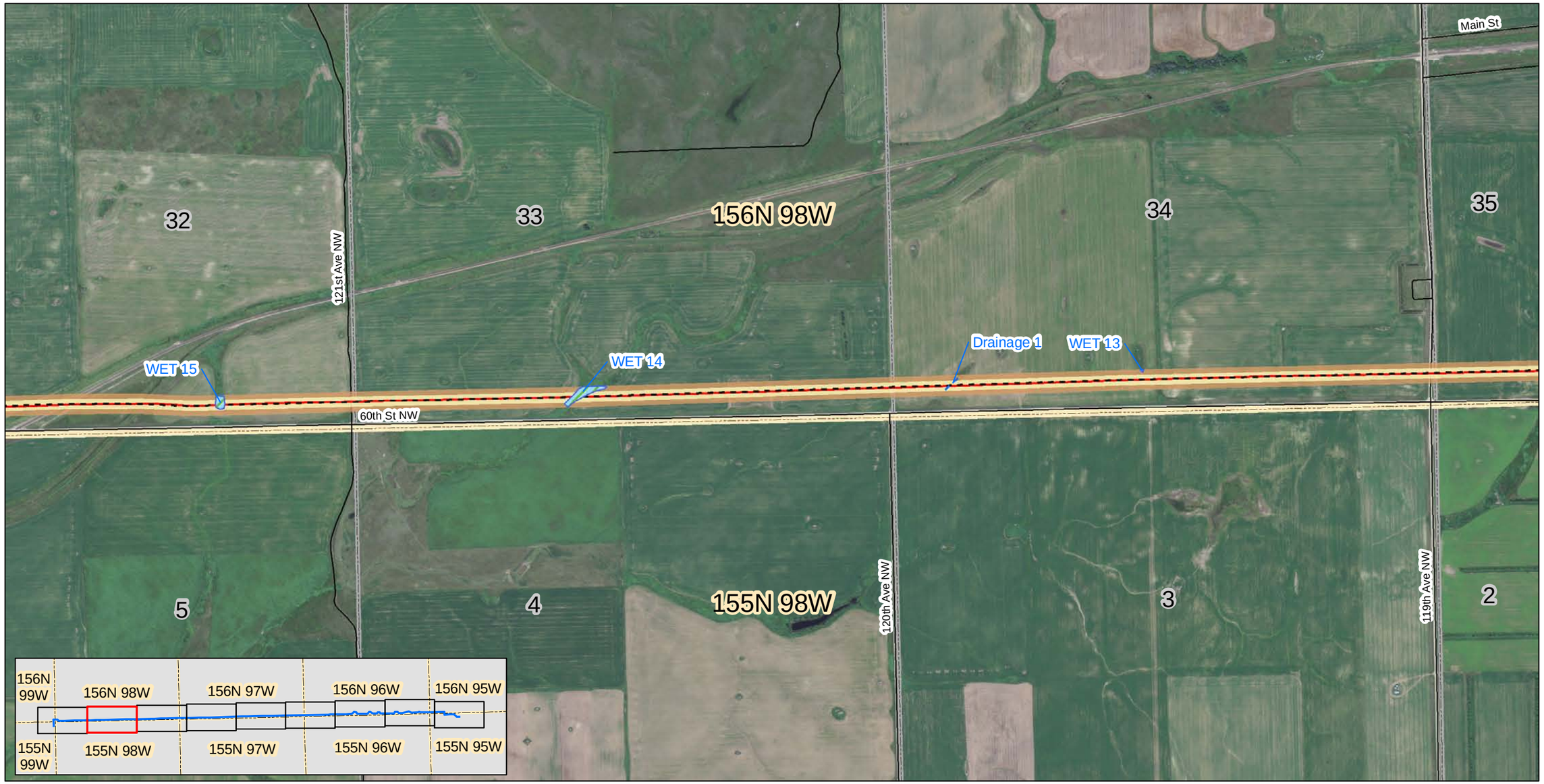
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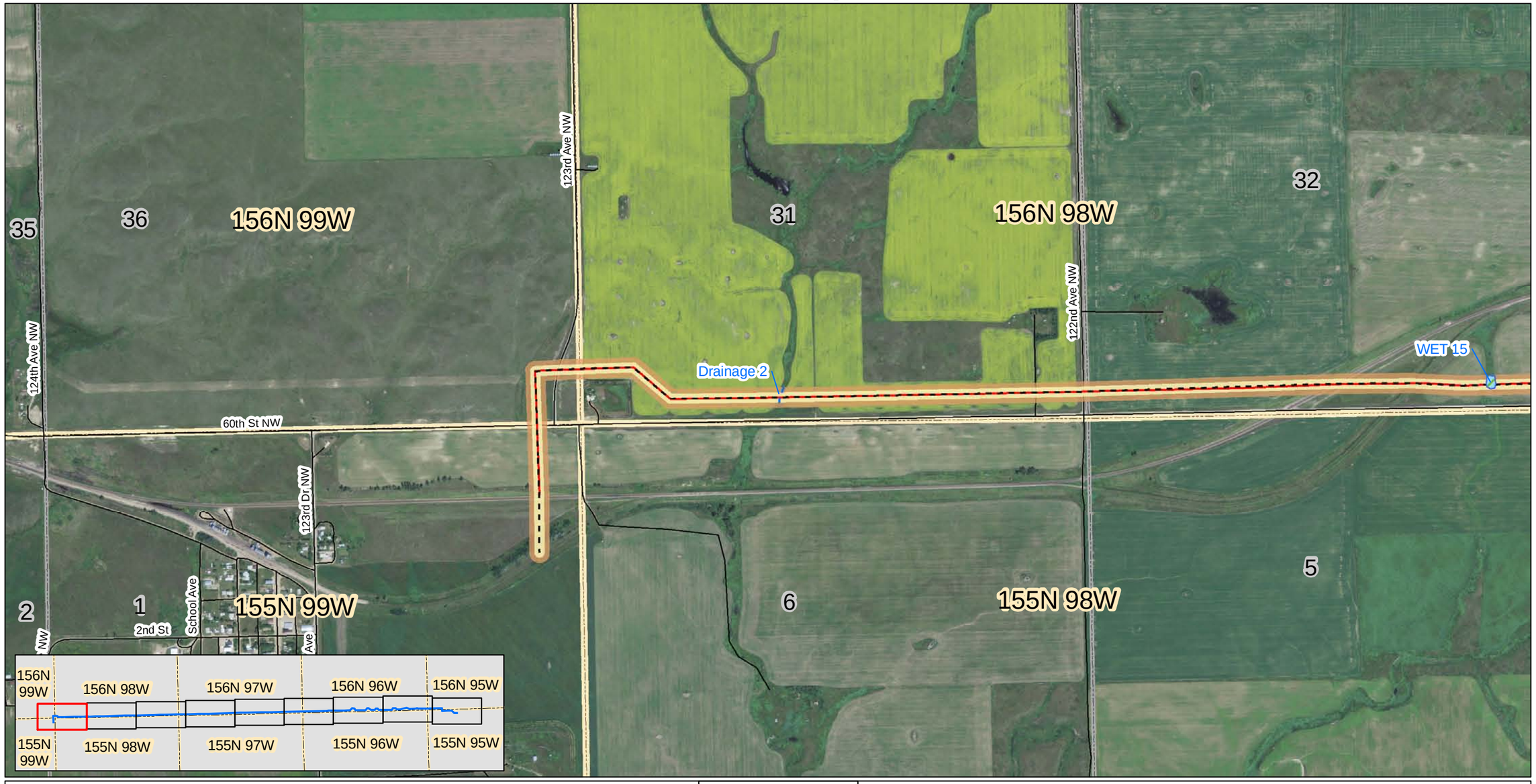
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Scale: 1:12,000
Base Map: Aerial Photo, National Agricultural Imagery Program, 2010
Williams County, North Dakota

UTM Zone 13N, NAD83, Meters
January 03, 2011

N
W E
S

COLT Connector Pipeline



Legend

- Field Surveyed/Final Pipeline Alignment
- Originally Proposed Pipeline Alignment
- 200-foot Surveyed Area
- 100-foot Construction ROW
- Stream
- Ephemeral Drainage
- Existing Road
- Woody Vegetation
- Pond
- Wetland
- Township/Range
- Section Line

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W E
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APPENDIX B
Photographic Log



Photograph 1. Facing west looking across wheat stubble field.



Photograph 2. Facing west toward WET 1



Photograph 3. Facing east toward waterbody near WET 6



Photograph 4. Facing west toward Beaver Creek



Photograph 5. Facing west toward Beaver Creek



Photograph 6. Facing west along centerline



Photograph 7. Facing east along centerline



Photograph 8. Facing south toward termination point of proposed alignment.

APPENDIX C
USDA-NRCS Soil Map Unit Descriptions

AMOR
The Amor series consists of moderately deep, well-drained, moderately permeable soils found on sandstone bedrock uplands with slopes ranging from approximately 0 to 25 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15 inches and mean annual air temperature is approximately 42 degrees Fahrenheit (°F). This soil type is largely used for cultivation of small grains, flax, and corn. Native vegetation species common to this soil type include needleandthread (*Hesperostipa comata*), western wheatgrass (*Pascopyrum smithii*), and blue grama (*Bouteloua gracilis*) (NRCS 2009).

ARNEGARD
The Arnegard series consists of very deep, well- or moderately well-drained soils that formed in calcareous loamy alluvium on upland swales, terraces, fans, and foot slopes. Permeability is moderate. Slopes range from 0 to 25 percent. Mean annual air temperature is 42°F, and mean annual precipitation is 14 inches. Most areas are cropped to spring wheat, oats, barley, and hay. Native vegetation is mid, tall, and short grasses such as western wheatgrass, green needlegrass (*Nasella viridula*), big bluestem (*Andropogon gerardii*), and blue grama (NRCS 2009).

BOWDLE
The Bowdle series consists of well-drained soils formed in loamy alluvium underlain by sand and gravel. The soils are moderately deep over sand and gravel and are on outwash plains and stream terraces. Permeability is moderate in the solum and rapid or very rapid in the underlying material. Slopes range from 0 to 15 percent. Mean annual precipitation is about 18 inches, and mean annual air temperature is about 44°F. This soil type is primarily cropped to small grain, alfalfa, and some flax and corn. Native vegetation is primarily western wheatgrass, blue grama, green needlegrass, needleandthread, forbs, and sedges (NRCS 2009).

CABBA
The Cabba series consists of shallow, well-drained, moderately permeable soils found on hills, escarpments, and sedimentary plains. The soil slopes broadly range between 2 and 70 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 16 inches and mean annual air temperature is approximately 43°F. The most common vegetation species found on this soil type are little bluestem (*Schizachyrium scoparium*), green needlegrass, and other various herbs, forbs, and shrub species (NRCS 2009).

FARNUF
The Farnuf series consists of very deep, well-drained soils that formed in alluvium, glaciolacustrine, or glaciofluvial deposits. These soils are on alluvial fans, stream terraces, hills, sedimentary plains, glacial lake plains, moraines, and outwash plains. Slopes are 0 to 35 percent. Mean annual precipitation is approximately 16 inches and mean annual air temperature is approximately 42°F. Farnuf soils are used mainly for irrigated and nonirrigated cropland. The potential native vegetation is primarily mid and short grasses such as western wheatgrass, prairie sandreed (*Calamovilfa longifolia*), green needlegrass, little bluestem, needleandthread, blue grama, shrubs, and forbs (NRCS 2009).

KORCHEA
The Korchea series consists of very deep, well-drained soils found on floodplains and low stream terraces. Permeability is moderate with slopes ranging from approximately 0 to 6 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 15inches and mean annual air temperature is approximately 42°F. This soil type is used most often for cultivation of small grains, hay, and corn. Alternatively, this soil is used for rangeland foraging. Native vegetation species common to this soil type include needleandthread, green needlegrass, and western wheatgrass (NRCS 2009).

LEHR
The Lehr series consists of very deep, somewhat excessively drained shallow that formed in loamy alluvium over sand and gravel. Permeability is moderate or moderately rapid in the upper part and rapid or very rapid in the substratum. These soils are on outwash plains and stream valley terraces and have slopes ranging from 0 to 25 percent. Mean annual air temperature is 40°F, and mean annual precipitation is 14 inches. Where cultivated, small grains, corn, and hay are the principal crops. In pastures, the native vegetation consists of mid and short prairie grasses such as western wheatgrass, blue grama, and upland sedges (NRCS 2009).

WABEK
The Wabek series consists of very deep, excessively drained, rapidly and very rapidly permeable soils formed in sand and gravel glaciofluvial deposits. These soils are on outwash plains, beach ridges, terraces, and terrace escarpments and have slopes of 0 to 45 percent. Mean annual air temperature is 42°F, and mean annual precipitation is 16 inches. This series is used mainly for range and pasture. Native vegetation is blue grama, upland sedges (*Carex* spp.), western wheatgrass, needleandthread, and forbs (NRCS 2009).

WILLIAMS
The Williams series consists of very deep, slowly permeable, well-drained soils found on glacial till plains and moraines with slopes at approximately 0 to 35 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 42°F. This soil type is largely used for cultivation. Native vegetation species common to this soil type include western wheatgrass, needleandthread, blue grama, and green needlegrass (NRCS 2009).

ZAHL
The Zahl series consists of very deep, slowly permeable, well-drained soils found on glacial till plains, moraines, and valley side slopes at approximately 1 to 60 percent. The mean annual precipitation found throughout the spatial extent of this soil type is approximately 14 inches and mean annual air temperature is approximately 40°F. This soil type is largely used for rangeland foraging. Native vegetation species common to this soil type include western wheatgrass, little bluestem, and needleandthread (NRCS 2009).

APPENDIX D
USACE NWP 12 Information

Nationwide Permit (12) Utility Line Activities (3/19/2007)

Activities required for the construction, maintenance, repair, and removal of utility lines and associated facilities in waters of the United States, provided the activity does not result in the loss of greater than 1/2 acre of waters of the United States.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A "utility line" is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term "utility line" does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2 acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the total discharge from a single and complete project does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under section 10 waters without a discharge of dredged or fill material require a section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (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 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; or (7) permanent access roads are constructed in waters of the United States with impervious materials. (See general condition 27.) (Sections 10 and 404)

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., section 10 waters), copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work, accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a section 404 permit (see NWP 15).

REGIONAL CONDITIONS:

1. Construction of access roads is limited to 1/3 acre of impacts to waters of the United States.

2. Notification is required for discharges associated with the construction of utility line substations that result in the loss of greater than 5000 square feet of waters of the United States.

3. For utility activities requiring notification the permittee shall submit the following information:

- **a. A map of the entire utility corridor including a delineation of all wetlands and waters of the United States within the corridor. Aquatic resource information shall be submitted using the Cowardin Classification System mapping conventions (e.g. PFO, PEM, POW, etc.).**
- **b. An alternatives analysis, which specifically addresses the following:**
  - **i. Selection of an alignment, which avoids and minimizes wetland impacts to the maximum extent practicable. The utility line should make a direct or perpendicular crossing of a stream. Directional drilling is the preferred method of installation when possible, especially in tidal waters.**
  - **ii. Selection of an alignment, which avoids fragmenting large tracts of forested wetlands by routing utility lines outside of forested tracts or on the edges of forested tracts.**
  - **iii. Minimizing clearing of wetlands. Grubbing shall be limited to the permanent easement for underground utility lines. Outside of the permanent easement, wetland vegetation shall be removed at or above the ground surface unless written justification is provided and the impacts are reviewed and approved by the Corps.**
  - **iv. For overhead utility lines, allow natural succession to restore and maintain the corridor in scrub-shrub wetlands except for a minimum corridor needed for access, to the maximum extent practicable.**
  - **v. For buried utility lines allowing natural succession to restore the area to tree and scrub/shrub except for a 20-foot wide access corridor, to the maximum extent practicable.**

4. For all submerged utility lines across navigable waters of the United States, a location map and cross-sectional view showing the utility line crossing from bank to bank is required. In addition, the location and depth of the Federal Project Channel shall be shown in relation to the proposed utility line. In general, all utility lines shall be buried at least 6 feet below the authorized bottom depth of Federal project channel and at least 3 feet below the bottom depth in all subaqueous areas. When circumstances prevent the placement of at least three feet of cover over the line (outside of the Federal Project Channel), then written justification and an alternative method must be provided with the notification and the deviation must be reviewed and approved by the Corps.

5. Whenever possible, excavated material shall be placed on an upland site. However, when this is not feasible, temporary stockpiling is hereby authorized provided that:

- **a. All excavated material stockpiled in a vegetated wetland area is placed on filter cloth, mats, or some other semi-permeable surface. The material will be stabilized with straw bales, filter cloth, etc. to prevent reentry into the waterway.**
- **b. All excavated material must be placed back into the trench to the original contour and all excess excavated material must be completely removed from the wetlands within 30 days after the pipeline has been laid through the wetlands area.**
- **c. Permission must be granted by the District Engineer or his authorized representatives if the material is to be stockpiled longer than 30 days.**

6. When open-cut trenching in designated anadromous fish areas or hydrostatic testing of a pipeline involving water withdrawals from tidal waters are proposed, the Corps will coordinate with the National Marine Fisheries Service and/or the Virginia Department of Game and Inland Fisheries. In most cases, the following time-of-year restrictions (TOYR) will apply:

- **James River, below Rt. 17 bridge: No TOYR**
- **James River, at Jamestown Island (Gray's Creek) downstream to Rt. 17 bridge: Feb. 15 - Jun 15**
- **James River, at Jamestown Island upstream to Bosher's Dam: Feb. 15 - June 30**
- **James River, above Bosher's (including Rivanna River): March 15 – June 30**
- **Rappahannock River, below Route 360 bridge: Feb. 15 - June 15**
- **York River, below Route 33 bridge: Feb. 15 - June 15**
- **Nansemond River: Feb. 15 - June 15**
- **Elizabeth River: No TOYR until further data are collected on fish movements and spawning.**
- **Unless otherwise noted, Feb. 15 - June 30**

7. Waters Containing Submerged Aquatic Vegetation (SAV) Beds: Notification is required if work will occur in areas that contain submerged aquatic vegetation (SAVs). Information about SAVs can be found at the Virginia Institute of Marine Science's website http://www.vims.edu/bio/sav . Additional avoidance and minimization measures, such as relocating a structure or time of year restrictions may be required to reduce impacts to SAVs.

8. Waters with federally listed endangered or threatened species, waters federally designated as Critical Habitat, and one mile upstream (including tributaries) of any such waters, notification is required for work in the areas listed below for NWP 12.

The Counties of Lee, Russell, Scott, Tazewell, Wise, and Washington in Southwestern Virginia within the following specific waters and reaches:

1) **Powell River - from the Tennessee-Virginia state line upstream to the Route 58 bridge in Big Stone Gap and one mile upstream of the mouth of any tributary adjacent to this portion of the River.**
2) **Clinch River - from the Tennessee-Virginia state line upstream to Route 632 at Pisgah in Tazewell County and one mile upstream of the mouth of any tributary adjacent to this portion of the River, the Little River to its confluence with Maiden Spring Creek, and one mile upstream of the mouth of any tributary adjacent to this portion of Little River.**
3) **North Fork Holston River - from the Tennessee-Virginia state line upstream to the Smyth County/Bland County line and one mile upstream of any tributary adjacent to this portion of the River.**
4) **Copper Creek - from its junction with the Clinch River upstream to the Route 58 bridge at Dickensonville in Russell County and one mile upstream of any tributary adjacent to this portion of the Creek.**
5) **Indian Creek - from its junction with the Clinch River upstream to the fourth Norfolk and Western Railroad bridge at Van Dyke in Tazewell County and one mile upstream of the mouth of any tributary adjacent to this portion of the Creek.**
6) **Middle Fork Holston River - from the Tennessee-Virginia state line to its junction with Walker Creek in Smyth County near Marion, Virginia.**
7) **South Fork Holston River - from its junction with Middle Fork Holston River upstream to its junction with Beech Creek in Washington County.**

This NWP requires notification to work in Lee, Russell, Scott, Smyth, Tazewell, Washington or Wise Counties. For any work in Lee, Russell, Scott, or Wise Counties, please submit the notification to the Norfolk District Corps of Engineers, Clinch Valley Field Office, PO Box 338, Abingdon, Virginia 24212. For any work in Smyth, Tazewell, or Washington Counties please submit the notification to the Norfolk District Corps of Engineers, Virginia Highlands Field

Office, PO Box 1295, Abingdon, Virginia 24212-1295. Written verification from these offices would be required prior to performing the proposed work. It is recommended that the prospective permittees first contact the field offices by telephone at (276) 623-5259 (Clinch Valley) or (276) 676-4807 (Virginia Highlands) to determine if the notification procedures would apply. The notification must be in writing and include the following information (the Joint Permit Application may also be used - be sure to mark it with the letters PCN at the top of the first page):

- **Name, address, and telephone number of the prospective permittee.**
- **Location of the proposed project.**
- **Vicinity map and project drawings on 8.5-inch by 11-inch paper (plan view, profile, & cross section).**
- **Brief description of the proposed project and the project purpose.**
- **Where required by the terms of the nationwide permit, a delineation of affected special aquatic sites, including wetlands.**

When all required information is received by the appropriate field office, the Corps will notify the prospective permittee within 45 days whether the project may proceed under the nationwide permit or whether an individual permit is required. If, after reviewing the notification, the District Engineer determines that the proposed activity would have more than a minimal individual or cumulative adverse impact on the aquatic environment or otherwise may be contrary to the public interest, then he will either condition the nationwide permit authorization to reduce or eliminate the adverse impacts, or notify the prospective permittee that the activity is not authorized by the nationwide permit and provide the permittee with instructions on how to seek authorization under an individual permit.

Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

9. **Designated Trout Waters: Notification is required for work in the areas listed below for NWP 12.**

   This condition applies to activities occurring in two categories of waters; Class V (Put and Take Trout Waters) and Class VI (Natural Trout Waters), as defined by the Virginia State Water Control Board Regulations, Water Quality Standards (VR-680 21-00), dated January 1, 1991, or the most recently updated publication. The Virginia Department of Game and Inland Fisheries (VDGIF) designated these same trout streams into six classes. Classes I-IV are considered wild trout streams. Classes V and VI are considered stockable trout streams. Information on designated trout streams can be obtained via their Virginia Fish and Wildlife Information Service's (VAFWIS's) Cold Water Stream Survey database. Basic access to the VAFWIS is available via http://vafwis.org/wis/asp/default.asp.

   The waters, occurring specifically within the mountains of Virginia, are within the following river basins:

   1) Potomac-Shenandoah
   2) James
   3) Roanoke
   4) New
   5) Tennessee and Big Sandy
   6) Rappahannock

   This condition applies to the following counties and cities: Albemarle, Allegheny, Amherst, Augusta, Bath, Bedford, Bland, Botetourt, Bristol, Buchanan, Buena Vista, Carroll, Clarke, Covington, Craig, Dickenson, Floyd, Franklin, Frederick, Giles, Grayson, Greene, Henry, Highland, Lee, Loudoun, Madison, Montgomery, Nelson, Page, Patrick, Pulaski, Rappahannock, Roanoke City, Roanoke Co., Rockbridge, Rockingham, Russell, Scott, Shenandoah, Smyth, Staunton, Tazewell, Warren, Washington, Waynesboro, Wise, and Wythe.

   Any discharge of dredged and/or fill material authorized by the nationwide permits listed above, which would occur in the designated waterways or adjacent wetlands of the specified counties, requires notification to the appropriate Corps of Engineers field office, and written approval from that office prior to performing the work. We recommend that prospective permittees first contact the appropriate field office by telephone to determine if the notification procedures would apply. The notification must be in writing and include the following information (the standard Joint Permit Application may also be used):

   - **Name, address, and telephone number of the prospective permittee.**
   - **Location of the proposed project.**
   - **Vicinity map and project drawings on 8.5-inch by 11-inch paper (plan view, profile, & cross section).**
   - **Brief description of the proposed project and the project purpose.**
   - **Where required by the terms of the nationwide permit, a delineation of affected special aquatic sites, including wetlands.**

   When all required information is received by the appropriate field office, the Corps will notify the prospective permittee within 45 days whether the project can proceed under the NWP or whether an individual permit is required. If, after reviewing the notification, the District Engineer determines that the proposed activity would have more than minimal individual or cumulative adverse impacts on the aquatic environment or otherwise may be contrary to the public interest, then he will either condition the nationwide permit authorization to reduce or eliminate the adverse impacts, or notify the prospective permittee that the activity is not authorized by the nationwide permit and provide with instructions on how to seek authorization under an individual permit. If the permittee is not notified otherwise within the 45-day period the permittee may begin the activity.

10. **Conditions Pertaining to Countersinking of Pipes and Culverts in Nontidal Waters: This condition applies to NWP 12.**

NOTE: THE COUNTERSINKING REQUIREMENT DOES NOT APPLY IN TIDAL WATERS.

a. Following consultation with the Virginia Department of Game and Inland Fisheries (DGIF), the Norfolk District has determined that fish and other aquatic organisms are most likely present in any stream being crossed, in the absence of site-specific evidence to the contrary. Although permittees have the option of providing such evidence, extensive efforts to collect such information is not encouraged, since countersinking will in most cases be required except as outlined in the conditions below.

b. All pipes: All pipes and culverts placed in streams will be countersunk at both the inlet and outlet ends, unless indicated otherwise by the Norfolk District on a case-by-case basis (see below). Pipes that are 24" or less in diameter shall be countersunk 3" below the natural stream bottom. Pipes that are greater than 24" in diameter shall be countersunk 6" below the natural stream bottom. The countersinking requirement does not apply to bottomless pipes/culverts or pipe arches. All single pipes or culverts (with bottoms) shall be depressed (countersunk) below the natural streambed at both the inlet and outlet of the structure. In sets of multiple pipes or culverts (with bottoms) at least one pipe or culvert shall be depressed (countersunk) at both the inlet and outlet to convey low flows.

c. Exemption for extensions and certain maintenance: The requirement to countersink does not apply to extensions of existing pipes or culverts that are not countersunk, or to maintenance to pipes/culverts that does not involve replacing the pipe/culvert (such as repairing cracks, adding material to prevent/correct scour, etc.).

d. Floodplain pipes: The requirement to countersink does not apply to pipes or culverts that are being placed above ordinary high water, such as those placed to allow for floodplain flows. The placement of pipes above ordinary high water is not jurisdictional (provided no fill is discharged into wetlands).

e. Hydraulic opening: Pipes should be adequately sized to allow for the passage of ordinary high water *with the countersinking and invert restrictions taken into account*.

f. Pipes on bedrock: Different procedures will be followed for pipes or culverts to be placed on bedrock, depending on whether the work is for replacement of an existing pipe/culvert or a new pipe/culvert:

i. Replacement of an existing pipe/culvert: Countersinking is not required provided the elevations of the inlet and outlet ends of the replacement pipe/culvert are no higher above the stream bottom than those of the existing pipe/culvert. Documentation (photographic or other evidence) must be maintained in the permittee's records showing the bedrock condition and the existing inlet and outlet elevations. That documentation will be available to the Norfolk District upon request, but notification or coordination with the Norfolk District is not otherwise required.

ii. A pipe/culvert is being placed in a new location: If the prospective permittee determines that the bedrock prevents countersinking, they should evaluate the use of a bottomless pipe/culvert, bottomless utility vault, span (bridge) or other bottomless structure to cross the waterway, and also evaluate alternative locations for the new pipe/culvert that will allow for countersinking. If the prospective permittee determines that neither a bottomless structure nor an alternative location is practicable, then they must submit a Pre-Construction Notification to the Norfolk District in accordance with General Condition #27 of the Nationwide Permits. In addition to the information required by General Condition #27, the prospective permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. Options that must be considered include partial countersinking (such as less than 3" of countersinking, or countersinking of one end of the pipe), and constructing stone step pools, low rock weirs downstream, or other measures to provide for the movement of aquatic organisms. The PCN must also include photographs documenting site conditions. The prospective permittee may find it helpful to contact their regional fishery biologist for the Virginia Department of Game and Inland Fisheries (DGIF), for recommendations about the measures to be taken to allow for fish movements. When seeking advice from DGIF, the prospective permittee should provide the DGIF biologist with all available information such as location, flow rates, stream bottom features, description of proposed pipe(s), slopes, etc. Any recommendations from DGIF should be included in the PCN. The Norfolk District will notify the prospective permittee whether the proposed work qualifies for the nationwide permit within 45 days of receipt of a complete PCN. NOTE: Blasting of stream bottoms through the use of explosives is not acceptable as a means of providing for countersinking of pipes on bedrock.

g. Pipes on steep terrain: Pipes being placed on steep terrain (slope of 5% or greater) must be countersunk in accordance with the conditions above and will in most cases be non-reporting. It is recommended that on slopes greater than 5% the permittee install larger pipe than required for passage of ordinary high water in order to increase the likelihood that natural velocities can be maintained. There may be situations where countersinking both the inlet and outlet may result in a slope in the pipe that results in flow velocities that cause excessive scour at the outlet and/or prohibit some fish movement. This type of situation could occur on the side of a mountain where falls and drop pools occur along a stream. Should this be the case, or should the prospective permittee not want to countersink the pipe/culvert for other reasons, they must submit a Pre-Construction Notification to the Norfolk District in accordance with General Condition #27 of the Nationwide Permits. In addition to the information required by General Condition #27, the prospective permittee must provide documentation of measures evaluated to minimize disruption of the movement of aquatic life as well as documentation of the cost, engineering factors, and site conditions that prohibit countersinking the pipe/culvert. The prospective permittee should design the pipe to be placed at a slope as steep as stream characteristics allow, countersink the inlet 3-6", and implement measures to minimize any disruption of fish movement. These measures can include constructing a stone step/pool structure, preferably using river rock/native stone rather than riprap, constructing low rock weirs to create a pool or pools, or other structures to allow for fish movements in both directions. Stone structures should be designed with sufficient-sized stone to prevent erosion or washout and should include keying-in as appropriate. These structures should be designed both to allow for fish passage and to minimize scour at the outlet. The quantities of fill discharged below ordinary high water necessary to comply with these requirements (i.e., the cubic yards of stone, riprap or other fill placed below the plane of ordinary high water) must be included in project totals. The prospective permittee may find it helpful to contact their regional fishery

biologist for the Virginia Department of Game and Inland Fisheries (DGIF), for recommendations about the measures to be taken to allow for fish movements. When seeking advice from DGIF, the prospective permittee should provide the DGIF biologist with all available information such as location, flow rates, stream bottom features, description of proposed pipe(s), slopes, etc. Any recommendations from DGIF should be included in the PCN. The Norfolk District will notify the prospective permittee whether the proposed work qualifies for the nationwide permit within 45 days of receipt of a complete PCN.

h. Problems encountered during construction: When a pipe/culvert is being replaced, and the design calls for countersinking at both ends of the pipe/culvert, and during construction it is found that the streambed/banks are on bedrock, then the permittee must stop work and contact the Norfolk District (contact by telephone and/or email is acceptable). The permittee must provide the Norfolk District with specific information concerning site conditions and limitations on countersinking. The Norfolk District will work with the permittee to determine an acceptable plan, taking into consideration the information provided by the permittee, but the permittee should recognize that the Norfolk District could determine that the work will not qualify for a nationwide permit.

i. Emergency pipe replacements: In the case of an emergency situation, such as when a pipe/culvert washes out during a flood, a permittee is encouraged to countersink the replacement pipe at the time of replacement, in accordance with the conditions above. However, if conditions or timeframes do not allow for countersinking, then the pipe can be replaced as it was before the washout, but the permittee will have to come back and replace the pipe/culvert and countersink it in accordance with the guidance above. In other words, the replacement of the washed out pipe is viewed as a temporary repair, and a countersunk replacement should be made at the earliest possible date. The Norfolk District must be notified of all pipes/culverts that are replaced without countersinking at the time that it occurs, even if it is an otherwise non-reporting activity, and must provide the permittee's planned schedule for installing a countersunk replacement (it is acceptable to submit such notification by email). The permittee should anticipate whether bedrock or steep terrain will limit countersinking, and if so, should follow the procedures outlined in (f) and/or (g) above.

GENERAL CONDITIONS:

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as appropriate, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer. Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP.

1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. Culverts placed in streams must be installed to maintain low flow conditions.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety.

15. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency in the area (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

16. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

17. Endangered Species.

(a) No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical

habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees shall notify the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that may be affected by the proposed work or that utilize the designated critical habitat that may be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the U.S. FWS or the NMFS, both lethal and non-lethal "takes" of protected species are in violation of the ESA. Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their world wide Web pages at http://www.fws.gov/ and http://www.noaa.gov/fisheries.html respectively.

18. Historic Properties.

(a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties which the activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, explaining the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

19. Designated Critical Resource Waters. Critical resource waters include, NOAA-designated marine sanctuaries, National Estuarine Research Reserves, state natural heritage sites, and outstanding national resource waters or other waters officially designated by a state as having particular environmental or ecological significance and identified by the district engineer after notice and opportunity for public comment. The district engineer may also designate additional critical resource waters after notice and opportunity for comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, and 50 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 27, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

20. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10 acre and require pre-construction notification, unless the district engineer determines in writing that some other form of mitigation would be more environmentally appropriate and provides a project-specific waiver of this requirement. For wetland losses of 1/10 acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream restoration, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2 acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2 acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only

compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee arrangements or separate activity-specific compensatory mitigation. In all cases, the mitigation provisions will specify the party responsible for accomplishing and/or complying with the mitigation plan.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

21. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

22. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

23. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

24. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

25. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

26. Compliance Certification. Each permittee who received an NWP verification from the Corps must submit a signed certification regarding the completed work and any required mitigation. The certification form must be forwarded by the Corps with the NWP verification letter and will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general or specific conditions;

(b) A statement that any required mitigation was completed in accordance with the permit conditions; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

27. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, as a general rule, will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity:

(1) Until notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) If 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 17 that listed species or critical habitat might affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 18 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) is completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee cannot begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed project;

(3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided result in a quicker decision.);

(4) The PCN must include a delineation of special aquatic sites and other waters of the United States on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters of the United States, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, where appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10 acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP 48 activities requiring pre-construction notification and for other NWP activities requiring pre-construction notification to the district engineer that result in the loss of greater than 1/2-acre of waters of the United States, the district engineer will immediately provide (e.g., via facsimile transmission, overnight mail, or other expeditious manner) a copy of the PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will then have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame, but will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps multiple copies of pre-construction notifications to expedite agency coordination.

(5) For NWP 48 activities that require reporting, the district engineer will provide a copy of each report within 10 calendar days of receipt to the appropriate regional office of the NMFS.

(e) District Engineer's Decision: In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If the proposed activity requires a PCN and will result in a loss of greater than 1/10 acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for projects with smaller impacts. The district engineer will consider any proposed compensatory mitigation the applicant has included in the proposal in determining whether the net adverse environmental effects to the aquatic environment of the proposed work are minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse effects on the aquatic environment are minimal, after considering mitigation, the district engineer will notify the permittee and include any conditions the district engineer deems necessary. The district engineer must approve any compensatory mitigation proposal before the permittee commences work. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure no more than minimal adverse effects on the aquatic environment. If the net adverse effects of the project on the aquatic environment (after consideration of the compensatory mitigation proposal) are determined by the district engineer to be minimal, the district engineer will provide a timely written response to the applicant. The response will state that the project can proceed under the terms and conditions of the NWP.

If the district engineer determines that the adverse effects of the proposed work are more than minimal, then the district engineer will notify the applicant either: (1) That the project does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (2) that the project is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level; or (3) that the project is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse effects occur to the aquatic environment, the activity will be authorized within the 45-day PCN period. The authorization will include the necessary conceptual or specific mitigation or a requirement that the applicant submit a mitigation plan that would reduce the adverse effects on the aquatic environment to the minimal level. When mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan.

28. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

D. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project.

Section 401 Water Quality Certification (4/20/07):

The State Water Control Board has provided conditional §401 Water Quality Certification for the following Nationwide Permits, as meeting the requirements of the Virginia Water Protection Permit Regulation, which serves as the Commonwealth's §401 Water Quality Certification provided that any compensatory mitigation meets the requirements in the Code of Virginia, Section 62.1-44.15:5.E and as detailed below:

NWP 12: Utility Line Activities, provided that the activities are not associated with intake structures or do not transport non-potable raw surface water.

The Commonwealth requests that all pre-construction notifications for any activities that fall into the excepted category be forwarded to the Department of Environmental Quality in order to accomplish their goal of individual review of certain activities.

Coastal Zone Management Consistency Determination (5/7/07):

The Commonwealth of Virginia's Department of Environmental Quality (DEQ) has determined that the 2007 Nationwide Permits are consistent with the Virginia Coastal Resources Management Program, provided that the Corps and NWP holders comply with all applicable requirements and with the recommendations found in their letter of May 7, 2007. The applicable requirements include, but are not limited to, the following:

- The Section 401 (Clean Water Act) certification provided by DEQ's Division of Water Quality, Office of Wetlands and Water Protection on behalf of the State Water Control Board on April 20, 2007. (Excludes NWPs 16 and 17)
- The permitting requirements for encroachments on subaqueous lands and tidal wetlands administered by the Marine Resources Commission pursuant to *Virginia Code* sections 28.2-1200 et seq. and 28.2-1300 et seq.
- The land use and development performance criteria in the Chesapeake Bay Designation and Management Regulations (9 VAC 10-20-110 through 150) administered by the Department of Conservation and Recreation's Division of Chesapeake Bay Local Assistance pursuant to the Chesapeake Bay Preservation Act (*Virginia Code* sections 10.2-2100 et seq.).

2007 NATIONWIDE PERMITS
REGIONAL CONDITIONS
STATE OF NORTH DAKOTA
OMAHA DISTRICT – CORPS OF ENGINEERS

The U.S. Army Corps of Engineers has adopted the following regional conditions for activities authorized by nationwide permits within the State of North Dakota. However, the pre-construction notification requirements defined below are not applicable to Nationwide Permit 47.

1. Wetlands Classified as Fens

All Nationwide Permits, with the exception of 3, 5, 20, 32, 38 and 45, are revoked for use in fens in North Dakota. For nationwide permits 3, 5, 20, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition 27 (Notification) prior to initiating any regulated activity impacting fens in North Dakota.

Fens are wetlands that develop where a relatively constant supply of ground water to the plant rooting zone maintains saturated conditions most of the time. The water chemistry of fens reflects the mineralogy of the surrounding and underlying soils and geological materials. The substrate is carbon-accumulating, ranging from muck to peat to carbonates. These wetlands may be acidic to alkaline, have pH ranging from 3.5 to 8.4 and support a range of vegetation types. Fens may occur on slopes, in depressions, or on flats (i.e., in different hydrogeomorphic classes; after: Brinson 1993).

2. Waters Adjacent to Natural Springs

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in North Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

3. Missouri River, including Lake Sakakawea and Lake Oahe within the State of North Dakota

For all Nationwide Permits permittees must notify the Corps in accordance with General Condition No. 27 (Notification) prior to initiating any regulated activity in the Missouri River, including Lake Sakakawea and Lake Oahe, within the State of North Dakota.

4. Historic Properties

That the permittee and/or the permittee's contractor, or any of the employees, subcontractors or other persons working in the performance of a contract(s) to complete the work authorized herein, shall cease work and report the discovery of any previously unknown historic or archeological remains to the North Dakota Regulatory Office. Notification shall be by telephone or fax within 24 hours of the discovery and in writing within 48 hours. Work shall not resume until the permittee is notified by the North Dakota Regulatory Office.

5. Spawning Condition

That no regulated activity within waters of the United States listed as Class III or higher on the 1978 Stream Evaluation Map for the State of North Dakota or on the North Dakota Game and Fish Department's website as a North Dakota Public Fishing Water shall occur between 15 April and 1 June. No regulated activity within the Red River of the North shall occur between 15 April and 1 July.

Additional Information

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, organic debris, some building waste, and materials excessive in fines are not suitable material.

Specific verbiage on prohibited materials and the 1978 Stream Evaluation Map for the State of North Dakota can be accessed on the North Dakota Regulatory Office's website at:
https://www.nwo.usace.army.mil/html/od-rnd/ndhome.htm

Appendix F

Exclusion and Avoidance Area Maps

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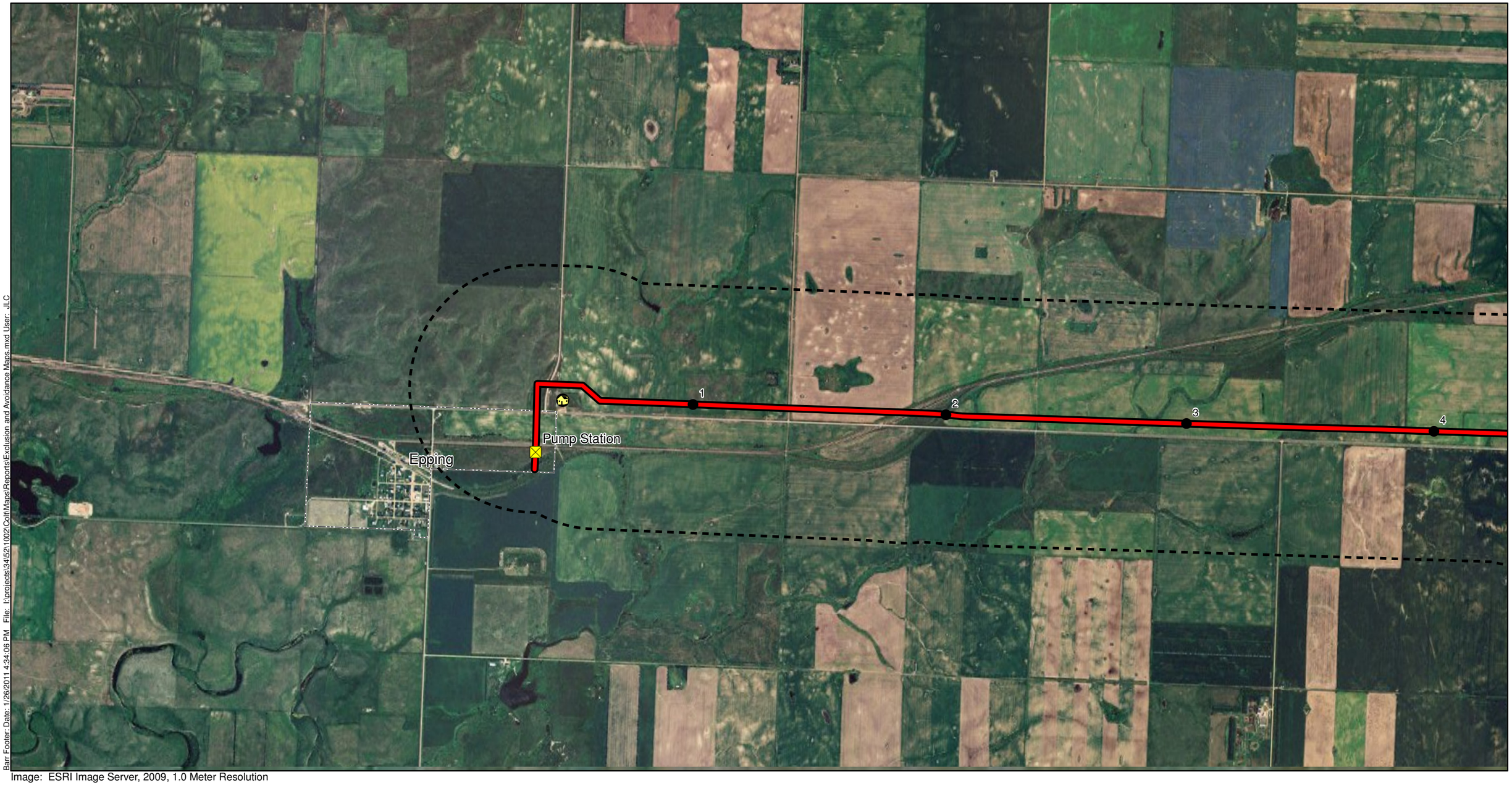
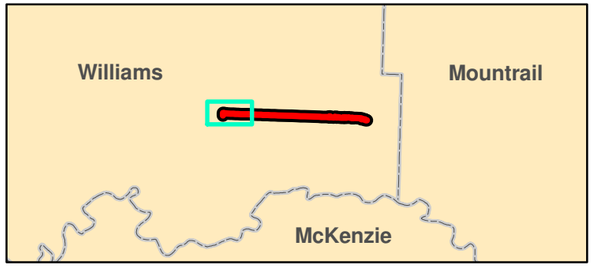


Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Milepost
- Block Valve
- Pump Station
- Businesses
- Cemetery
- Residence
- Cultural Sites
- 1-Mile Evaluation Corridor
- Municipal Boundaries

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

BARR

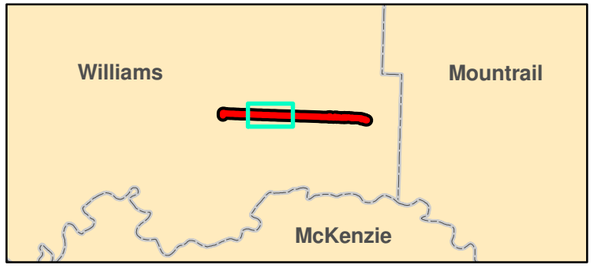
Appendix F - Sheet 01 of 04

EXCLUSION AND AVOIDANCE MAPS
COLT Connector Pipeline
Williams County, North Dakota

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Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Milepost
- Block Valve
- Pump Station
- Businesses
- Cemetery
- Residence
- Cultural Sites
- 1-Mile Evaluation Corridor
- Municipal Boundaries

N

1 inch = 2,000 feet

0 0.25 0.5 1

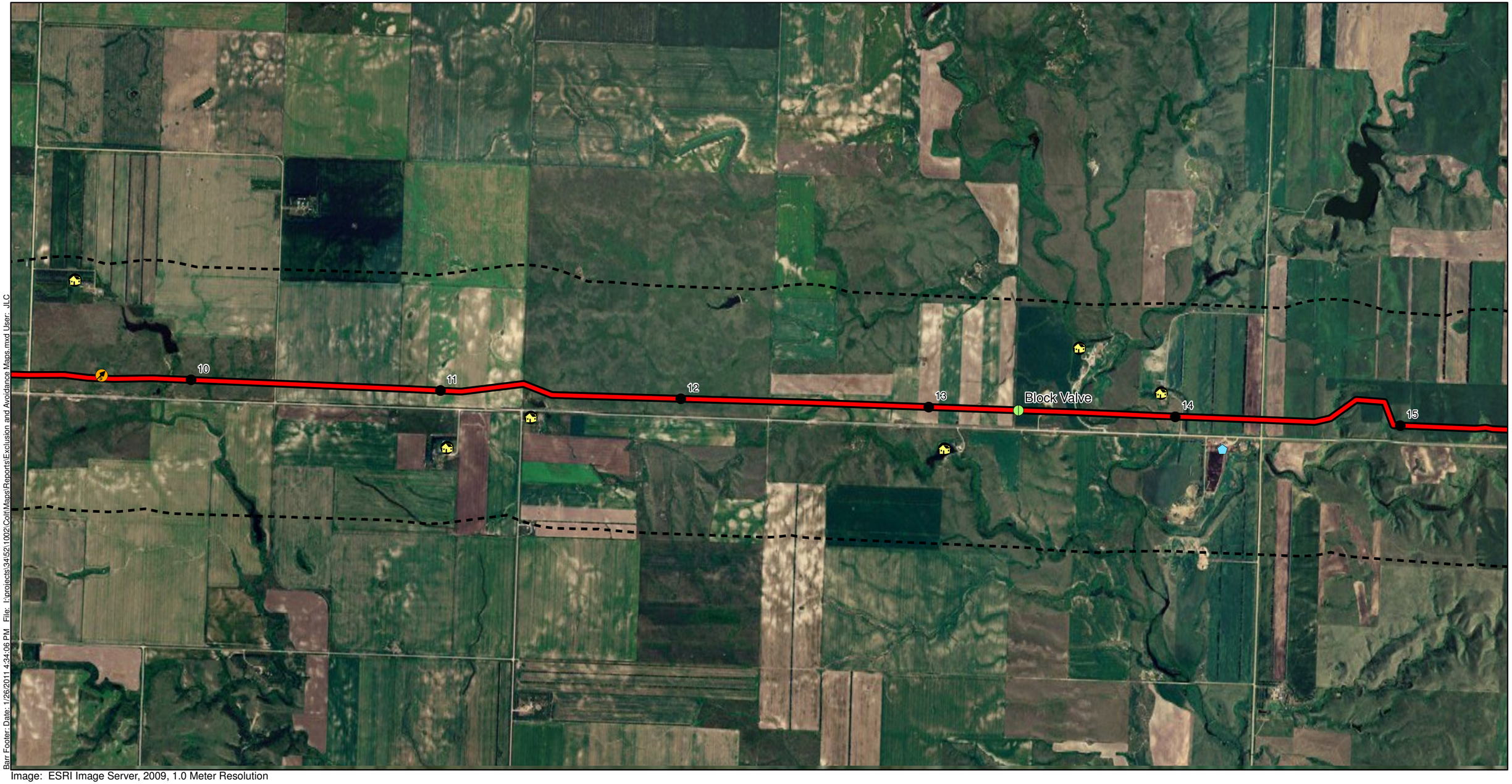
Miles

Rangeland Energy, LLC

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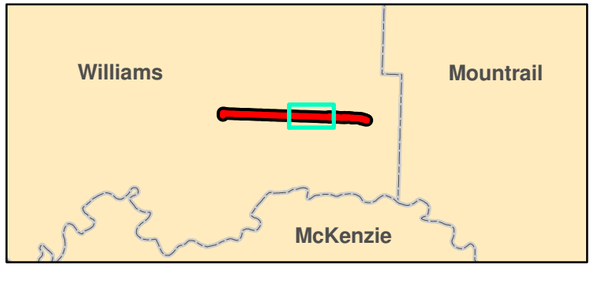
Appendix F - Sheet 02 of 04

EXCLUSION AND AVOIDANCE MAPS
COLT Connector Pipeline
Williams County, North Dakota



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- COLT Connector Pipeline
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- Block Valve
- Pump Station
- Businesses
- Cemetery
- Residence
- Cultural Sites
- 1-Mile Evaluation Corridor
- Municipal Boundaries

N

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

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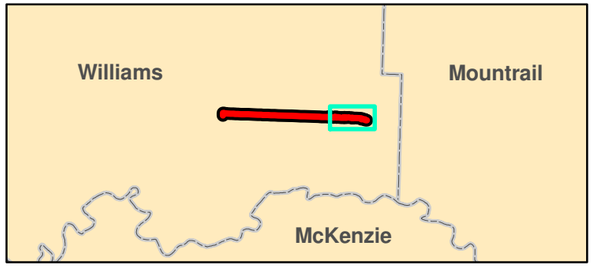
Appendix F - Sheet 03 of 04

EXCLUSION AND AVOIDANCE MAPS
COLT Connector Pipeline
Williams County, North Dakota

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15 16 17 18 19 20

Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Milepost
- Block Valve
- Pump Station
- Businesses
- Cemetery
- Residence
- Cultural Sites
- 1-Mile Evaluation Corridor
- Municipal Boundaries

N

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

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Appendix F - Sheet 04 of 04

EXCLUSION AND AVOIDANCE MAPS
COLT Connector Pipeline
Williams County, North Dakota

Appendix G

Selection Criteria Maps (Land Use)

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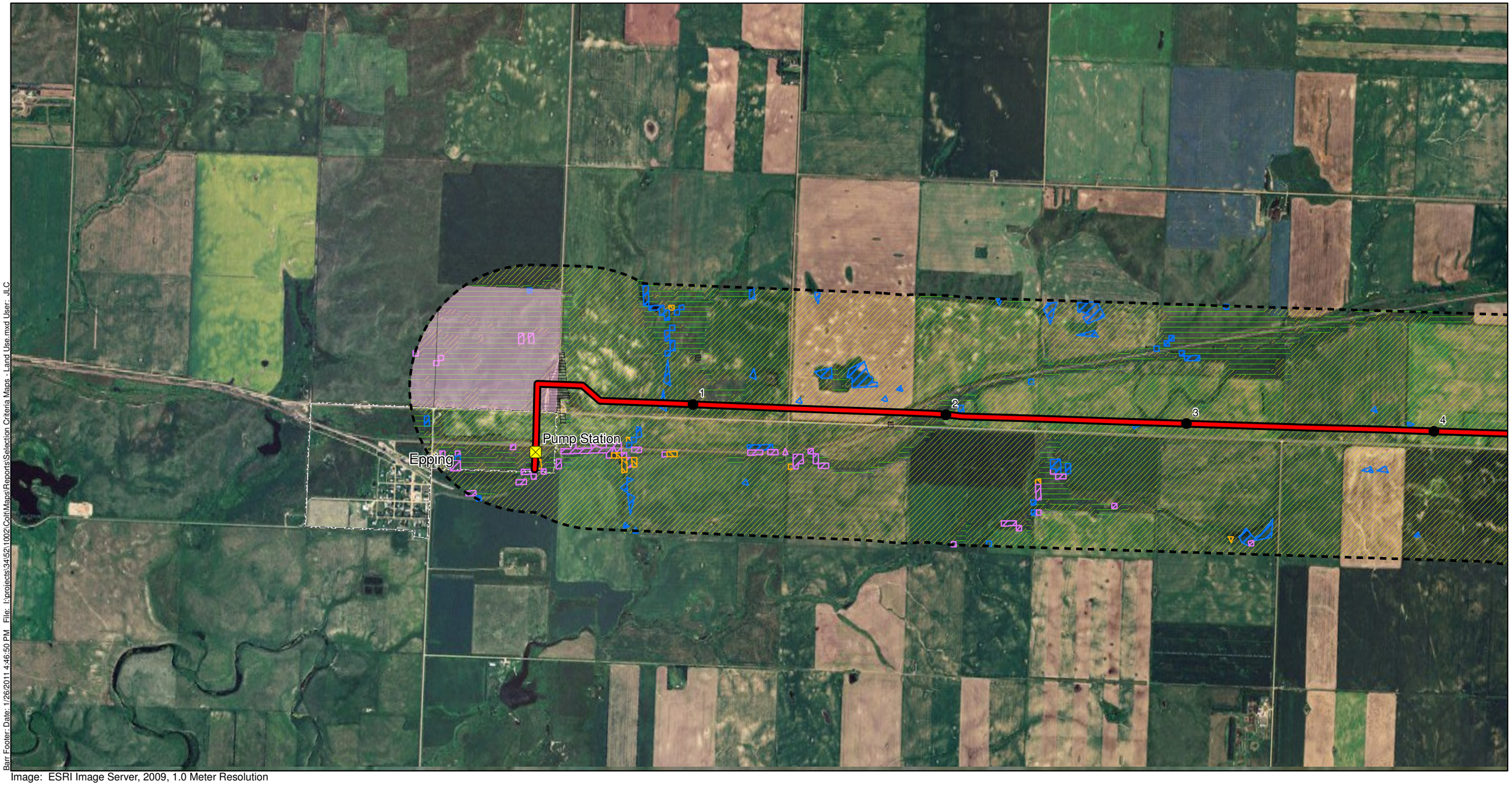
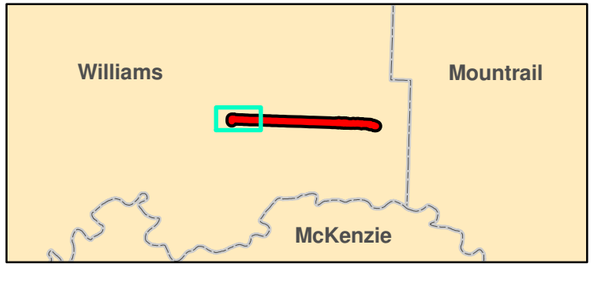


Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Milepost
- Block Valve
- Pump Station
- 1-Mile Evaluation Corridor
- School Trust Land
- Barren
- Cropland
- Grassland
- Shrubland
- Wetland/Water
- Woodland

1 inch = 2,000 feet

0 0.25 0.5 1

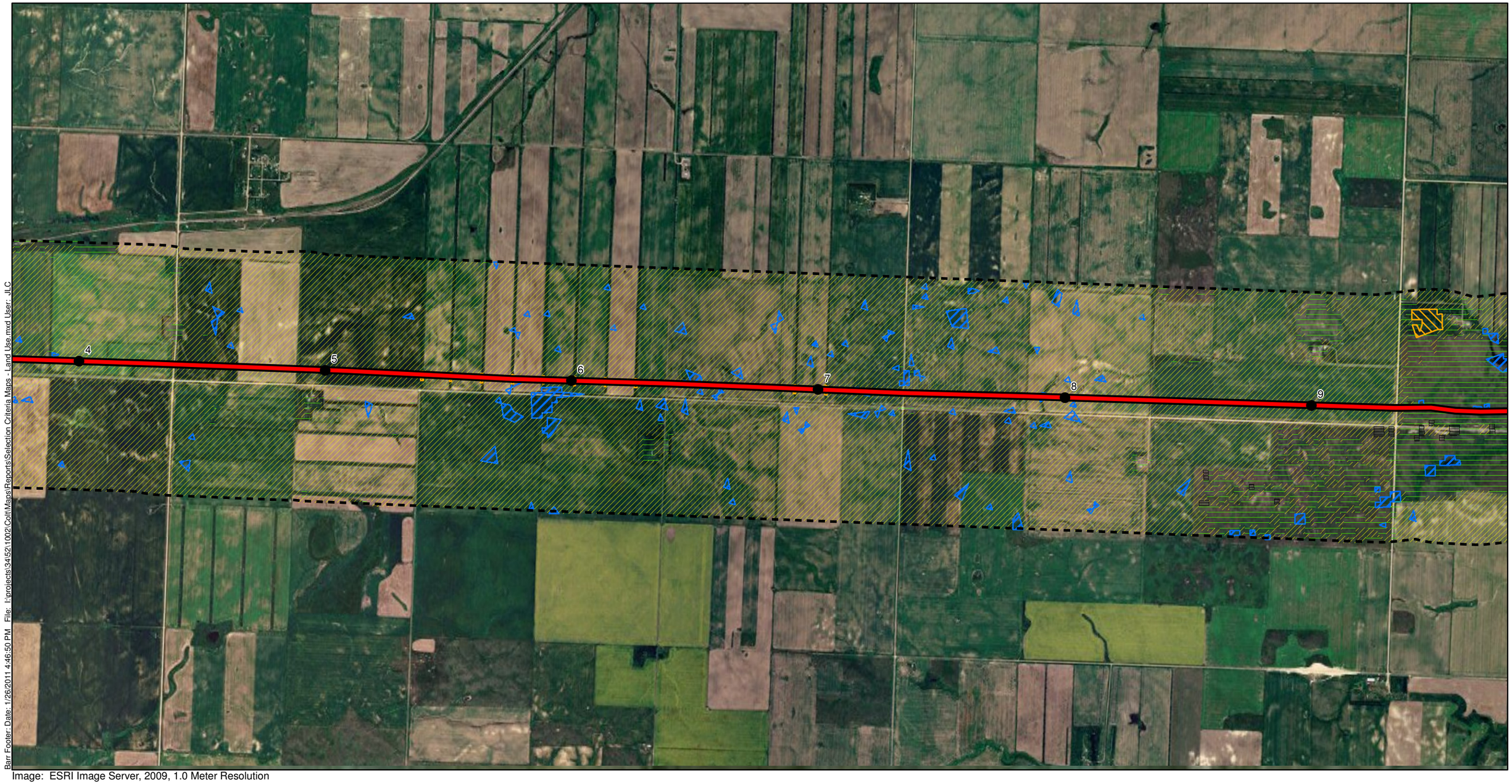
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Rangeland Energy, LLC

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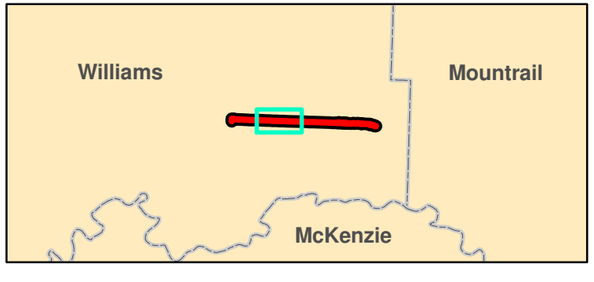
Appendix G -Sheet 01 of 04

SELECTION CRITERIA MAPS
(LAND USE)
COLT Connector Pipeline
Williams County, North Dakota



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COLT Connector Pipeline
Milepost
Block Valve
Pump Station
1-Mile Evaluation Corridor
School Trust Land
Barren
Cropland
Grassland
Shrubland
Wetland/Water
Woodland

N

1 inch = 2,000 feet

0 0.25 0.5 1
Miles

Rangeland Energy, LLC
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Appendix G -Sheet 02 of 04
SELECTION CRITERIA MAPS
(LAND USE)
COLT Connector Pipeline
Williams County, North Dakota

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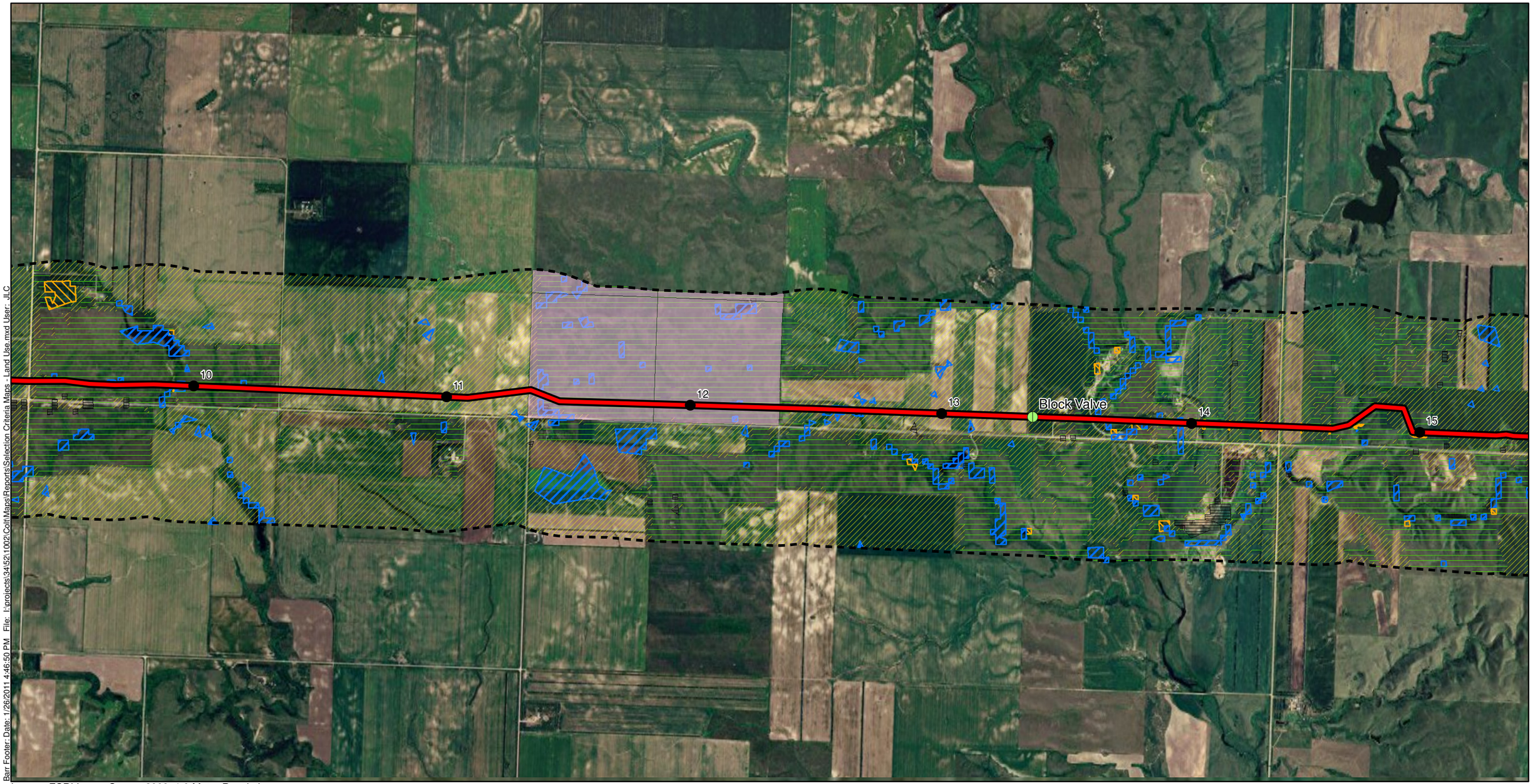
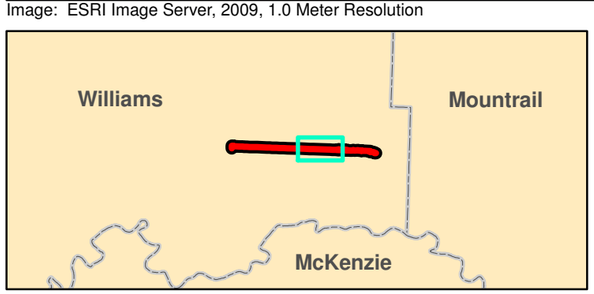


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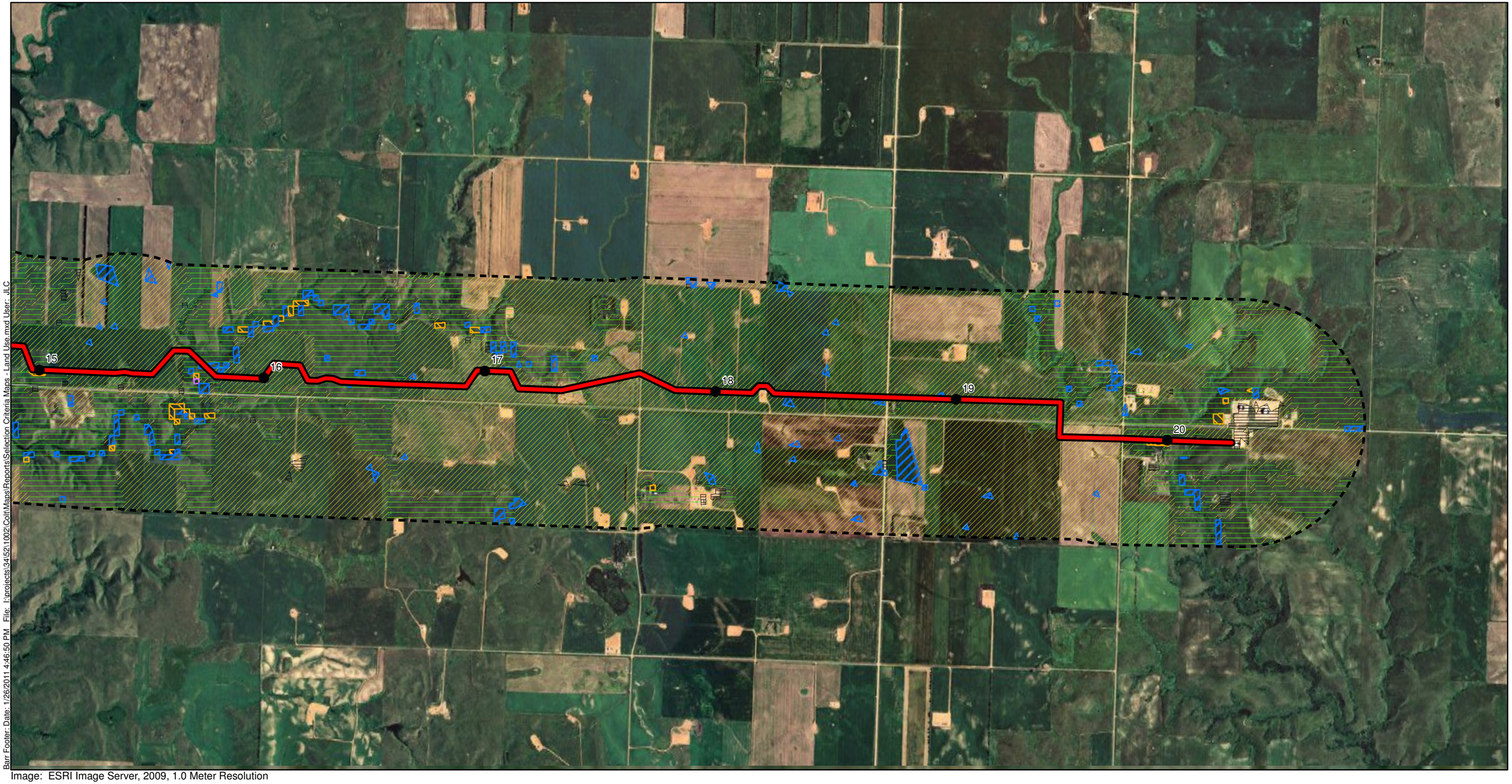
COLT Connector Pipeline
Milepost
Block Valve
Pump Station
1-Mile Evaluation Corridor
School Trust Land
Barren
Cropland
Grassland
Shrubland
Wetland/Water
Woodland

1 inch = 2,000 feet

0 0.25 0.5 1
Miles

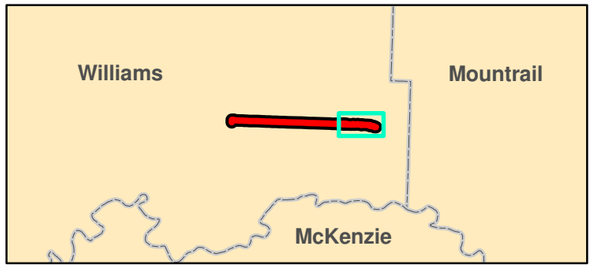
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Appendix G -Sheet 03 of 04
SELECTION CRITERIA MAPS
(LAND USE)
COLT Connector Pipeline
Williams County, North Dakota



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COLT Connector Pipeline
Milepost
Block Valve
Pump Station
1-Mile Evaluation Corridor
School Trust Land
Barren
Cropland
Grassland
Shrubland
Wetland/Water
Woodland

N

1 inch = 2,000 feet

0 0.25 0.5 1
Miles

Rangeland Energy, LLC
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Appendix G -Sheet 04 of 04
SELECTION CRITERIA MAPS
(LAND USE)
COLT Connector Pipeline
Williams County, North Dakota

Appendix H

Selection Criteria Maps (Other)

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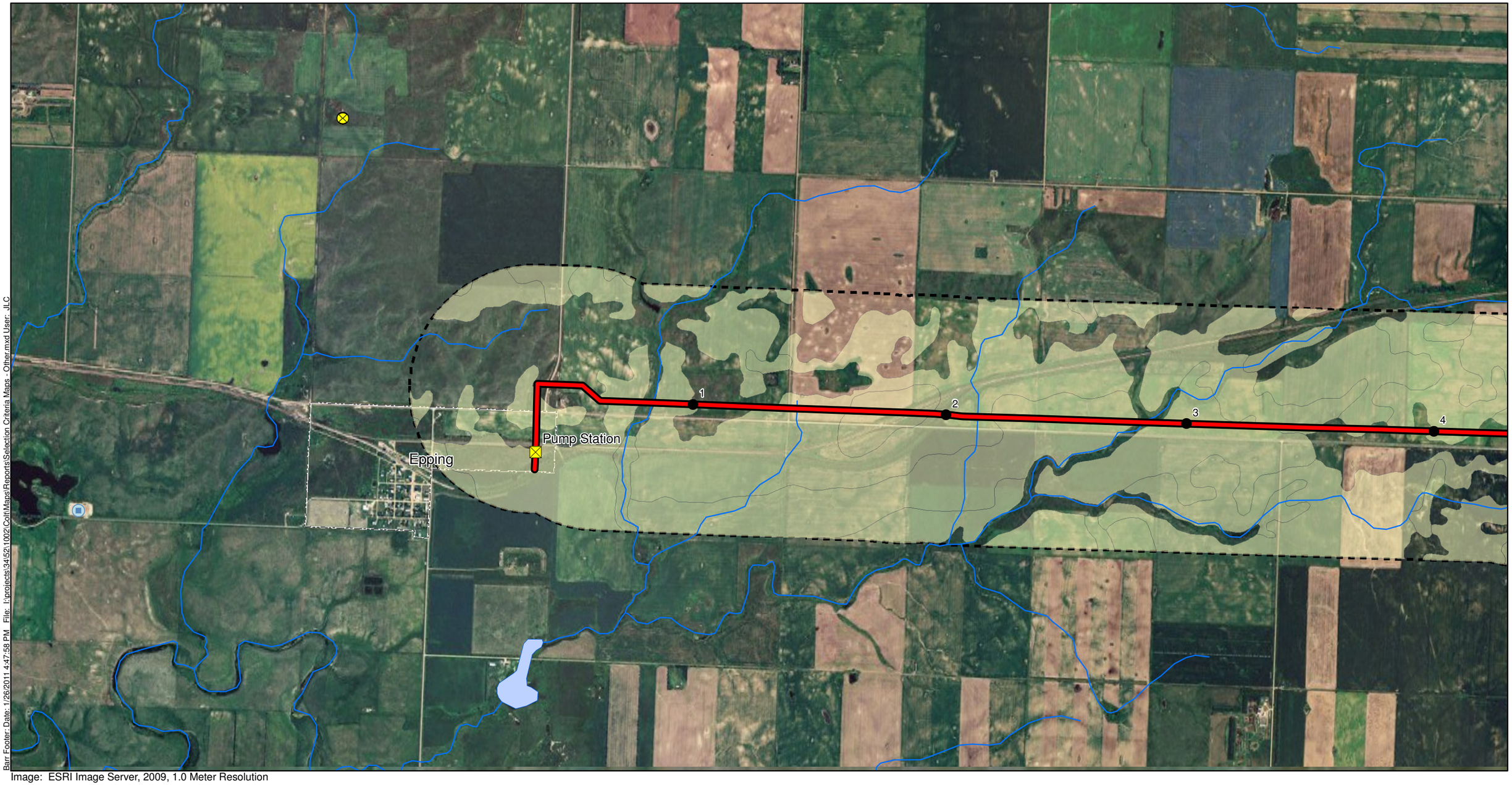
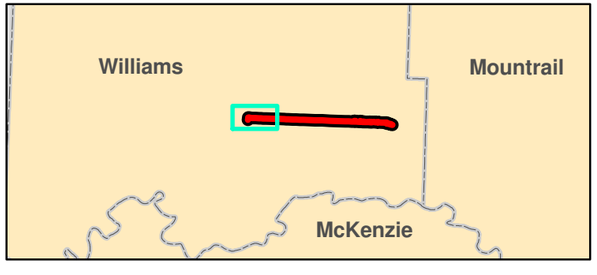


Image: ESRI Image Server, 2009, 1.0 Meter Resolution



- COLT Connector Pipeline
- Milepost
- Block Valve
- Pump Station
- Oil or Gas Well
- Gravel Pit
- 1-Mile Evaluation Corridor
- Aquifers
- Prime and Important Farmland
- Waterbodies
- Watercourses

1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

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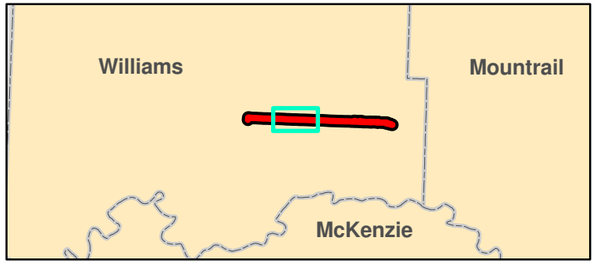
Appendix H - Sheet 01 of 04

SELECTION CRITERIA MAPS (OTHER)
COLT Connector Pipeline
Williams County, North Dakota

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- Waterbodies
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1 inch = 2,000 feet

0 0.25 0.5 1

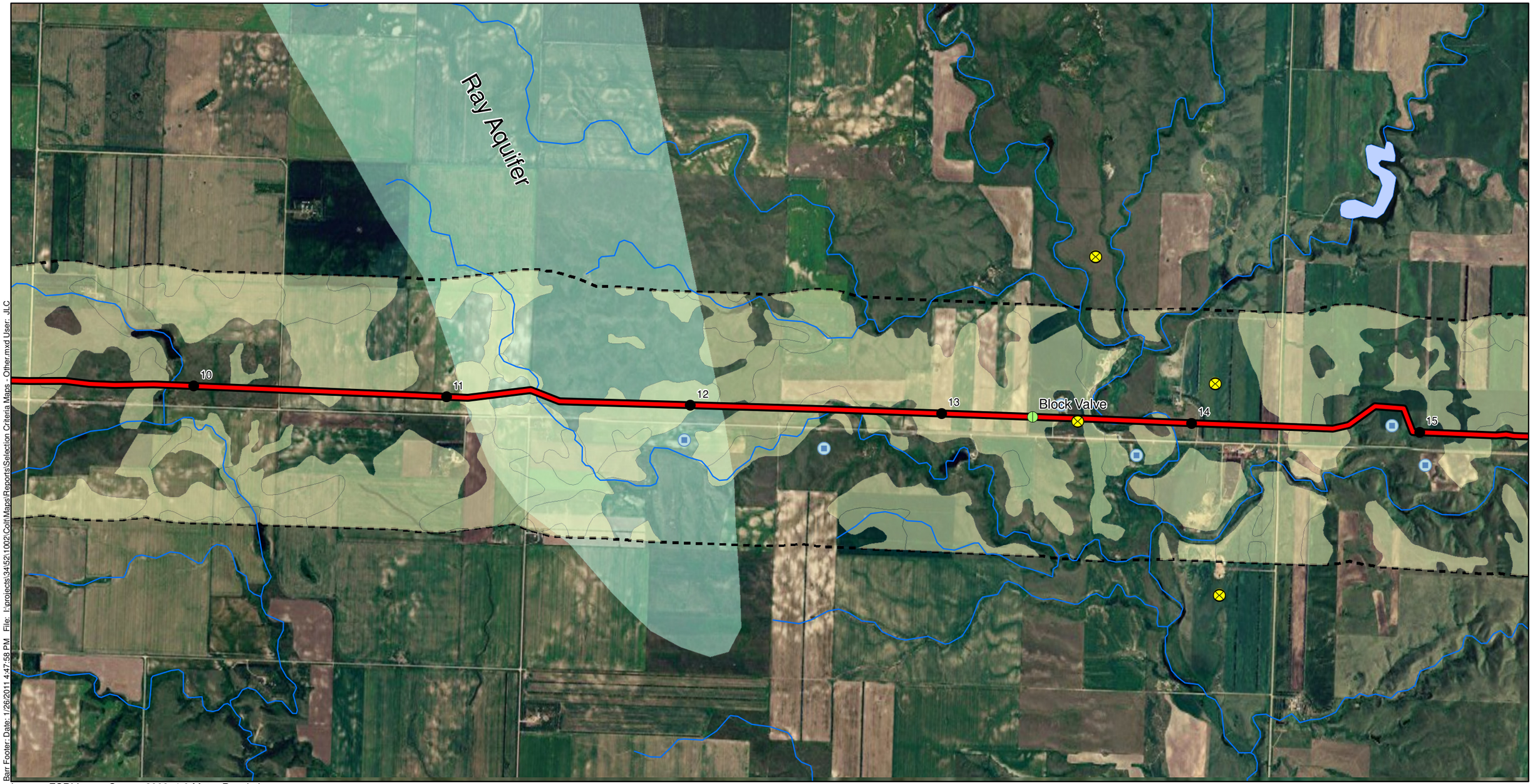
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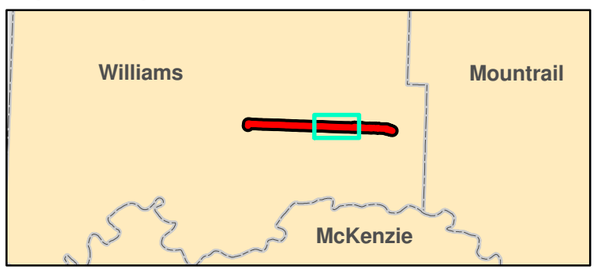
Appendix H - Sheet 02 of 04

SELECTION CRITERIA MAPS (OTHER)
COLT Connector Pipeline
Williams County, North Dakota



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Image: ESRI Image Server, 2009, 1.0 Meter Resolution



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1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

BARR

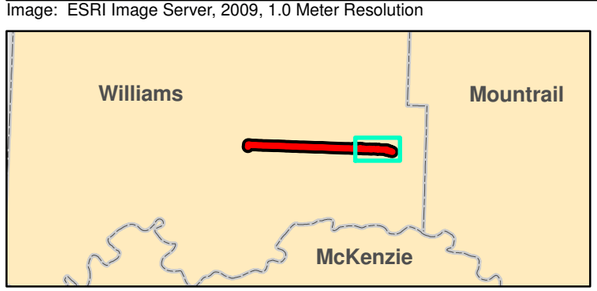
Appendix H - Sheet 03 of 04

SELECTION CRITERIA MAPS (OTHER)
COLT Connector Pipeline
Williams County, North Dakota

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Image: ESRI Image Server, 2009, 1.0 Meter Resolution



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1 inch = 2,000 feet

0 0.25 0.5 1

Miles

Rangeland Energy, LLC

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Appendix H - Sheet 04 of 04

SELECTION CRITERIA MAPS (OTHER)
COLT Connector Pipeline
Williams County, North Dakota

Appendix I

Unanticipated Discovery Plan (Pending SHPO Approval)