

ND PSC Case No. PU-10-554

**6-inch Natural Gas Liquids Pipeline
Pipeline Route Application**

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INTRODUCTION

Hiland Operating, LLC (Hiland Operating), submits this Route Permit Application to the North Dakota Public Service Commission (Commission) for an approximately 14.1 mile-long, 6-inch natural gas liquids (NGLs) pipeline project to be located in McKenzie County, North Dakota (the Project). The Project will be located approximately nine miles northeast of Cartwright, North Dakota and will transport NGLs from the Hiland Operating Watford City natural gas processing plant (Hiland Operating Plant) to Hiland Operating's rail loading facility. Hiland Operating's rail loading facility (Hiland Operating Rail Terminal) located next to the Yellowstone Valley Railroad (YSVR) line. The eastern 5.1 miles of the Project's route is within the corridor designated by the Commission in December 2010 in connection with the siting of Hiland Operating's 8-inch natural gas pipeline project (see Corridor Compatibility Number 116 and Route Permit Number 126 issued in Case No. PU-10-555).

In accordance with Chapter 49-22 of the North Dakota Century Code, Section 69-06-08-02 of the North Dakota Administrative Code, and the Commission's Energy Conversion and Transmission Facility Siting Guidelines, Hiland Operating provides the following information to support its request for a Route Permit for the Project.

SECTION A DESCRIPTION OF PROPOSED FACILITY

A.1 TYPE OF FACILITY

The Project will consist of an underground pipeline that will transport NGLs. The line will utilize 6-inch steel pipe. The 14.1-mile pipeline will originate at the Hiland Operating Plant 7 miles northeast of Cartwright, North Dakota, and will terminate at the Hiland Operating Rail Terminal, approximately 5 miles north and 8 miles west of Cartwright, North Dakota. The Project will be located completely within McKenzie County, North Dakota. Figure 3.A.1 shows the location of the Project area.

Surface facilities installed will be limited to pipeline markers, rectifiers, a "pig" launcher and receiver and block valves. Some small fenced-in enclosures to house associated power and control systems may be installed to allow valves to be operated remotely.

Upon completion, the Project will enable transportation of NGLs produced in northwestern North Dakota to the various delivery areas served by YSVR. The Project will provide capacity to transport increased production of processed NGLs from the Bakken and Three Forks formations.

The estimated cost of the Project is \$4 million.

A.2 PRODUCT

The Project will transport mixed NGLs (i.e., propane, butanes, natural gasolines).

A.3 SIZE AND DESIGN

The proposed Project requires the installation of a 6-inch nominal diameter pipeline with a nominal wall thickness of 0.188 inches denoted as American Petroleum Institute (API) Code 5LX

specification X52/X42 pipeline pipe. The maximum allowable operating pressure (MAOP) will be 740 pounds of pressure per square inch gauge (psig). The valves to be installed will be 6-inch ANSI 300, flange end by flange end, full port, rising stem gate valves. These valves will be manufactured in accordance with API Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." The MAOP of the valve will be 740 psig.

The steel pipeline utilized for the Project will meet United States Department of Transportation (US DOT) regulations, specifically the design criteria outlined in 49 CFR § 195.100. The Project will be constructed per 49 CFR § 195.200, and operated and maintained per 49 CFR § 195.400.

A.4 TIME SCHEDULE

Hiland Operating proposes to develop the proposed Project on the following time schedule:

A.4 (a) Certificate of Corridor Compatibility

The Certificate of Corridor Compatibility Application is being submitted in July 2011 as part of this consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (b) Route Application

The Route Permit Application is being submitted in July 2011 as part of this consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (c) ROW Acquisition Date

Hiland Operating plans to have ROW acquisition completed by August 1, 2011.

A.4 (d) Issuance of Certificate of Corridor Compatibility and Route Permit

A Certificate of Corridor Compatibility and a Route Permit for the proposed Project are expected to be issued on or before August 31, 2011.

A.4 (e) Construction Start Date

Hiland Operating plans to begin construction of the Project as soon as possible. Construction in the third quarter 2011 would allow the proposed Project to be operational in the fourth quarter of 2011.

A.4 (f) Construction Complete

The estimated Project construction completion date is on or before October 31, 2011.

A.4 (g) Test Operations

The estimated test operations date is on or before November 7, 2011.

A.4 (h) In-Service Date

The estimated in-service date for the Project is on or before November 15, 2011.

Hiland Operating, LLC
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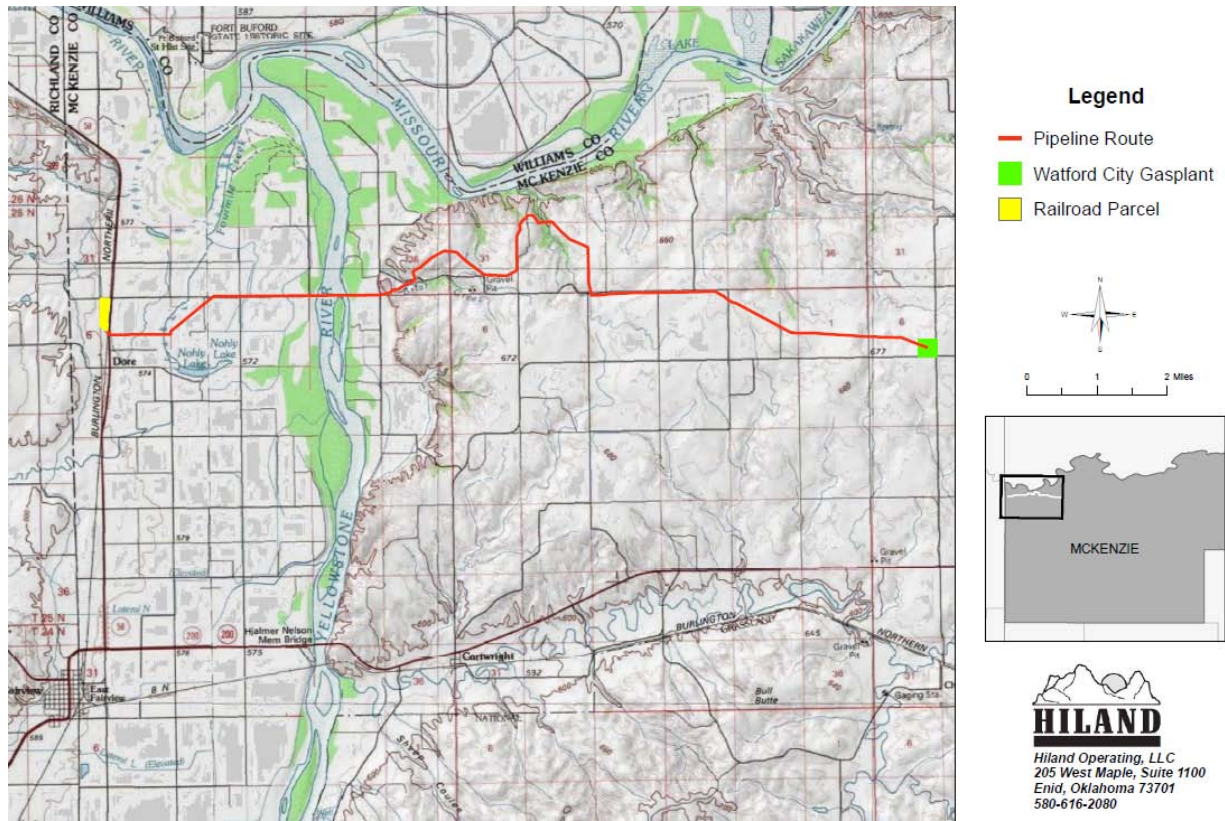


FIGURE 3.A.1 – Project Area Location Map

SECTION B **LOCATION**

B.1 HILAND OPERATING’S POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

Hiland Operating works to protect the environment, home to its employees and customers. Protection of the environment is an integral element of Hiland Operating’s enterprises. Environmental protection efforts will span every phase of the Project, from planning through construction, restoration, and into full operation.

B.1 (a) **Construction**

The Project involves laying a 6-inch steel pipeline within a route approximately 14.1 miles long. Approximately 5.1 miles of the Project route will be installed within the right-of-way (ROW) utilized by Hiland Operating for its existing 8-inch natural gas pipeline, which was placed within the corridor designated by the Commission for that project in December 2010 (see Case No. PU-10-555). Approximately 9.0 miles of the route will be in a newly acquired ROW located within a new corridor. The entire project is located within the boundaries of McKenzie County, North Dakota. Construction of the Project will result in temporary short-term impacts, but is not expected to result in significant long-term change to the environment.

The construction ROW will generally be 125 feet wide to allow adequate room for topsoil separation, work equipment and pipe stringing. This ROW will consist of both a permanent easement of 100 feet and a temporary additional workspace of 25 feet utilized only during construction to accommodate material staging areas and temporary access roads. The ROW will be wide enough to provide areas for prefabrication of a section of pipeline and storage of topsoil/subsoil material. To support construction activities, Hiland Operating will also temporarily use property at the Hiland Operating Plant as a contractor staging and pipe storage area. Hiland Operating will use existing public roads to access the construction ROW, and does not expect to modify roads or create new permanent access roads. Hiland Operating has acquired or will acquire 100-foot-wide permanent easements for this Project and potential future liquid pipeline(s).

Planning, design, construction, and restoration will incorporate the equipment and measures discussed in Section B.6. Environmental monitoring, in the form of ongoing environmental inspection, will be conducted during and following construction. Environmental inspectors will monitor for compliance with required environmental protection measures, permit conditions, and specifications, and provide ongoing oversight for day-to-day issues that may arise. The environmental inspectors will be well-versed in the implementation of environmental best management practices during construction. Contract specifications will incorporate environmental protection and mitigation measures, and contractors will be expected to implement these measures in the field. Contractor training and project orientation will also be provided by Hiland Operating.

The proposed Project is located on private land and landowner concerns will be addressed during all phases of construction, including final restoration. Land agents assigned to the Project will work closely with landowners and be responsive to issues that may arise during the course of the Project to the extent reasonably practicable. Hiland Operating has either obtained or is in the process of finalizing easement agreements with all landowners along the proposed route.

Environmental data collected to date includes information on soils, land use, wetland and waterbody crossings, protected species, and cultural resources. Hiland Operating will continue to work with appropriate regulatory agencies and will continue to gather comprehensive information during the permitting process.

B.1 (b) Ongoing Pipeline Operation

Hiland Operating has a continuing commitment to conduct its operations in an environmentally responsible manner. Substantial, continual effort is placed on pipeline integrity, operational safeguards, emergency response, and landowner relationships, all of which reduce the impact of the Project on the environment. Hiland Operating supplements the support of its existing internal environmental staff with engineering and environmental consultants as necessary to ensure compliance with regulations and applicable company policy. Additional information regarding operations and safety is provided in Section B.9 (c).

B.1 (c) Energy Conservation Considerations

The Project will improve transportation efficiency by eliminating the need for up to 20 cargo tank truck round trips daily. Beyond the direct energy benefit of using an efficient mode of transportation (i.e., a pipeline), energy conservation is a major concern for Hiland Operating. Energy/power costs represent the largest single recurring expense in pipeline operation. Attention is continually being directed toward energy conservation. Hiland Operating's energy conservation goal is to minimize power/energy unit costs through the implementation of internal programs directed at continuous improvement of energy utilization efficiency.

Hiland Operating control operators are trained in applied hydraulics and pipeline control through the use of a computerized pipeline control simulation system. They are trained to operate the pipeline at a natural flow rate using efficient combinations of pumps, thereby minimizing energy consumption. Operators have the capability to start and stop pumps and monitor pipeline operating conditions to assist in achieving an energy efficient operation.

B.2 DISCUSS THE FACTORS LISTED IN SECTION 49-22-09 OF THE NORTH DAKOTA CENTURY CODE TO AID THE COMMISSION IN ITS EVALUATION OF THE PROPOSED PROJECT ROUTE

B.2 (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

A discussion of the effects of the location, construction, and operation of the Project on public health and welfare, natural resources, and the environment is included in Section B.4 below.

Record and database research relating to these effects have included conducting a Class I Cultural Resource Inventory, reviewing the Water Well Inventory maintained by the North Dakota State Water Commission, reviewing the 1978 Stream Evaluation Map of the State of North Dakota, utilizing the US Fish and Wildlife Service's (USFWS) Wetlands Mapper, as well as utilizing the ND Game and Fish Department's (NDGFD) Comprehensive Wildlife Conservation Strategy (CWCS) Database. In addition, site-specific information, such as the presence of cultural resources,

occupied buildings, protected species and/or environmentally sensitive areas, was obtained during field studies conducted in May 2011.

B.2 (b) The Effects of New Energy Conversion and Transmission Technologies and Systems Designed to Minimize Adverse Environmental Effects

The Project does not include new energy conversion or transmission technologies. The Project design is consistent with existing pipeline technologies. However, horizontal directional drilling (HDD) widely referred to as directional drilling will be employed during this Project.

The process starts with installing a receiving hole and entrance pits. These pits will allow the drilling fluid to be collected and reclaimed to reduce costs and prevent waste. The first stage drills a pilot hole on the designed path, and the second stage enlarges the hole by passing a larger cutting tool known as the “back reamer”. The third stage places the product or casing pipe in the enlarged hole by way of the drill steel, pulled behind the reamer, to allow centering of the pipe in the newly reamed path.

The technique avoids the need for open cut trenches, thereby minimizing environmental impacts and eliminating ground level surface hazards. All hard surface and improved roads will be crossed with this technique, as well as the Yellowstone River crossing.

B.2 (c) The Potential for Beneficial Uses of Waste Energy from a Proposed Energy Conversion Facility

The Project does not involve any new large-scale energy conversion facilities such as a coal-fired power plant or wind turbine(s). Electrical or gas turbine powered pumps will be used to provide motive power for the liquid transfer. Given the relatively small size of the pump drivers, and their intermittent rather than continuous use, it is impractical to recover waste energy from these units.

B.2 (d) Adverse Direct and Indirect Environmental Effects, Which Cannot be Avoided Should the Proposed Site or Route be Designated

Unavoidable adverse direct and indirect environmental effects may include temporary construction-related effects on vegetation, wildlife, agricultural operations, transportation, and noise levels, as described in Section B.4 below. However, since construction is scheduled to begin and be completed (1) outside of the prime growing season and (2) on an accelerated timeline, impacts to agricultural operations will be minimal and impacts to transportation will be short-term. Impacts on vegetation and wildlife will also be minimal. Vegetation will be removed from the ROW prior to construction, but the area will be restored and re-seeded following construction. Wildlife may temporarily avoid the ROW during construction, but no long-term impacts are anticipated. Noise level increases will be associated only with construction, and the Project will not generate noise while in operation. In addition, Hiland Operating will implement thorough mitigation measures to minimize construction-related impacts, as described in its Environmental Mitigation Plan (EMP) presented as Tab 5 and Tab 6 in this consolidated application.

B.2 (e) Alternatives to the Proposed Site, Corridor or Route, Which are Developed During the Hearing Process and Which Minimize Adverse Effects

The Project corridor and route were selected to avoid or minimize environmental, cultural resource and socioeconomic impacts. In addition, the Project route was selected based on voluntary landowner participation and landowner input regarding the specific location of the Project. The route is described in Section B.3 and depicted in diagrams presented in Tab 4.

Hiland Operating is prepared to fully participate in the Commission's application hearing process and has compiled this application and supporting documentation in both hardcopy and electronic format to assist in its distribution.

B.2 (f) Irreversible and Irrecoverable Commitments of Natural Resources Should the Proposed Site, Corridor or Route be Designated

The Project will require minimal irreversible or irretrievable commitments of natural resources. Steel will be utilized for the line, gravel may be utilized for access roads, and petroleum fuel will be required for construction equipment. In addition, the Project will also assist in transporting NGLs produced within northwestern North Dakota to consumers; thus, the Project will aid in reducing the amount of natural gas flared, and help to ensure that a natural resource is more efficiently utilized.

B.2 (g) The Direct and Indirect Economic Impacts of the Proposed Facility

Of the 5,300 wells operating in the state's oil patch, as of January 2011, approximately 720 are not connected to a natural gas-gathering facility. About 2,000 new wells are expected in 2011 in North Dakota alone, and many will not be near facilities that can capture and move the gas.¹

According to the North Dakota Industrial Commission records, North Dakota pumped a record 113 million barrels of oil in 2010, shattering the high set a year earlier by 33 million barrels.² The state also produced a record 113 billion cubic feet of natural gas in 2010, up from 92.4 billion cubic feet the year before.² At the end of April 2011, per the latest North Dakota Industrial Commission statistics, 35% of natural gas produced in North Dakota was flared as an unmarketable byproduct of oil production.³

¹ Kringstad, J. March 18, 2011. Bloomberg Business Week, Article by Associated Press.

² NDIC. "North Dakota Annual Oil Production." Available at: <https://www.dmr.nd.gov/oilgas/stats/annualprod.pdf> (accessed June 30, 2011).

³ NDIC. "North Dakota Monthly Gas Production and Sales." Available at: <https://www.dmr.nd.gov/oilgas/stats/Gas1990ToPresent.pdf> (accessed June 30, 2011).



FIGURE 3.B.1 North Dakota Natural Gas Production, Million Cubic Feet per Day²

To encourage companies to invest capital in infrastructure improvements, efficient modes of transportation must be approved to minimize operating costs.

The proposed Project will connect the Hiland Operating Plant to the YSVR rail network via the Hiland Operating Rail Terminal, which will allow more efficient transportation of NGLs via rail, rather than truck transport, and offer more sale point options outside of the State of North Dakota to maximize market flexibility.

In addition to increasing the NGLs transmission capacity within the state, the Project also provides other benefits. For example, the Project will increase the tax base of McKenzie County. The Project will also offer job opportunities during construction of the Project that may be filled with local contractors and/or personnel. Wages paid to non-local contractors and/or personnel are also likely to benefit the regional economy through expenditures for supplies, lodging, fuel and other services.

B.2 (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

Over the past several years, the North Dakota Pipeline Authority has been working with producers and regional pipeline companies to address issues surrounding the safe transportation of crude oil and natural gas produced in the state. “An Update on North Dakota’s Natural Gas Infrastructure,” published by the North Dakota Pipeline Authority in May 2010, provides an update regarding the State’s natural gas infrastructure (see Appendix A in Tab 2). There are currently twelve traditional natural gas plants with comparable lateral transmission lines in operation in the State. The report also provides a brief overview of other existing and planned natural gas processing plants and associated pipelines in the State.

The North Dakota Pipeline Authority’s report does not identify any planned NGLs transmission pipelines in the immediate vicinity of the Project’s corridor or route. In addition, Hiland Operating is not aware of any existing plans by state, local government, or private entities with respect to NGLs pipeline development or any other planned development in the vicinity of the Project’s corridor or

route based on our review of publicly available documents, or inquiry of McKenzie County officials. However based on recent history, it should be expected that expansion of crude oil and natural gas pipeline gathering systems, as well as additional individual rural residential development, will continue to occur.

B.2 (i) The Effect of the Proposed Site or Route on Existing Scenic Areas, Historic Sites and Structures, and Paleontological or Archaeological Sites

Beaver Creek Archaeology of Mandan, North Dakota was engaged to review existing site file data maintained by the State Historical Society of North Dakota (SHSND), North Dakota State Historic Preservation Office (SHPO) to determine if any portion of the Project route was surveyed previously for cultural resources. The file search was performed in August 2010 using a 2-mile wide study corridor on a total of 19.5 miles of proposed route for up to three separate pipelines; with two alternative routes to reach the rail loading facility. The original file search was supplemented with an additional file search in May 2011 again with a 2-mile wide study corridor using a slightly modified route which incorporates final changes prompted by landowner concerns for the final 9.0 miles of the NGL pipeline route.

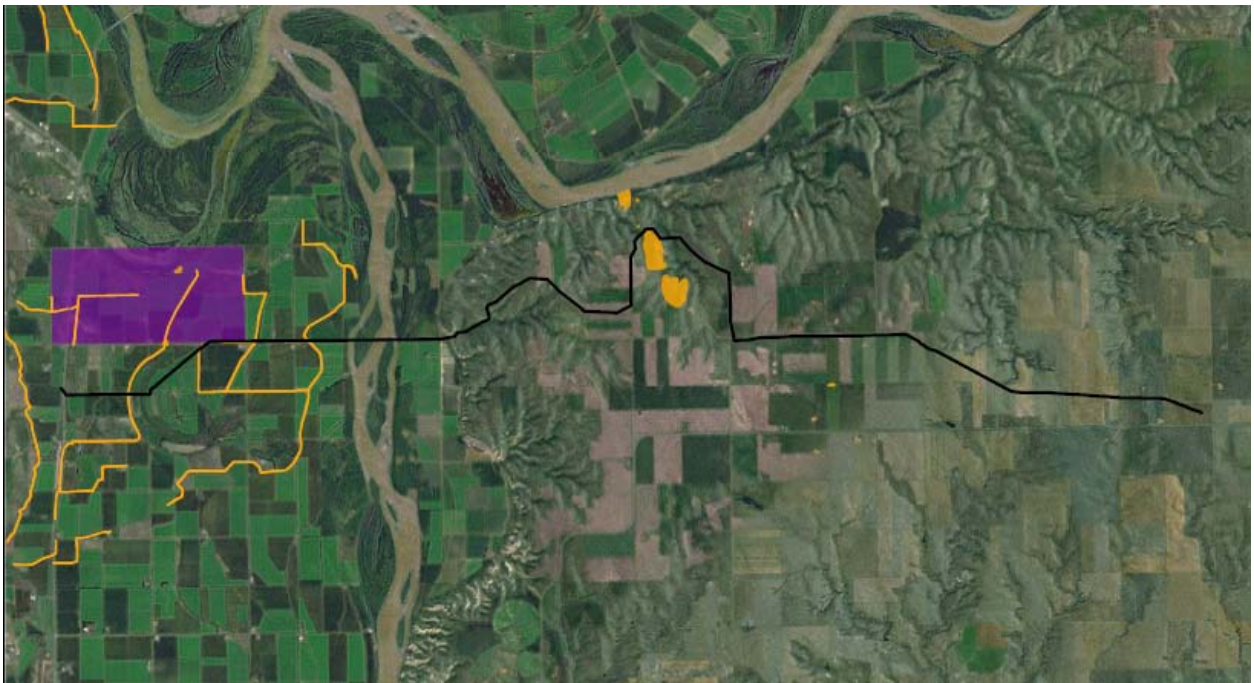


FIGURE 3.B.2 Project Cultural Inventory Sites

A Class III pedestrian survey was conducted on the eastern 5.1 miles of the corridor and route in September 2010 and a report was issued in October 2010. The study was performed in connection with Hiland Operating’s submission of a consolidated Certificate of Corridor Compatibility and Route Permit application for its 8-inch natural gas pipeline project (see Case No. PU-10-555) and involved a field survey of an area 250 feet wide (twice the proposed construction ROW width), for a total Area of Potential Effect (APE) of 155 acres.

The investigation of the APE of the eastern portion of the route revealed one new cultural resource. Isolated Find 32MZx1102 consisted of a single Knife River Flint (KRF) scraper. The isolated find is not eligible for the National Register of Historic Places (NRHP), so no avoidance is necessary. All previously recorded sites are situated well away from the Project area and will not be impacted. Consequently, a finding of "No Significant Historic Properties Affected" was recommended by Beaver Creek Archaeology, with a recommendation that no further archaeological investigation would be necessary. The North Dakota State Historic Preservation Office (SHPO) reviewed the report and agreed with these findings and recommendations.

A Class III pedestrian survey was conducted on the western 9.0 miles of the corridor and route by Beaver Creek Archaeology in May 2011. The Area of Potential Effect (APE) consisted of a field survey area 250 feet wide (twice the proposed construction ROW width), resulting in an additional 326 acres being inventoried for cultural resources.

The investigation of the western portion of the corridor within the APE revealed three new cultural resources and three previous sites. The first newly recorded site consists of one stone circle (32MZ2206), which was identified within the APE. Based on this finding, the Project route was moved and the proposed construction ROW narrowed to 25 feet wide so to avoid the feature by approximately 100 feet.

The second newly recorded site located within the APE consists of a stone circle with an associated cairn (32MZ2205). The Project ROW within the proximity of the site will be limited to 25 feet. The Project has also been moved in this location so that it is on the downward slope below the site location. The features will be avoided by approximately 100 feet or more in this area. It is recommended that both site boundaries be fenced off and monitored by an archaeologist during the construction phase of the pipeline when working in the vicinity of each of the two previously mentioned sites.

The third newly recorded site (32MZ2209) consists of three standing structures – house, barn and windmill – which were identified within the APE. The structures are recommended ineligible. Even though the site is ineligible, and would not need to be avoided, the Project will avoid the features during construction.

The proposed Project also crosses three previously recorded sites. The first previously recorded site is 32MZ561, which is a former stone circle site that has been destroyed by plowing (a site update has been performed). The area proposed to be impacted by the Project is located on the northern side of the site in an already disturbed pipeline corridor which was previously tested in 1981 by the University of North Dakota. At that time it was determined that this portion of the site was a noncontributing element to the site. Sometime between 1981 and the present, the site was plowed up and all of the features destroyed, excluding one cairn found on the west side of the gravel road that skirts the western edge of the site. In addition to being plowed, an oil well has been constructed on a portion of the site. During the site revisit, it was noted that cultural material (KRF flakes) was visible in the central to southern extent of the site boundary. The site has been severely impacted but it is still recommended that further investigation be conducted to determine if the remaining portion of the site south of the existing pipeline corridor and west of the well location may be eligible for listing on the NRHP. Evaluative testing would need to be conducted to determine if subsurface material is still intact, before any activity is to take place south of the previously disturbed pipeline corridor. As long as the proposed Project corridor stays within the inventoried

area north of the existing pipeline, it is the archaeologist's professional opinion that no further impact to site 32MZ561 will occur.

The second previously recorded site located within the APE is unevaluated site 32MZ1556 (Northern Pacific Railroad) (a site update has been performed). It is recommended that the pipeline crossing of the railroad tracks be bored under the berm to avoid impacting the site. No physical harm will come to the railroad track or berm as long as boring occurs.

The third previously recorded site within the APE is 32MZ1174 (Lower Yellowstone Irrigation Canal System). This site consists of a series of irrigation canals which the project crosses on multiple occasions. It is recommended that all pipeline crossings of the irrigation canal system should be bored under the canals to avoid impacting the site. No physical harm will come to the irrigation canals if the pipeline is installed using the directional boring construction technique.

Beaver Creek Archaeology issued a conclusion of "No Significant Historic Properties Affected," conditioned on compliance with the recommendations outlined above. The June 2011 report was submitted to the SHPO. The SHPO issued a letter that concurred with the findings.

Based on the results of the Class I and III cultural resource inventories, a finding of "No Historic Properties Affected" has been issued by Beaver Creek Archaeology on both portions of the proposed corridor. The findings of all inventory studies have been consolidated and summarized in Figure 3.B.2, and presented in more detail on the route maps found in Tab 4, Figure 4.B.1(a) through Figure 4.B.5(a).

Both Class III Cultural Resources Inventory reports prepared by Beaver Creek Archaeology are included in this application under Tab 4, Appendix I.

An "Unanticipated Discovery Plan" has been developed and will be utilized should artifacts be uncovered during Project construction. The plan, presented in Section B.6.g, is identical to plans that have been used by Hiland Operating, and approved by SHPO, for other projects.

No scenic areas, historic sites and structures, and paleontological or archeological sites, other than those identified here in section B.2.i, have been identified by Hiland Operating or its consultants.

B.2 (j) The Effect of the Proposed Route on Areas Which Are Unique Because of Biological Wealth or Because They are Habitats for Rare and Endangered Species

The NDGFD, the USFWS, and the North Dakota Parks and Recreation Department (NDPRD) were contacted to assist in identifying species and ecologically significant habitats within the proposed Project corridor and along the proposed Project route. These agencies will identify any possible concerns regarding federally-listed endangered, threatened, candidate, sensitive, or watch species, state-listed protected species, and critical habitats.

The NDGFD and USFWS were provided with the proposed route, which they are currently reviewing.

The North Dakota Natural Heritage Inventory System maintained by the NDPRD was reviewed for Species of Concern in the state that have been identified by prior field studies within the Project's corridor. A map was provided to the NDPRD to allow for the analysis of each location of concern.

This information was incorporated into the field training and reference information used during the biological field survey conducted in the study corridor in May 2011. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

With two exceptions, no federally-listed endangered, threatened, candidate, sensitive, or watch species, state-listed protected species, or critical habitats were identified during the August and September 2010 biological field surveys of the eastern portion of the corridor or during the May 2011 biological field survey of the western portion of the corridor portion. *Townsendia exscapa* and *Townsendia hookeri* were identified in a few locations within the study corridor, but only in one area within the proposed construction zone. Photographs of these plants are presented as Figure 3.B.3. Locations of these populations are also reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.



FIGURE 3.B.3 Protected Plant Species *Townsendia exscapa* and *Townsendia hookeri*

The lack of identified sensitive wildlife species within the Project's corridor, coupled with only limited instances of protected plant species, will allow active impact management during the construction process. Given that Project construction is expected to occur outside of nesting, breeding and migratory seasons, and that the limited populations of *Townsendia exscapa* and *Townsendia hookeri* can be easily marked and avoided during construction, Hiland Operating's environmental consultants have concluded that the Project will have no significant effect on unique areas of biological wealth or habitats for rare and endangered species.

B.2 (k) Problems Raised by Federal Agencies, Other State Agencies, and Local Entities

To date, no problems or concerns have been raised by federal agencies, state agencies, or local entities. However, the Project is still under agency review, and copies of subsequent correspondence and/or recommendations offered by the agencies will be provided to the Commission upon receipt.

B.3 IDENTIFY AND MAP CRITERIA LEADING TO PROPOSED PROJECT ROUTE LOCATION WITHIN CORRIDOR

The following criteria, which include but are not limited to the criteria required by Section 69-06-08-02 of the North Dakota Administrative Code, were considered in evaluating the location of the Project route: Exclusion and Avoidance Areas, Selection and Policy Criteria, Design and Construction Limitations, Economic Considerations, Human Environment, Soils, Vegetation/Wildlife, Land Use, Water Resources, and Cultural Resources. Each criterion is discussed in detail, including descriptions, potential impacts, and mitigation measures where appropriate, in sections B.4, B.5, and B.6.

The Project route has been superimposed on both 2010 aerial photographic maps as well as USGS Quadrangle topographic maps that are presented in Tab 4 as Appendix 4.B, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

B.4 RELATIVE VALUE AND EFFECTS UPON EACH CRITERION INCLUDING LOCATION, CONSTRUCTION, AND OPERATION OF THE FACILITY

In accordance with Section 69-06-08-02 of the North Dakota Administrative Code, the Project route has been developed after consideration of its impact on humans and the environment. Alternative routes or options, which are discussed in Section C.2 of the Certificate of Corridor Compatibility Application, are not preferable and will generally result in more significant impacts.

Underground pipeline installation minimizes potential impacts on human and animal welfare and aesthetics. Construction of the Project will cause temporary disruption to the environment, but will not result in long-term changes to the environment. The following is a general analysis of the existing human and natural environment along the Project route and the potential impacts of ROW preparation, construction practices, and operation and maintenance procedures.

B.4 (a) Exclusion and Avoidance Areas (North Dakota Administrative Code, Sections 69-06-08-02(1) and 69-06-08-02(2))

The Commission has identified certain sensitive or otherwise important environmental features that must be considered during the selection of a corridor and a route for transmission facilities. These features have been classified as either “Exclusion Areas” or “Avoidance Areas.” As set forth in Section 69-06-08-02(1) of the North Dakota Administrative Code, Exclusion Areas are areas that are to be excluded from consideration for transmission facility routes, and may only encompass up to fifty percent of the width of transmission facility corridors unless there is no reasonable alternative. As set forth in Section 69-06-08-02(2) of the North Dakota Administrative Code, Avoidance Areas are areas that are not to be considered in the routing of a transmission facility unless it is shown that, under the circumstances, there are no reasonable alternatives, and may only encompass up to fifty percent of the width of transmission facility corridors unless there is no reasonable alternative. In 1978, the Commission published the Inventory of Exclusion and Avoidance areas for the Siting of Energy Conversion and Transmission Facilities, which lists the Exclusion and Avoidance Areas for each county in North Dakota (see Table 3.B.1 and Table 3.B.2). Hiland Operating has confirmed with Commission staff that no new Exclusion or Avoidance Areas have been added to the Inventory to date.

Appendix 4.B (see Tab 4) contains maps depicting Exclusion and Avoidance Areas within a one mile study corridor centered on the Project route. The Project route has been superimposed on both 2010 aerial photographic maps as well as USGS Quadrangle Topographic Maps.

B.4 (a)(1) Exclusion Areas

One type of Exclusion Areas is located within the proposed corridor (see Table 3.B.1 below); however, none of the Exclusion Areas are crossed by the proposed route, nor do any exclusion areas constitute more than 50% of the corridor width.

TABLE 3.B.1 – Exclusion Areas

Exclusion Area	Within Corridor	Crossed By Route	Description of Exclusion Area and Proposed Buffer
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas	None	None	
Designated or registered state: parks; historic sites; monuments; historical markers; archeological sites; nature preserves	None	None	
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions	None	None	
Areas critical to the life stages of threatened or endangered animal or plant species	None	None	
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	Yes	None	As noted in Section B.2.j, a Federally protected plant species <i>Townsendia exscapa</i> and <i>Townsendia hookeri</i> were identified in a few locations within the study corridor, but only in one area within the proposed construction zone. The plants will be marked and avoided during construction.

B.4 (a)(2) Avoidance Areas

Three types of Avoidance Areas were identified within the Project corridor (see Table 3.B.2 below); however, one is not applicable to this Project and, and the others not be crossed by the route or impacted by construction activities if the listed precautions are satisfied.

Seven significant archeological sites are within the study corridor and are summarized in Section B.2(j) and discussed in detail the report in Tab 4 Appendix 4a. Buffer zones have been designated to protect the integrity of these sites. Other archeological sites are in the corridor, but well outside of any area of potential disturbance by construction activities.

Three wildlife management areas (WMA) are partially located within the study corridor, but none will be directly impacted by construction or pipeline operations. The closest of three WMAs, Sullivan Wildlife Management Area, is located approximately 1240 feet north of the proposed Project route in Section 35, Township 152 N, Range 104 W. Overlook Wildlife Management Area is located approximately 2050 feet northwest of the proposed Project route in Section 30, Township 152 N, Range 103 W. Trenton Wildlife Management Area is located approximately 3670 feet north of the proposed Project route in Section 29, Township 152 N, Range 103 W. Their locations are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7. None of the WMAs constitute more than fifty percent of the width of the study corridor.

Twenty-two rural residences and/or farmhouses were identified within the Project corridor; however, the residences do not encompass more than fifty percent of the width of the corridor in any location. Seven occupied residences and one abandoned residence are within 500 feet of the proposed route and locations are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7. The closest rural residence to the proposed Project route is the Cayko residence, which is located approximately 120 feet away from the proposed route in Section 34 T152N R104W. Hiland Operating will obtain the necessary waivers from landowners from the necessary 500-foot avoidance area criteria.

Two parcels of irrigated land are located within the corridor and will be crossed by the route proposed for the Project. However, pursuant to Section 69-06-08-02(2)(h), irrigated land is not considered an avoidance area for underground transmission facilities, such as the proposed pipeline. No aboveground structures will be installed on these parcels.

TABLE 3.B.2 – Avoidance Areas

Avoidance Area	Within Corridor	Crossed By Route	Description of Avoidance Area and Proposed Buffer
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands	None	None	
Historical resources which are not specifically designated as exclusion or avoidance areas	Yes	None	As noted in Section B.2.i, seven significant archeological sites are within the study corridor.

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Avoidance Area	Within Corridor	Crossed By Route	Description of Avoidance Area and Proposed Buffer
			<p>Buffer zones have been designated to protect the integrity of the site.</p> <p>Other sites are in the corridor, but well outside of any area of potential disturbance by construction activities.</p>
<p>Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands</p>	<p>Yes</p>	<p>None</p>	<p>Overlook Wildlife Management Area is located approximately 2050 feet northwest of the proposed Project route in Township 152 N Range 103 W Section 30.</p> <p>Trenton Wildlife Management Area is located approximately 3670 feet north of the proposed Project route in Township 152 N Range 103 W Section 29.</p> <p>Sullivan Wildlife Management Area is located approximately 1240 feet north of the proposed Project route in Township 152 N Range 104 W Section 35.</p>
<p>Within five hundred feet [152.4 meters] of a residence, school, or place of business</p>	<p>Yes</p>	<p>Yes</p>	<p>Seven occupied residences and one abandoned residence are within 500 feet of the proposed route. Distance from these structures to the pipeline route ranges from 120 feet to 477 feet. Hiland Operating will obtain the necessary waivers from landowners from the necessary 500-foot avoidance area criteria.</p>
<p>Areas that are geologically unstable</p>	<p>None</p>	<p>None</p>	
<p>Irrigated land</p>	<p>Yes, but not applicable</p>	<p>Yes, but not applicable</p>	<p>Per Section 69-06-08-02(2)(h) of the North Dakota Administrative Code, this criterion does not apply to the proposed Project because it is an underground transmission facility.</p>

Avoidance Area	Within Corridor	Crossed By Route	Description of Avoidance Area and Proposed Buffer
Reservoirs and municipal water supplies	None	None	
Water sources for organized rural water districts	None	None	
Areas of recreational significance which are not designated as exclusion areas	None	None	

B.4 (b) Selection Criteria (North Dakota Administrative Code, Section 69-06-08-02(3))

The North Dakota Administrative Code specifies several selection criteria to be considered in designating a transmission corridor or route. Specifically, the Commission considers whether adverse effects from the location, construction, and maintenance of the facility as they relate to the selection criteria will be at an acceptable minimum, and whether these effects will be managed and maintained at an acceptable minimum. Potential impacts, as they relate to each of the selection criteria, are discussed below. Measures Hiland Operating will implement to minimize these impacts are noted below and discussed in greater detail in Section B.6.

B.4 (b)(1) Agricultural Production

The Project will be installed within a new ROW in McKenzie County in northwestern North Dakota. A significant quantity of the Project route will cross agricultural and pasture lands where crop and livestock production are the extensive economic activity. The primary crops cultivated in the area include sugar beets, corn, wheat and alfalfa.

The Project will generate temporary effects on agricultural land use. Hiland Operating will institute appropriate management practices to restore all areas to pre-construction conditions, to the extent reasonably practicable.

Hiland Operating will also implement mitigation requirements to avoid spreading noxious weeds on reclaimed land. Species that are considered noxious weeds in North Dakota are listed in Table 3.B.3. These noxious weeds will out-compete desirable forbs and grasses in pastures, fields, and native grasslands, reducing biodiversity. Noxious and invasive species that were recorded during field study and that are a concern on farm and pasture land are hoary cress, Canada thistle and yellow sweet clover.

TABLE 3.B.3 – Noxious and Invasive Weeds⁴

Common Name	Scientific Name	State Status	McKenzie County Status	Impact
Baby's Breath	<i>Gypsophila paniculata</i>		Noxious	Displaces native vegetation. Reduces protein content of desirable grasses.
Bindweed: Field	<i>Convolvulus arvensis</i>	Invasive		Extremely difficult to control. The extensive root system and twine-like growth disrupts harvesting operations and replaces desirable vegetation.
Burdock: Common	<i>Arctium minus</i>	Invasive	Noxious	Displaces important plant communities. Taint milk products if heavily grazed.
Cress: Hoary	<i>Cardaria draba</i>	Invasive		Displaces existing plant communities and associated wildlife.
Halogeton	<i>Halogeton glomeratus</i>		Noxious	Aggressively invades disturbed sites. Toxic to livestock.
Henbane: Black	<i>Hyoscyamus niger</i>	Invasive	Noxious	Toxic to humans and animals. Replaces desirable native species.
Houndstongue	<i>Cynoglossum officinale</i>	Invasive	Noxious	Displaces desirable plant communities, decreases grazing.
Knapweed: Diffuse	<i>Centaurea diffusa</i>	Noxious		May seriously reduce productive potential of infested rangelands.
Knapweed: Russian	<i>Acroptilon repens</i>	Noxious		Most distributed knapweed and most difficult to control. Inhibits growth in crop plants and other desirable plant species.
Knapweed: Spotted	<i>Centaurea maculosa</i>	Noxious		Reduces livestock and wildlife forage and increases surface water runoff, soil erosion, and stream sedimentation.
Loosestrife: Purple	<i>Lythrum salicaria</i>	Noxious		Quickly displaces native wetland vegetation and has the potential to cause a severe impact on wildlife. Roots of the plant can cause obstruction of water flow in ditches in canals.
Medic: Black	<i>Medicago lupulina</i>	Invasive		Aggressively displaces desirable plant communities, causes bloating in cattle.
Saltcedar	<i>Tamarix chinensis</i> <i>T. parviflora</i> <i>T. ramosissima</i>	Noxious		Displaces native vegetation by releasing salts to inhibit the growth of vegetation.
Spurge: Leafy	<i>Euphorbia esula</i>	Noxious		Contains milky latex which causes oral and digestive irritation in cattle. The plant also replaces desirable forage.
Sweetclover: Yellow	<i>Melilotus officinalis</i>	Invasive		Degrades native grasslands and reduces biodiversity.
Thistle: Canada	<i>Cirsium arvense</i>	Noxious		Displaces desirable plant species and is unpalatable to livestock. Infestations decrease land value for crop production and grazing.

⁴ Information provided by the North Dakota Department of Agriculture.

Common Name	Scientific Name	State Status	McKenzie County Status	Impact
Thistle: Musk	<i>Carduus nutans</i>	Noxious		Corrupts pastures and reduces grazing in the vicinity.
Toadflax: Dalmatian	<i>Linaria genistifolia</i>	Noxious		Unpalatable to livestock and will flourish over native species.
Toadflax: Yellow	<i>Linaria vulgaris</i>	Noxious		Displaces existing plant communities and associated wildlife. Corrupts pasture lands and reduces grazing.
Wormwood: Absinth	<i>Artemisia absinthium</i>	Noxious		Reported to contaminate the milk produced by cattle. Species inhibits growth of desirable forage.

Hiland Operating will require that construction equipment be cleaned before arriving on site to prevent the introduction of undesirable species to the Project area. If undesirable species are present within the construction ROW, Hiland Operating will implement the following mitigation measures:

- Hiland Operating will make an effort to prevent the spread of noxious weed seeds during clearing and grading activities, and to use straw mulch and seed mix that are free of noxious weed seed to revegetate the ROW. Contractors and inspectors will receive information aiding in the identification of noxious weeds. Hiland Operating will also provide training to its Environmental inspectors to identify and prevent the spread of undesirable species.
- During preconstruction walkovers, the Environmental inspectors will flag and document areas containing noxious weeds. The construction crews will be informed of these areas. Hiland Operating will instruct the contractors to minimize the amount of construction equipment and limit the number of passes by this equipment through infested areas. Construction mats may be required to minimize the transport of weed seed or plant material via construction equipment.
- Equipment and construction mats will be cleaned immediately after passing through infested areas. Cleaning will consist of removing large soil clods and/or plant parts from the equipment and construction mats using shovels and brooms, and if necessary, washing the equipment with water or cleaning using compressed air. Soil and water from cleaning activities will not be allowed to flow to non-infested areas.
- Final seeding will be initiated within 24 hours of final grading, pending appropriate weather and soil conditions, to prevent the establishment of noxious weed seeds that may be present in the existing seed bed.

The pipeline will be installed at a depth that exceeds the typical tillage depth. Therefore, the pipeline will not interfere with normal agricultural operations on cropland after construction is complete. Therefore, minimal disruption to agricultural production is expected.

Above-ground facilities that may be located on cropland are limited to line markers, and cathodic protection rectifiers and test stations which can be sited within fence lines. Therefore, minimal long-term loss of farmland use is expected. Hiland Operating will consult with landowners to place

above-ground appurtenances in areas that will cause the least amount of disturbance to landowner operations.

Approximately 35 percent (48 acres) of the 136 acres of pipeline route will cross prime farmlands as classified by the Natural Resource Conservation Service (NRCS) (see Table 3.B.5). This total includes prime farmland and land that would be considered prime farmland if drained. Prime farmland is defined as land with the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yield crops when treated and managed according to acceptable farming methods. Construction activities will not significantly affect the factors such as soil quality, growing season, or moisture supply that are considered in determining whether land is prime farmland.

Following construction, agricultural lands will be returned to preconstruction conditions to the extent reasonably practicable.

B.4 (b)(2) Family Farms and Ranches

The Project will not alter the pattern of land ownership or create long-term disruptions of family farming operations. Construction will be within an existing ROW for the eastern 5.1 miles of the route. The western 9.0 miles of the route would be placed in a new ROW. Easement payments will be beneficial to landowners within the route and no significant interference with farming operations is anticipated. Hiland Operating's crop loss compensation program will compensate landowners if any crop damage were to occur. Crop damage resulting from future pipeline maintenance and repairs will also be compensated by Hiland Operating. All maintenance equipment used will traverse only landowner agreed-upon access routes to minimize disruption to soil, drainage, and crops.

Construction activity can cause short-term disruption of livestock operations and can inconvenience farm activities. Possible impacts include removal or damage of fences, gates, and private roads. Hiland Operating will work to minimize construction interference. Temporary access across the ROW will be provided to allow for livestock and farm equipment movement, as needed. Temporary fences and gates will be constructed as necessary to prevent livestock from entering into the construction zone. The Project will be constructed in a timely manner and, upon completion, fences, gates, and roads will be restored to pre-construction conditions, to the extent reasonably practicable.

B.4 (b)(3) Lands Suitable for Irrigation

The Project will impact two parcels of irrigated land crossed by the Project route. Specifically, aboveground irrigation systems were identified along the route (1) in the NE quarter of Section 4, Township 151 N, Range 103W; and (2) along the route in the SE quarter of Section 31, Township 152 N, Range 103 W. Irrigation canals were identified in the following locations: the S half of Sections 33, 34 and 35, Township 152 N, Range 104 W; the NW quarter of Section 4, Township 151 N, Range 104 W; the S half of Section 5, Township 151 N, Range 104 W. Hiland Operating will take appropriate measures to restore the property to pre-construction conditions, to the extent reasonably practicable.

While the irrigated lands may temporarily be impacted during construction activities, no above ground features of the pipeline will be installed on irrigated land. Since construction is scheduled to occur after the 2011 harvest, little to no impact to agricultural crops is expected.

B.4 (b)(4) Surface Drainage Patterns

Construction of the Project will not alter surface drainage patterns. After construction is complete, streams, swales, ditches, and other natural drains will be restored to preconstruction contours to the extent reasonably practicable. The pipe will be installed beneath drainage ditches in a manner that will not interfere with flow or future maintenance efforts by landowners or the drainage authority. Mitigation measures will include installation of the pipe at a sufficient depth to avoid being encountered by drain cleaning equipment, or installing concrete slabs above the pipe but below the grade of the ditch.

B.4 (b)(5) Groundwater Flow Patterns

Groundwater suitable for domestic and livestock supplies in McKenzie County is available from three aquifer systems. The Fox Hills and basal Hell Creek aquifer system is used as a source for livestock and domestic supplies. It generally is 1,100 to 1,800 feet in depth. The Ludlow aquifer underlies all of McKenzie County at depths greater than 500 feet. The Tongue River aquifer is also suitable for domestic and livestock use and is found at depths between 140 and 500 feet. Local flow for all three aquifers below the Project area will flow in an eastern or western direction towards the Yellowstone River or Missouri River.

The 1985 study “Groundwater Resources in McKenzie County” conducted by the US Geological Survey estimated 150 wells were tapping the Fox Hills and basal Hell Creek aquifer system and the Ludlow aquifer system to provide a low volume source of stock water and other uses.

Groundwater flow could potentially be altered by Project construction through blasting and trenching activities. However, as described in Section B.4.g, no exposed bedrock or areas of shallow bedrock will be encountered. Therefore, blasting is not anticipated.

Other construction-related disturbance and excavation (trenching) could temporarily disturb the level of groundwater and increase the sediment in the groundwater. However, given the shallow depth of construction activities and the relatively deep location of the area’s aquifers, installation of the proposed Project is not expected to have a significant effect on regional groundwater flow patterns.

The use of regulated materials, such as fuel, lubricants, and coolants during construction could present a potential for accidental discharges, which could affect groundwater. Hiland Operating’s Environmental Mitigation Plan (EMP) (see Tab 5 and supporting diagrams in Tab 6) outlines precautions to be taken to prevent sedimentation or other materials from entering the water supplies in the area. Project contractors will be expected to have a current oil spill prevention control and countermeasure (SPCC) plan and implement it fully if the facility contains an aggregate oil storage capacity above 1320 gallons, consistent with US Environmental Protection Agency requirements outlined in 40 CFR Part 112. Regardless of the total storage capacity, no bulk oil storage facilities will be sited within 100 feet of surface water.

A description of Hiland Operating's pipeline protection and emergency response procedures for pipeline operations and maintenance is provided in Section B.9.c.

B.4 (b)(6) Impact on Noise Sensitive Land Uses

Seven farmsteads or rural residences are located within 500 feet of the proposed Project. No other sensitive noise receptors, such as schools or hospitals, are located in the vicinity of the Project. During construction, residences in close proximity to the construction will experience short-term increases in construction-related noise. The heavy construction equipment needed to construct the Project will generate short-term increases in ambient noise levels. Typical bulldozers, backhoes, and side booms used to install pipelines generate between 80 to 90 decibels within 50 feet of the equipment. Increases in ambient noise levels due to heavy equipment operation will be limited to the period of construction, typically during daylight hours.

No noise is generated by the Project during normal operations. No pump stations or noise increases at existing pump stations (located only at the Hiland Operating Plant) are proposed by this Project.

B.4 (b)(7) Impact on Visual Effect on the Adjacent Area

Aboveground facilities to be constructed as part of the Project are pipeline appurtenances such as mainline valves, line markers, cathodic protection equipment and test stations. Mainline valves will be sited along the route of the proposed pipeline. Other than these permanent above ground facilities, the Project will result in only short-term visual effects related to construction activities.

B.4 (b)(8) Impact on Extractive and Storage Resources

No extractive or storage resources were identified that would be affected by the Project. Efforts have been employed to avoid current or planned oil extraction facilities along the route.

B.4 (b)(9) Impact on Wetlands and Water Bodies

The route crosses 1 river, 2 creeks, 2 tributaries and 6 irrigation canals totaling approximately 0.7 miles in length. Waterbody crossings by legal description are described in Table 3.B.4 below.

All wetlands along the proposed route are associated with a stream, river or irrigation canal.

The Yellowstone River is classified as a Class I fishery resource. Hiland Operating will use directional boring techniques when crossing this waterbody to minimize impacts on the river.

All necessary permits have been applied for and received from regulatory agencies for the Yellowstone River crossing.

TABLE 3.B.4 – Wetland and Waterbodies Crossed by the Project

Name	Crossing Length (ft)	Location	Trees Established
McKenzie County			
Unnamed Tributary of Missouri River	10	T152N R103W Section 29	YES
Unnamed Tributary of Missouri River	10	T152N R103W Section 32	NO
Briar Creek	10	T152N R104W Section 36	YES
Yellowstone River	2634	T152N R104W Section 35	YES
Irrigation Canal	20	T152N R104W Section 34	NO
Irrigation Canal	20	T152N R104W Section 34	NO
Irrigation Canal	20	T152N R104W Section 34	NO
Irrigation Canal	20	T151N R104W Section 4	NO
Fourmile Creek	951	T151N R104W Section 5	NO
Irrigation Canal	20	T151N R104W Section 5	NO
Irrigation Canal	20	T151N R104W Section 5	NO

B.4 (b)(10) Impact on Woodlands and Wooded Areas.

Tree rows and woody areas occur in limited amounts as isolated islands or rows throughout the Project area. The proposed route crosses through wooded areas on rangeland and along the Yellowstone River. Wooded habitat provides shelter and safety for a number of wildlife species. Impacts to trees will be avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. It may be necessary to clear some mature trees during construction; however, Hiland Operating will comply with the Commission’s tree and shrub mitigation specifications regarding replacement of trees and shrubs following construction.

B.4 (b)(11) Impact on Radio and Television Reception, and Other Communication of Electronic Control Facilities

No impacts on television or radio reception or communication or electronic control facilities are anticipated as a result of the Project.

B.4 (b)(12) Impact on Human Health and Human Safety

During construction, residences and businesses in close proximity to construction activities will be exposed to short-term increases in construction-related noise and dust. Some minor dust emissions are inevitable in any construction project. However, if dust is excessive, the construction ROW and access roads near residential areas will be watered down to control dust during construction. After construction is completed, measures to stabilize and revegetate the ROW will be taken promptly to prevent further dust emissions.

The heavy construction equipment needed to install the pipeline will generate unavoidable short-term increases in ambient noise levels. Increases in ambient noise levels due to equipment operation will be limited to the period of construction and will generally be limited to daylight hours. No noise will be generated by the Project during normal operations.

No residences or other occupied structures will be razed due to construction. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments will not be precluded by the Project. Construction could temporarily restrict access to residences along the Project route. Where this potential exists, Hiland Operating will either limit the time such restrictions are in place or will make arrangements to accommodate the landowner's access needs.

Hiland Operating owns and operates 15 natural gas gathering systems with approximately 2,160 miles of gas gathering and transmission pipelines in the Mid-Continent and Rocky Mountain regions of the United States. By building and operating this network, Hiland Operating has become experienced in managing the construction and operation of pipeline systems in a manner that protects the public's health and safety.

Causes of and Prevention of Accidents on Pipelines

The major causes of pipeline leaks in the United States are corrosion (both internal and external), excavation damage, pipe or weld failure, incorrect operations, or natural causes (e.g., floods or outside force). To prevent these categories of failures, Hiland Operating will construct and maintain the pipeline to meet or exceed industry and governmental requirements and standards. Specifically, the steel pipe utilized will meet US DOT Pipeline and Hazardous Material Safety Administration (PHMSA) federal regulations under 49 CFR Part 195 (referred to hereafter as PHMSA regulations), and construction methods will follow standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers and API. As a safety measure, the pipeline is designed to withstand pressures over and above its normal operating pressures and will operate according to all applicable laws, rules and regulations. All pipe is inspected and integrity-tested at the factory and transported per the highest technical standards. All of the pipe will be manufactured with fusion-bonded epoxy coating to protect against corrosion. The actual installation of the pipeline and all construction and testing records will be subject to regulatory inspection, including by PHMSA inspectors. PHMSA will also conduct regularly scheduled field inspections of the Project to ensure compliance with federal regulatory requirements, including the integrity testing of the pipeline through the use of internal inspection devices.

Once installed, the Project will be subjected to careful testing to verify integrity and compliance with specifications. PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing. Testing will also include checking coating integrity. Initially, Hiland Operating will perform X-ray inspections of 100% of the welds. Only after adequate performance has been established based on statistically significant data, and each of the Project's welders has demonstrated proper weld material handling, will a reduction in the percentage of welds inspected be considered; however, the percentage of welds inspected will never fall below the requisite 10%.

Additional Project inspections will include internal inspection of the entire length of the pipeline by using an in-line inspection tool known as a caliper pig, and hydrostatically testing the pipeline to determine the MAOP. The Project will be placed into service only after inspection to verify compliance with all construction standards and requirements.

The Project will be maintained and inspected according to PHMSA regulations, industry codes and prudent pipeline operating techniques. All of Hiland Operating's mainline fluids pipelines are

externally coated to resist corrosion, internally inspected at regular intervals using in-line inspection technology, and equipped with a cathodic-protection system to prevent external corrosion.

The Hiland System rights-of-ways that are designated Class 1 are patrolled via foot patrol annually. Road crossings and Rail Crossings are inspected via foot patrol semi annually. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the routes of the lines.

Hiland Operating also conducts extensive public education and outreach programs that exceed industry (API Recommended Practice 1162) and PHMSA (49 CFR § 195.440) requirements concerning public awareness of pipelines and pipeline-safety matters. All Hiland Operating lines are marked with signage and warnings, per federal regulations, at road and highway crossings, railroad crossings, navigable rivers, and other locations to alert the public to the presence of underground lines and to provide information, contact numbers, and emergency data.

Pipeline workers and contractors performing critical tasks are qualified under OSHA safety standards and PHMSA “operator qualification” rules and are subjected to federal drug and alcohol testing requirements. Hiland Operating meets, and often exceeds, these requirements so that human error in construction and operation is avoided.

Hiland Operating’s Pipeline Incidents and Public Safety

According to the information available, there have been no deaths of or major injuries to landowners or members of the public as a direct result of a pipeline leak on the Hiland System since the system began operations in the U.S.

Hiland Operating’s Ten-Year Pipeline Accident Record

Based on a search of the U.S. Coast Guard’s National Response Center incident database for the last ten years in North Dakota, there have been 84 reported pipeline incidents, 3 involving natural gas liquids on either gathering systems or transmission pipelines. A total of 178 incidents were reported for all modes of transportation and all materials during the same period. None of the incidents involved Hiland Operating.⁵

B.4 (b)(13) Impact on Animal Health and Safety

Construction activity within the Project area is expected to have temporary impacts on domestic animals and wildlife. The clearing of vegetation will temporarily reduce cover, nesting, and foraging habitat for some species. Small, slower moving species may be lost during construction. However, species will generally move into adjacent habitats, away from the disturbance area. Once habitat alterations are reclaimed, it is expected that wildlife will reestablish within the area.

Pipeline trenching activities and associated spoil piles may result in a short-term barrier restricting the movement of some wildlife species (typically two to four weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings will be kept open, providing crossing access for wildlife. During construction, Hiland

⁵ U.S. Coast Guard National Response Center Database (accessed June 21, 2011).

Operating will erect temporary fencing, as necessary, to keep livestock and wildlife away from the pipeline trench, and will minimize the length of time the trench is left open.

B.4 (b)(14) Impact on Plant Life

During the field study, trees and shrubs within the 125-foot wide construction ROW will be identified, inventoried and marked. Trees and shrubs that are cleared from the temporary workspace will be replaced once construction activity is complete in accordance with the Commission's tree and shrub mitigation specifications. All areas where vegetation will be removed will be revegetated in accordance with applicable county agency standards and landowner requests. Permanent impacts to vegetation are not anticipated.

Only one area of sensitive plant species (*Townsendia exscapa* and *Townsendia hookeri*) was identified within the Project's 125-foot construction ROW and will be avoided during construction. No native prairie areas were identified within the Project's 125-foot construction corridor. No areas of native prairie areas were identified during the field surveys.

B.4 (c) Policy Criteria (North Dakota Administrative Code, Section 69-06-08-02.4)

The Commission may give preference to an applicant that will maximize benefits resulting from the adoption of policies and practices identified in Section 69-06-08-02(4) of the North Dakota Administrative Code. These policies, and the extent to which the Project aligns with or reinforces these policies, are discussed further below.

B.4 (c)(1) Location and Design

Two parcels of irrigated land and seven occupied rural residences or farmhouses within 500 feet of the route. However, irrigated land is not considered an avoidance area for underground transmission facilities, such as the proposed Project. Hiland Operating will obtain the requisite waivers for the occupied residences.

Multiple archaeological sites and sensitive plant species are within the 125-foot construction ROW. However these areas will be marked and the construction zone width narrowed in these areas to avoid disturbing these features.

The proposed Project includes installation of a 6-inch nominal diameter pipeline with a nominal wall thickness of 0.188 inches denoted as American Petroleum Institute (API) Code 5LX specification X52/X42 pipeline pipe. The maximum allowable operating pressure (MAOP) will be 740 pounds of pressure per square inch gauge (psig). The valves to be installed will be 6-inch ANSI 300, flange end by flange end, full port, rising stem gate valves. These valves will be manufactured in accordance with API Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." The MAOP of the valve will be 740 psig.

The steel pipe installed will meet US DOT criteria outlined in 49 CFR § 195.100. The Project will be constructed per 49 CFR § 195.200, and operated and maintained per 49 CFR § 195.400.

The Project is designed and will be operated in a manner that meets or exceeds state and federal engineering, safety and operational design standards.

B.4 (c)(2) Training/Utilization of Available Labor and General/Specialized Skills Required

During construction of the facility, skilled and unskilled labor, both local and non-local workers, will be employed by Hiland Operating or by the general contractor(s) selected to construct this Project. Hiland Operating has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by the PHMSA under 49 CFR Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through review of job performance, periodic pipeline control system simulators, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

B.4 (c)(3) Economies of Construction and Operation

The Project is believed to be the most cost-effective and operationally sound means of meeting Hiland Operating's delivery obligations. Refer to Section B.2 (g) of this Application and Section C.2 of the Application for a Certificate of Corridor Compatibility.

The strategy of co-locating multiple transmission pipelines within a common corridor improves efficiencies for the required inspection and maintenance activities. Hiland Operating will benefit from using an existing designated pipeline corridor to install its additional liquid pipeline.

B.4 (c)(4) Use of Citizen Coordinating Committees

Hiland Operating does not believe that a Citizen Coordinating Committee is necessary for the Project, since the Project will be constructed in an area of the state where natural gas gathering and transmission pipelines already exist and, as such, the public is familiar with the permitting, construction and operation of pipeline facilities.

However Hiland Operating have met with and coordinated information through McKenzie County officials on the project, and impacts to that area of the county.

B.4 (c)(5) Commitment of a Portion of the Transmitted Product for Use in this State

The Project is expected to receive deliveries of processed NGLs produced in northwestern North Dakota. Upon completion, this Project will provide pipeline transportation of NGLs to various delivery areas served by YSVR both within North Dakota and out of state.

B.4 (c)(6) Labor Relations

The Project is not anticipated to have any effect on labor relations within the State of North Dakota.

B.4 (c)(7) Coordination of Facilities

The Hiland Operating Plant began operation earlier in 2011, and has a 60 million standard cubic feet per day capacity to purify and fractionate raw natural gas produced from oil fields in western North Dakota. The Plant is already producing mixed liquefied NGLs. Upon completion, the Project will enable transportation of the processed NGLs to the various delivery areas served by YSVR in a more efficient and cost effective manner.

B.4 (c)(8) Monitoring of Impacts

Any construction-related impacts of the Project will be mitigated through the use of best management practices, appropriate construction techniques, and environmental inspection during and following completion of construction. Following construction of the Project, a thorough inspection will be performed to ensure restoration efforts have been successful. Monitoring and treatment of noxious weeds and/or invasive species will be conducted on an annual basis to ensure a high degree of control and maximize treatment effectiveness. Environmental monitoring, in the form of ongoing environmental inspection, will be conducted during and following construction.

B.4 (c)(9) Utilization of Existing and Proposed Rights-of-way and Corridors

The eastern 5.1 miles of the Project's route is within the corridor designated by the Commission in December 2010 in connection with the siting of Hiland Operating's 8-inch natural gas pipeline project (see Corridor Compatibility Number 116 and Route Permit Number 126 issued in Case No. PU-10-555).

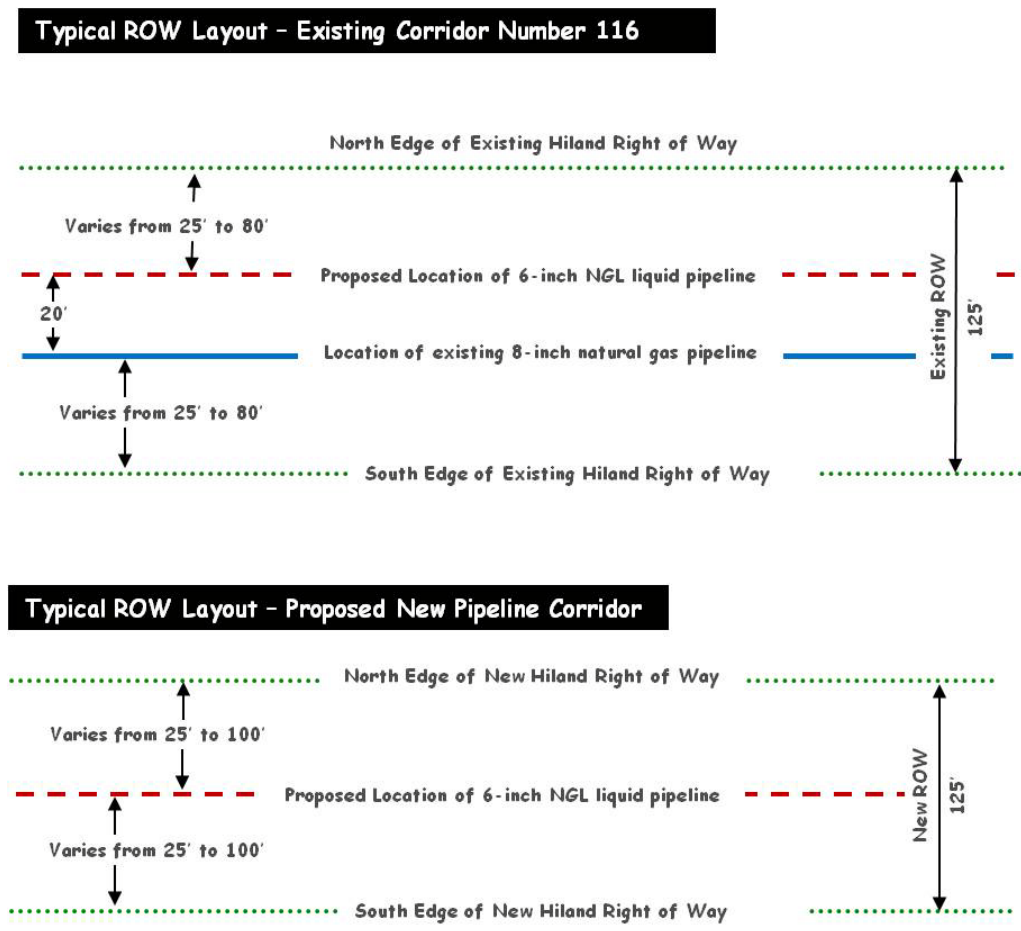


FIGURE 3.B.4 – Typical Right-of-Way Configurations

The western 9.0 miles of the Project will be constructed in a new ROW that will be 125 feet wide. Hiland has acquired or will acquire a 100-foot permanent easement for the Project, as well as possible future pipeline installation.

Hiland Operating will acquire the right to utilize additional temporary workspace from the landowners, where necessary, during construction. The use of workspace is prohibited without the landowner's and Hiland Operating's approval. In all cases, the amount of additional temporary workspace utilized will be kept to the minimum necessary to safely conduct work. Temporary workspace will not be restricted by or subject to permanent easement restrictions upon completion of construction.

B.4 (c)(10) Other Existing and Proposed Transmission Facilities

No other transmission facilities exist or are proposed to move mixed NGLs from the Hiland Operating Plant either by pipeline or rail to out of state markets. Other transmission facilities that exist are located significantly farther away than the pipeline distance proposed by this Project, with the exception of the 8-inch natural gas transmission pipeline co-located in the eastern segment of the route.

B.4 (d) Design and Construction Limitations

See Section A.3 of the Certificate of Corridor Compatibility Application. Of particular note was the cluster of archaeological sites identified by early siting studies for a potential route to the north and across the Missouri River. This issue was avoided by using the current proposed route to the west.

B.4 (e) Economic Considerations

See Section B.2.g of this Route Permit Application and Section C of the Certificate of Corridor Compatibility Application (found in Tab 1).

B.4 (f) Human Environment

The Project area is sparsely populated and farming is the predominant economic activity. The proposed route crosses 18 parcels of land owned by 18 different landowners. The route does not pass through parks or recreational areas.

Two water production wells were identified within 500 feet of the proposed route. A domestic well is located 265 feet north of the route in Section 34, Township 152 N, Range 104 W. Another domestic water well is located 370 feet south of the route in Section 4, Township 151 N, Range 104 W.

The entire proposed Project route is located on private land, and landowner concerns will be addressed during all phases of construction, including final restoration. Land agents assigned to the Project will work closely with landowners and be responsive to issues that may arise during the course of the Project to the extent practicable. Hiland Operating has either obtained or is in the process of finalizing easement agreements with all landowners along the proposed route.

The Project will not transect any Federal highways. One North Dakota state highway (ND Highway 58) will be crossed. Of the three private/oil lease roads crossed, two are improved roads (i.e., gravel) and one is a two-wheel section line trail. The pipeline will cross four gravel county roads.

All improved roads, including gravel roads, will be bored. “Two track” unimproved roads will typically be “open cut,” which is consistent with McKenzie County policies. The road network throughout the Project area is sufficient that suitable alternative routes are readily available.

Road crossings for the route are summarized in Table 3.B.5.

All roads and section line crossings are subject to review and approval by the County Engineer and County Commissions. Applications have been submitted and permits will be obtained for the road crossings before start of construction.

TABLE 3.B.5 – McKenzie County Road Crossings

McKenzie County			
Legal Description	Coordinates	Road Name	Description of Road
West Section 6 T151N R102W	47°55'29.26"N 103°47'30.42"W	Oil Lease Road	Scoria
West Section 6 T151N R102W	47°55'29.8"N 103°47'49.96"W	150 th Ave NW	Trail
East Section 2 T151N R 103W	47°55'38.09"N 103°49'27.12"W	Oil Lease Road	Scoria
West Section 2 T151N R103W	47°55'58.85"N 103°50'24.83"W	152 nd Ave NW	Gravel Road
West Section 3 T151N R 103W	47°56'5.11"N 103°51'13.32"W	Oil Lease Road	Scoria
West Section 3 T151N R103W	47°56'5.14"N 103°51'42.44"W	153 rd Ave NW	Gravel Road
West Section 4 T151N R103W	47°56'4.78"N 103°52'23.54"W	Private Road	Gravel Road
West Section 29 T152N R103W	47°57'3.55"N 103°54'6.29"W	Oil Lease Road	Trail
East Section 31 T152N R103W	47°56'45.13"N 103°54'18.26"W	Oil Lease Road	Trail
West Section 31 T152N R103W	47°56'20.37"N 103°54'54.78"W	Private Road	Gravel Road
East Section 36 T152N R104W	47°56'17.09"N 103°56'11.91"W	36 th St NW	Gravel Road
West Section 36 T152N R104W	47°56'6.45"N 103°56'50.41"W	157 th Ave NW	Gravel Road
East Section 34 T152N R104W	47°56'6.65"N 103°58'8.27"W	158 th Ave NW	Gravel Road
West Section 34 T152N R104W	47°56'6.8"N 103°59'3.2"W	Private Road	Gravel Road

McKenzie County			
Legal Description	Coordinates	Road Name	Description of Road
West Section 34 T152N R104W	47°56'6.7"N 103°59'18.63"W	Private Road	Trail
West Section 33 T152N R104W	47°56'6.84"N 103°59'25.45"W	159 th Ave NW	Gravel Road
East Section 33 T152N R104W	47°56'6.05"N 103°59'55.71"W	36 th St NW	Gravel Road
East Section 4 T151N R104W	47°56'2.01"N 104°0'4.2"W	Private Road	Trail
West Section 5 T151N R104W	47°55'39.19"N 104°1'34.31"W	Private Road	Trail
West Section 5 T151N R104W	47°55'39.24"N 104°1'48.96"W	Private Road	Trail
West Section 5 T151N R104W	47°55'39.24"N 104°1'51.17"W	State Highway 58	Paved Road

B.4 (g) Terrain and Geology

McKenzie County is located in northwestern North Dakota in the Missouri Plateau Section of the Great Plains Province. The Project area lies within the glaciated portion of the Missouri Plateau characterized by thin drift except for valley fill so the topography reflects the pre-glacial topography. Major drainages are the Missouri, Yellowstone, and Little Missouri Rivers. The Missouri River formed when glaciers blocked the northeastward flowing drainages and the diverted drainage flowing southeastward along the margin of the glacier was entrenched in that course after the ice melted. The Little Missouri River flowed northward in the valleys now occupied by Red Wing Creek and Tobacco Garden Creek prior to glaciation. Subsequently it was diverted eastward from Red Wing Creek. Similarly the Yellowstone River flowed through the Charbonneau Creek-Timber Creek Valley prior to glaciation. The process of adjustment to the lowered base level of the Missouri River is developing a band of badlands along these drainages.

The area includes rocks of each of the geologic periods with the thickest accumulations of sedimentary rocks near the center of the Williston Basin. The near-surface sediment is of Recent, Pleistocene, or Tertiary age. Recent sediment consists of alluvium or colluvium which is generally confined to lowland areas of current or Pleistocene drainage. Pleistocene sediments consist of till on the upland areas and water-sorted sediment in and along glacial drainages. Soil horizons have developed on the poorly consolidated Tertiary formations in the unglaciated areas.

The Project will cross the bed of the Missouri Plateau, characterized by low relief and gentle slopes interrupted by buttes and ridges. Surface elevations along the route range from 2195 feet mean sea level (MSL) at approximately the midway point of the pipeline down to 1860 feet MSL at the Yellowstone River according to a 24K USGS TOPO map.

B.4 (h) Soils

Detailed soil characteristics along the Project route were identified and assessed using the Soil Survey Geographic (SSURGO) database (U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), 2003). The SSURGO database is a digital version of the original county soil surveys developed by the NRCS for use with geographic information systems (GIS). It provides the most detailed level of soils information for natural resource planning and management. The mapping scale in the Project area is 1:20,000, with a minimum delineation size of 4.0 acres. SSURGO is linked to an attribute database that gives the proportionate extent of the component soils and their properties for each map unit (USDA, NRCS 1995). The SSURGO database was used to define soil characteristics along the Project route in McKenzie County. SSURGO attribute data consist of physical properties, chemical properties, and interpretive groupings. Attribute data apply to the whole soil (e.g., listed hydric, prime farmland soils, slope class) as well as to layer data for soil horizons (e.g., texture, permeability). The soil attribute data can be used in conjunction with spatial data to describe the soils in a particular area.

The majority of McKenzie County is in the Rolling Soft Shale Plain (Major Land Resource Area 54) of the Northern Great Plains Spring Wheat Region. The project area lies within the Glaciated Missouri Plateau Section of the Great Plains Province.

Wind erosion may be a hazard on most of the soils in the Project area. It is severe on the coarse textured and moderately coarse textured soils. These are primarily the Beisigl, Dooley, and Tally soils. Cabba soil has a relatively high content of lime, making it susceptible to wind erosion in the spring if it has been bare throughout the winter. Because of freezing and thawing, soil structure can break down, resulting in aggregates that are susceptible to movement. Nearly all soils can be damaged by wind erosion if they are not protected by residue.

Water erosion is a severe hazard on gently rolling and steeper soils, such as Beisigl, Cabba, Flasher, Williams, and Zahl. The hazard is greatest when the surface is bare; therefore, the precautions outlined in the EMP found in Tab 5 will be implemented to minimize impacts.

The Project area consists of predominately a fine/silt loam mixed soil, which is well suited for cropland. Tables 3.B.6, 3.B.7 and 3.B.8 list the soil associations, the approximate crossing length of each soil association, and provide a summary of soil limitations for the Project route. Approximately 37 percent of the soils crossed by the Project route (69 acres of the 188 acres within the Project route) are NRCS-classified prime farmland, provided there is sufficient artificial drainage to remove excess surface water.

Potential temporary effects on soil resources include the loss of soil productivity due to erosion, soil mixing, or soil compaction. Soil disturbances associated with clearing, grading and trenching will expose soils to water and wind and increase the potential for erosion. Analysis of STATSGO data indicates that some soils in the Project area are susceptible to erosion by wind. Soil erosion by water is also common along the Project route. During construction, the effects of erosion by water on steep slopes will be mitigated by use of silt fence and other erosion control measures as described in Hiland Operating's EMP (see Tab 5).

TABLE 3.B.6 – Project Area Soil Characteristics

County	Total Project Acres	Prime Farmland	Hydric Soils	Highly Erodible		Shallow to Bedrock (<6")
				Water	Wind	
Acres^a (%)						
McKenzie	188	69 (37)	32 (17)	110 (59)	120 (64)	0 (--)

^a Acreage is based on a 100-foot wide construction right-of-way and does not include access roads, temporary extra workspace, or areas of open water, and does not account for reduced right-of-way widths in wetlands and forested areas.

TABLE 3.B.7 – Project Area Topsoil Depths and Slope Classes

County	Total Project Acres	Topsoil Depth (Inches) ^a				Slope Class (%)				
		0-6	>6-12	>12-18	>18	0-6	>6-9	>9-15	>15-30	>30
Acres^b (%)										
McKenzie	188	3 (2)	23 (12)	1 (1)	160 (85)	120 (64)	15 (8)	6 (3)	0 (--)	45 (24)

^b Defined as depth to soil restrictive layer
^a Acreage is based on a 100-foot wide construction right-of-way and does not include access roads, temporary extra workspace, or areas of open water, and does not account for reduced right-of-way widths in wetlands and forested areas.

TABLE 3.B.8 – Project Area Prime Agricultural Land Topsoil Depths

County	Total Project Acres	Topsoil Depth (Inches) ^a			
		0-6	>6-12	>12-18	<18
Acres^b (%)					
McKenzie	69	0 (--)	0 (--)	0 (--)	69 (100)

^b Defined as depth to soil restrictive layer
^a Acreage is based on a 100-foot wide construction right-of-way and does not include access roads, temporary extra workspace, or areas of open water, and does not account for reduced right-of-way widths in wetlands and forested areas.

Soil productivity could potentially be affected if topsoil were to become mixed with subsoil during construction. To minimize this potential in agricultural land and other areas where soil productivity is an important concern, Hiland Operating will segregate topsoil during trench excavation. In cropland, topsoil will be removed to the depth of cultivation or a maximum depth of 12 inches from the trench and spoil storage area unless otherwise requested by the landowner. Topsoil will be stored

separately from the trench spoil and will be returned to its approximate original location after the trench is backfilled.

The Project construction will cause temporary removal of vegetation and result in exposure of soil. These actions may result in some minor temporary erosion. The re-vegetation of these areas using native species will mitigate these concerns.

Heavy equipment used to construct the Project may cause soil compaction along the ROW. Soils will be tilled with a chisel plow or other deep-tillage equipment to loosen the soil to the extent reasonably practicable. Because the soils of the Project area generally have a high shrink-swell potential, compaction will correct itself over time as the soil goes through wet-dry and freeze-thaw cycles.

B.4 (i) Vegetation and Wildlife

Investigations were conducted on potential Project impacts to wildlife and plant species. Information was gathered from a variety of sources to compile the existing conditions of plant, wildlife, and critical habitats within the proposed corridor. Sources included field surveys, literature reviews, and personal communications with the NDGF, the USFWS, and the NDPRD (which provided information regarding the ND National Heritage Inventory). Field surveys were conducted on foot and via ATV. Field data was collected with Trimble GEOXT 2005 and GEOXH 2008 Series GPS handhelds and photographs were taken along the entire length of the proposed route.

Analysis within the corridor included a complete inspection for species of concern, habitat components required to support species of concern, noxious weeds, and wetlands. The survey area was expanded to encompass nearby areas that may be impacted by the Project. Plant species, noxious weeds, and wildlife species were identified in the field and mapped. Any unknown species were collected and later identified using state-wide literature. Personal communications and knowledge of species and species habitat were used to make a determination regarding the potential effects of the Project.

B.4 (i)(1) Vegetation

Botany surveys were performed along the approximately 14.1-mile-long proposed Project route in McKenzie County during August and September of 2010 and/or May of 2011. The Project route crosses terrain consisting of pasture land, cropland, and wetlands. Blue grama, side-oats grama, crested wheatgrass, needle-and-thread, smooth brome, little bluestem and western wheatgrass were primarily found on prairie flats. Forbs established within the mixed-grass prairie include alfalfa, American licorice, coneflower, prairie smoke, field chickweed, purple coneflower, dandelion, field sagewort, fringed sagewort, goats beard, milkweed, prairie rose, pricklypear cactus, desert biscuitroot, Russian thistle, silver leaf scurfpea, moss phlox, silver sagebrush, sunflower, purple rock cress, white prairie aster, elegant cinquefoil, false pennyroyal and yarrow.

Plant communities established in wetlands include cattail, scouring rush, curly dock, western dock, common reed, prairie cordgrass and reed canarygrass. One area of sensitive plant species containing a mix of *Townsendia exscapa* and *Townsendia hookeri* was identified in the construction ROW, and several areas were observed within the entire survey corridor. See Appendix 4.C.1 – North Dakota Plant Species of Concern.

The primary impact is expected to be the removal of vegetation in the ROW during construction activity. Additional vegetation may be removed in areas where extra workspace is required, such as a road crossing. The area of *Townsendia exscapa* and *Townsendia hookeri* located on the eastern bluff above the Yellowstone River crossing will be marked and fenced prior to construction to assure this area will not be impacted by construction.

In areas that require revegetation, Hiland Operating will specify appropriate seed mixes, application rates, and seeding dates, taking into account the recommendations of appropriate state and federal agencies.

B.4 (i)(2) Wildlife

Wildlife surveys were performed along the 14.1 mile proposed Project route in McKenzie County during August and September of 2010 and/or May of 2011. Keitu environmental field surveyors conducted a thorough inspection of private land consisting of cropland, rangeland, and wetland environment.

Common wildlife identified in the survey corridor included ground squirrels, white-tailed deer, ring-necked pheasants, songbirds, migratory waterfowl and raptors.

Species identified under the ND Game and Fish CWCS included northern harrier and sharp-tailed grouse. See Appendix 4.C.2 – North Dakota Wildlife Species of Concern. No nests were observed associated with the sightings.

Other sensitive species observed within the survey corridor consist of pronghorn antelope. Pronghorn sightings were recorded and data has been distributed to the NDGFD for review and comment. In the event that pronghorn antelope enter the ROW during construction, Hiland Operating will use best management practices including using established road systems or driving vehicles in a predictable manner, to minimize impacts to this species.

Impacts from the Project and human activity during construction will have no significant effects on the State Sensitive Species for North Dakota. The proposed construction activity is scheduled to begin in the third quarter of 2011. Construction operations will occur after breeding seasons, and when migratory species are unlikely to be impacted. Based on the size of the Project's impact and the timing of its construction, while the Project may impact habitat, it is unlikely that the effect will be significant enough to alter a species population.

B.4 (j) Land Use

Approximately 35% of McKenzie County is cropland or pasture, 50% is privately owned rangeland, 5% is federal land, and 10% is other land. The Federal land is administered by the US Department of the Interior – Bureau of Land Management.

Specific to the project area, agricultural production is the predominant land use. Approximately 69% is cropland or pasture, 25% rangeland, and 6% irrigated land. The Project will not be located within any city limits or urban areas.

The primary crops cultivated in the area include wheat, corn and sugar beets. The Project will result in temporary impacts on agricultural land use. Landowners will be compensated for crop loss or

reduced yields caused by construction of the Project. Deep tillage or other measures will be implemented as necessary to mitigate effects of soil compaction.

The only industrial area crossed by the Project route is at each end of the Project where it connects into existing pipeline junctions and the Hiland Operating Rail Terminal. The proposed route runs in the vicinity and sometimes adjacent to existing oil well sites. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments will not be precluded by the Project. After installation of the pipeline, disturbed areas will be restored to preconstruction conditions to the extent reasonably practicable, and will generally revert to preconstruction uses. No long-term change in land use is anticipated.

B.4.k Water Resources

B.4 (k)(1) Ground Water

Ground water suitable for domestic and livestock supplies in McKenzie County is available from three aquifer systems in semi-consolidated rocks of Late Cretaceous and Tertiary age. Ground water from aquifers in unconsolidated sand and gravel of Quaternary age is suitable for domestic, livestock, municipal, industrial, and irrigation uses. Rocks older than Late Cretaceous age extend to 15,000 feet (4,572 meters) and generally contain brackish water that is unsuitable for most purposes.

The Fox Hills and basal Hell Creek aquifer system is used as a source for livestock and domestic supplies. It generally is 1,100 to 1,800 feet (335 to 549 meters) in depth, and the transmissivity is 200 to 300 feet squared per day (19 to 28 meters squared per day). The water is lower in dissolved solids than water in overlying aquifers of Tertiary age and has a median dissolved-solids concentration of about 1,325 milligrams per liter. Wells may yield 100 gallons per minute (6.3 liters per second). Six aquifers, each consisting of 50 to 176 feet (15 to 54 meters) of unconsolidated sand and gravel of Quaternary age, occur in McKenzie County. The sand and gravel could yield 100 to more than 500 gallons per minute (6.3 to 32 liters per second). The water from four of the aquifers generally is a sodium bicarbonate type and has a median dissolved-solids concentration of 1,100 to 2,330 milligrams per liter. Water from the Charbonneau, Tobacco Garden, and Yellowstone-Missouri aquifers is suitable for irrigation.

No sub-surface injection of water is expected for the Project. Any released water will be discharged to surface water, and subject to the requirements of the general NPDES permit issued by the ND Department of Health – Environmental Section.

The Project is not expected to impact North Dakota ground water quality.

B.4 (k)(2) Surface Waters

Topographic maps and current aerial photos were reviewed to identify streams, rivers, and lakes crossed by the Project route. A pedestrian field survey was also conducted in August and September of 2010 and May of 2011 to characterize any surface waters and wetlands that exist in the route of the proposed Project.

The Yellowstone River is classified as a Class I fishery resource. Hiland will comply with the appropriate regulatory agencies in regards to construction methods when crossing the river to protect its status as a Class I fishery resource.

The pipeline also crosses Briar Creek and Fourmile Creek. Hiland may utilize boring techniques when crossing these creeks to minimize disturbance to these areas during construction.

Pipeline construction by creeks will be conducted in accordance with applicable regulatory requirements. No creek will be permanently drained or filled as part of the Project, and effects on creeks are expected to be short-term and minor. Hiland will restore the area to as close to its previous state and naturally functioning condition as possible.

All pipeline construction will occur outside of the fish migration and spawning periods from April 15 – June 1 and appropriate erosion control measures will be installed to reduce sediment transport into waterbodies and wetlands. Implementation of the measures described in Hiland Operating's EMP will provide adequate protection to water resources during construction.

Waterbody crossings are planned to be constructed using either horizontal directional drill (HDD) or open-cut construction techniques, with most waterbodies crossed by the open-cut method.

Construction across waterbodies will require authorization by the U.S. Army Corps of Engineers (USACE). Hiland Operating will be obtaining necessary authorization for water crossings in wetlands and construction will be conducted in accordance with applicable permit conditions. However, preliminary information obtained from the Bismarck District staff indicates the Project may qualify to use the provisions of the "Nationwide 12" USACE-issued utility permit, as long as the provisions of this existing permit are satisfied.

These small waterbodies will typically be crossed by means of the "wet trench" (open-cut) construction technique. In a wet trench crossing, backhoes excavate a trench in the waterbody channel, leaving "hard plugs" of soil in place on each bank of the crossing. When the trench has been excavated and the crossing section fabricated, the hard plugs are removed and the pipe segment is moved into place. The newly installed pipeline is welded in place and the trench is backfilled with native materials or as required by applicable permits.

Temporary, incremental increases in sediment load can be expected downstream of open-cut waterbody crossings during the excavation and backfilling phases of construction. Additionally, some incremental increase in surface run-off sedimentation may be expected to occur at each of the crossings due to the close proximity of exposed soils. No significant or long-term increase in sedimentation is expected from construction of the waterbody crossings.

B.4 (k)(3) Wetlands

Hiland Operating, through its consultants, conducted field wetland delineations to identify wetlands crossed by the Project route. This wetland delineation, in conjunction with aerial photo-based alignment sheets and USGS topographic maps identifying US Corps of Engineers waters of concern within North Dakota, was used to identify wetlands along the Project route as well as within the study corridor. Fifteen wetlands were identified within the Project's corridor. Wetland crossings by legal description were previously presented in Table 3.B.4.

B.4 (k)(4) Water Use

The Project will not significantly affect water use patterns. Following construction, drains, swales, and flowages will be restored to preconstruction conditions to the extent practicable to minimize disruption of water resources.

The Project will require temporary appropriations of water (likely surface water from local reservoirs or the Yellowstone River) for use in the hydrostatic testing of the newly installed pipeline. Additionally, some temporary trench dewatering will be required, particularly during road bores. No significant effect on existing and future water uses is anticipated.

Discharge of water used to hydrostatically test the new pipeline is not expected to have an impact on the environment or receiving waters. The discharge is regulated by the North Dakota Department of Health under a NDPDES general permit issued specifically for temporary dewatering activities including hydrostatic testing and trench dewatering.

B.4 (k)(5) Surface Water Runoff

Potential construction-related effects on surface waters are primarily related to sedimentation from uncontrolled erosion of disturbed areas. Much of the Project route is level or only gently sloping, which limits the potential for runoff effects. Because the ROW will be restored to preconstruction conditions, area runoff following construction will generally reflect surrounding land use.

Hiland Operating will obtain authorization under a general permit for Storm Water Discharges Associated with Construction Activity from the North Dakota Department of Health, which implements a federal program under the Clean Water Act. Hiland Operating's EMP, which was developed in part to meet requirements of this permit, describes best management practices. Hiland Operating, its General Contractor and Project subcontractors will implement measures to minimize off-site erosion from site storm water runoff. These practices will protect surface water and soil resources within the Project area. Hiland Operating's EMP will be included in the construction specifications for the Project and enforced by one or more environmental inspectors during construction.

B.4 (k)(6) Discharges to Surface Waters

During construction, point source wastewater discharge will be generated from hydrostatically testing the new pipeline prior to placing it in service. Discharges will also occur as needed for trench dewatering during construction.

The North Dakota Department of Health has developed the NDPDS general permit, which authorizes the discharge of waters related to temporary dewatering and hydrostatic testing. Hiland Operating is currently evaluating its options to qualify for this permit, or will alternatively apply for a permit specific to its Project.

Testing and discharge is anticipated to be consistent with past practices and experience. Discharges of hydrostatic test water typically are controlled discharges directly to the ground surface or occasionally into Waters of the State. Specific discharge point(s) for hydrostatic test

water for the pipeline have not been determined at this time. The NPDES permit specifies that discharge water must be free from process and other wastewater discharge.

B.4 (k)(7) Protection from Fuel Spills

Construction equipment is expected to be self-propelled and/or motorized and are expected to be powered by gasoline or diesel fueled engines. Fuel for construction vehicles will be used and stored consistent with regulations of the US Environmental Protection Agency in 49 CFR Part 112 for areas with at least 1320 gallons of aggregate storage capacity and/or consistent with the National Fire Protection Association Code 395 for storage and handling of petroleum-based fuels in isolated and/or remote areas. If more than 1320 gallons of oil storage occurs at one area, the contractor will be required to prepare and implement a oil SPCC Plan in accordance with 49 CFR Part 112, including having the plan reviewed and certified as adequate by a registered professional engineer. An oil SPCC Plan outlines required secondary containment measures to be installed around bulk storage containers (i.e., tanks and drums) as well as other oil-handling areas such as unloading and dispensing areas. The Plan also describes response, containment, and cleanup measures. Training requirements of impacted employees are also outlined.

Contractors will be required to provide trained personnel and appropriate equipment and materials to contain and clean up spills of fuel, lubricating oil or hydraulic fluid that result from equipment failure when working in or near wetlands or surface water bodies.

Storage of bulk fuels will not be allowed within 100 feet of an open waterway.

B.4 (l) Cultural Resources

See discussion in Sections B.2.i and B.4.a (1).

B.5 THE CRITERIA TO BE EVALUATED SHALL INCLUDE AT A MINIMUM ALL OF THE FOLLOWING, WHICH ARE WITHIN THE DESIGNATED CORRIDOR:

- Exclusion Areas;
- Avoidance Areas;
- selection criteria;
- policy criteria;
- design and construction limitations; and
- economic considerations

A discussion regarding potential impacts and mitigation measures relevant to the six criteria cited above are provided in Section B.4. Below is a discussion of additional mitigation measures Hiland Operating will employ.

B.6 MITIGATION MEASURES

B.6 (a) Measures to Preserve the Human Environment

Hiland Operating will require its construction contractor to clean up personal litter, bottles and paper deposited by ROW preparation and construction crews on a daily basis. Waste and scrap that is the

product of Project construction will be removed and properly disposed of in accordance with applicable regulations before construction is completed.

To the maximum extent practicable, Hiland Operating will minimize noise and dust resulting from construction near residences and/or businesses.

Prior to construction, Hiland Operating will obtain any applicable permits for road crossings from McKenzie County. Hiland Operating will also obtain permission from all owners of private roads, including oil lease roads, to cross said roads. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. Paved roads will be bored, which will minimize interference with traffic flow caused by construction activities, as required by state and county regulations.

B.6 (b) Measures to Protect Terrain and Geological Resources

Hiland Operating will, to the extent reasonably practicable, restore the area affected by Project construction to the pre-construction condition. Restoration will be compatible with the safe operation, maintenance, and inspection of the Project.

To the maximum extent practicable, Hiland Operating will restore the construction area to pre-construction contours. Measures such as slope breakers, erosion control blankets and re-vegetation will be employed to maintain the stability of slopes along the ROW. No crown of backfill material will be left over the trench in wetlands.

Fuel and all other hazardous materials will be stored in accordance with the requirements of Contractor's oil SPCC Plan, if applicable. An oil SPCC Plan describes response, containment, and cleanup measures. However, even for small quantities of oil-based liquids, containers and fueled equipment will not be stored within 100 feet of surface water.

B.6 (c) Measures to Protect Soils

Hiland Operating will implement temporary and permanent erosion control measures as specified in the EMP (Tab 5 and Tab 6). The EMP will be included in contract documents and enforced throughout construction of the Project.

Temporary erosion and sedimentation control measures may include installation of silt fence, straw bales, slope breakers, trench breakers, erosion control fabric and mulch.

To minimize potential impacts on soil productivity, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and if applicable, other areas where soil productivity is an important consideration. Unless otherwise requested by the landowner, topsoil in cropland will be removed to the depth of cultivation or a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location. Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of compaction occur in agricultural lands, a chisel plow or other deep tillage equipment will be utilized to loosen the soil to the extent reasonably practicable.

Hiland Operating will retain environmental inspectors to monitor the contractor's compliance with applicable requirements to protect soil resources during construction of the Project.

B.6 (d) Measures to Protect Vegetation and Wildlife

Hiland Operating will clear the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the Project.

Utilizing the measures discussed in Section B.4.b (1) above, Hiland Operating and its contractors will effectively control or limit the spread of invasive plant species through control treatments and avoiding existing populations where possible. Treatments will be initiated prior to pipeline construction to lessen the potential for this activity to disperse propagules along the freshly disturbed route. Monitoring and treatment will then be conducted on an annual basis to ensure a high degree of control and maximize treatment effectiveness.

In areas that require permanent revegetation, Hiland Operating will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests. In non-agricultural areas, vegetation cleared from extra workspace will be allowed to revegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated.

Hiland Operating will take appropriate precautions to protect livestock and crops affected by construction. Operation of the Project is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by Hiland Operating in a manner compatible with the safe operation, maintenance, and inspection of the Project and in accordance with the Commission's tree and shrub mitigation specifications.

B.6 (e) Measures to Protect Land Use

Hiland Operating will obtain and comply with applicable county permits regulating zoning and land use. Per prior discussion with the McKenzie County staff, these permits will include a Pipeline Utility Permit and Road Crossing Permit. Hiland Operating will retain one or more environmental inspectors to monitor compliance with environmental conditions of county permits.

Hiland Operating will repair surface drains disturbed during ROW preparation, construction and maintenance activities. Hiland Operating will repair private roads and farm lanes damaged when moving equipment or when obtaining access to the ROW. Hiland Operating will repair or replace fences and gates removed or damaged as a result of ROW preparation, construction or maintenance activities.

The Project pipeline will be installed at a minimum depth of 48 inches from the surface contour to minimize the potential for environmental damage resulting from deep tillage activities unless modified to accommodate special construction issues at the site.

Shelter belts and trees will be avoided by Hiland Operating to the extent possible in a manner compatible with the safe operation, maintenance, and inspection of the Project.

B.6 (f) Measures to Protect Water Resources

Hiland Operating will obtain applicable permits for water appropriations related to hydrostatic testing and trench dewatering. Environmental inspectors will monitor compliance with applicable waterbody and wetland protection requirements during construction of the facilities.

Water appropriations for hydrostatic testing will be conducted in accordance with applicable permits. Hiland Operating will conduct trench dewatering and hydrostatic test discharges in a manner consistent with a NPDES permit issued by the ND Department of Health. Hiland Operating's EMP describes best management practices that will be implemented to minimize off-site erosion from surface water runoff, and protect water and soil resources within the Project area.

Much of the concerns associated with the quality of the water being discharged are addressed by the fact that no additives to the water are permitted unless written approval is received from Hiland Operating and applicable permits authorize such additives. Environmental inspectors will monitor compliance with permits. Where appropriate, water will be discharged into an energy dissipation and/or filtering device to remove sediment and to reduce the erosive energy of the discharge.

B.6 (g) Measures to Protect Cultural Resources

An "Unanticipated Discovery Plan" has been developed should unexpected artifacts be uncovered during Project construction. The plan has been sent and approved by the SHPO.

Unanticipated Discovery Plan

In order to minimize the potential for the accidental discovery of cultural resources, Hiland Operating conducted intensive pedestrian inventories along the entire proposed Project route. To ensure that Hiland Operating maintains full and complete compliance with all Federal and State regulations concerning the protection of cultural resources, an Unanticipated Discovery Plan has been prepared for the Project. Construction may result in the discovery of unanticipated cultural resources, or of cultural resources in areas where they were not expected to occur.

All inspectors have the responsibility to monitor the construction of sites for potential archaeological remains throughout construction. If, during the course of construction, sites for potential cultural resources are identified, the Environmental inspector will immediately stop tasks in the vicinity of the potential find and make work stoppage recommendations to the Construction inspector. Should a work stoppage authority be deemed necessary, Hiland Operating will notify the SHPO and will inform the archaeological consultant who will survey the site and provide an immediate verbal report to Hiland Operating and the SHPO. Hiland Operating will continue to consult with the SHPO as per the requirements of Section 106 of the National Historic Preservation Act (NHPA). The contact is:

Paul R Picha, Chief Archeologist
North Dakota State Historic Preservation Office
State Historical Society of North Dakota
612 East Boulevard Avenue
Bismarck, North Dakota 58505-0830
(701) 328-3574

If the unanticipated discovery is determined to be not eligible for inclusion on the NRHP, Hiland Operating will proceed with the Project following written concurrence from the SHPO. If the site is determined to be potentially eligible for inclusion on the NRHP, additional work such as a Determination of Eligibility of Data Recovery will be performed as required/approved by the SHPO. Further work at the site will be suspended until all criteria of Section 106 of the NHPA and other Federal and State regulations have been successfully completed.

If human remains and/or a burial are encountered, these remains, features and any associated artifacts shall be left undisturbed, work at the site of discovery shall cease immediately, and the site shall be secured from further trespass. Hiland Operating shall immediately contact the SHPO and local law enforcement and shall not resume work at the site until further notice from the SHPO per North Dakota Century Code, Section 23-06-27 – Protection of human burial sites, human remains and burial goods, and North Dakota Administrative Code, Chapter 40-02-03 – Protection of Prehistoric and Historic Human Burial Sites, Human Remains, and Burial Goods.

Under no circumstances should human remains be removed from the site without completing all coordination processes with the local law enforcement agency, medical examiner, the SHPO and Native American representatives, as appropriate. Further work at the site will be suspended until all criteria of Section 106 of the NHPA and other related state and Federal regulation have been successfully completed.

B.7 QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

The qualifications of the personnel who contributed to the route application include:

(1) Kent Christopherson, Vice President/Chief Operations Officer – Hiland Partners, LP

Degree: Bachelor of Science – Mining Engineering & Geology, South Dakota School of Mines and Technology
Master of Business Administration – Nova Southeastern University

Experience: 32 years in petroleum transportation field

Qualifications: Certified Maintenance & Reliability Professional by the Society of Maintenance & Reliability Professionals, Certified Lubrication Specialist by the Society of Tribologists & Lubrication Engineers

(2) Michael S. Higgins, Director-Project Management – Hiland Operating, LLC

Degree: Bachelor Business Administration – Kennedy Western University

Experience: 17 years in petroleum transportation field

(3) Kathleen Spilman, Managing Director – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Chemical Engineering, University of North Dakota
Masters in Management, University of Mary

Experience: 31 years experience in petroleum refining and fuels transportation field as well as regulatory affairs and compliance.

Professional License

Registered Professional Engineer: North Dakota, South Dakota, Montana

(4) Jeremiah Trnka, Staff Engineer (Environmental) – Keitu Engineers & Consultants, Inc.

Degree: Master of Environmental Engineering, Washington State University
Bachelor of Fisheries and Wildlife Biology, University of North Dakota

Experience: 2 year experience in regulatory affairs and 2 years experience with North Dakota Game and Fish

Other Training: Intro to ArcGIS I and II, and Field GIS/GPS Mapping -- South Dakota School of Mines & Technology

(5) Heather Jandt, Specialist (Biology) – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science, Major Biology, Dickinson State University

Experience: 5 years experience in regulatory affairs and compliance.

Other Training: Western Missouri State University – Global Positioning and Mapping
US Army Corps of Engineers Wetland Delineation Training

(6) Michael Pederson, Natural Resource Specialist – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science, Natural Resource Management, Minor: Zoology/Range Science

North Dakota State University

Experience: 5 years experience in field technical services and regulatory affairs

Other Training: Emphasis: Biotic Resources

(7) Kristi Eng, Staff Consultant – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science in Biology / Minor in Environmental Studies
University of North Carolina - Wilmington

Experience: 3 years experience in regulatory affairs and legal support services

Other Training: Conservation Biology, Tree and Foliage, US Army Corps of Engineers
Wetland Delineation Training

B.8 MAPS

See Tab 4, Figure 4.B, for the Project Mapbook and Tab 7 for ESRI software "shapefiles".

B.9 OTHER MATTERS

The information provided below is in accordance with North Dakota Century Code Sections 49-22-08.1(1)(e), (1)(f), and (1)(g).

B.9 (a) Right-of-Way Preparation, Construction and Reclamation Procedures

Critical safety aspects of pipeline installation are governed by US DOT regulations subject to the jurisdiction of PHMSA, which has tended to standardize installation techniques. The advance of technology has introduced significant improvements in the techniques and equipment available to install underground pipelines, reducing both the time required and the size or "footprint" of impact.

Final construction techniques will be determined after Project contractors have been engaged. Construction of the pipeline will most likely follow standard techniques employed by other projects installed in North Dakota, such as Dakota Gasification Company's 14-inch CO₂ pipeline and Enbridge Pipeline's pipeline projects. Essentially an outdoor assembly line, the major steps of ROW preparation, pipeline construction, and reclamation typically include: (1) survey and staking of the right-of-way; (2) clearing; (3) front-end grading; (4) right-of-way topsoil stripping; (5) pipeline route staking; (6) pipe stringing; (7) pipe bending; (8) pipe alignment and initial weld; (9) fill and cap with final weld; (10) as built footage; (11) x-ray inspection and weld repair; (12) coating field welds and coating inspection; (13) trenching; (14) lowering pipe into trench; (15) as-built survey; (16) pad, backfill to rough grade; (17) hydrostatic testing and system tie-in; (18) clean-up; and (19) restoration and re-vegetation.

B.9 (a)(1) Survey and Staking

Before construction, Hiland Operating crews will survey and stake the centerline and exterior boundaries of the construction ROW. The exterior boundary stakes will mark the limit of approved disturbance areas, which will be maintained throughout the construction period. The North Dakota One Call system will be contacted to identify and mark the locations of underground utilities in the construction corridor. During this period, equipment involved in Project construction will be moved onto the ROW using existing roads for access wherever practicable.

B.9 (a)(2) Clearing

Hiland Operating will clear the 125-foot-wide ROW of shrubs and trees. The clearing crew will typically mow, chip, mulch and/or haul off all non-merchantable timber. Burning of non-merchantable wood may be allowed when the contractor has obtained the necessary permits and approvals. All merchantable timber will be property of Hiland Operating unless other arrangements are made with the landowner.

B.9 (a)(3) Grading

Following clearing, grading of the ground surface may be done to provide a relatively smooth working surface and a safe working area. Typically, a 10-foot-wide buffer will be left relatively undisturbed.

B.9 (a)(4) Topsoil Stripping

Topsoil will be stripped and segregated in agricultural areas, cropland, hayfields, pasture, residential areas, and other areas as requested by the landowner along the Project route in accordance with Hiland Operating's EMP. In unsaturated wetlands, a maximum of 12 inches of surficial soils will also be stripped from the trench areas. Topsoil will be stripped to the depth of cultivation or a maximum depth of 12 inches in cultivated lands.

B.9 (a)(5) Pipeline Route Staking

Once the topsoil has been stripped and stockpiled, the route will be resurveyed and the Project route staked.

B.9 (a)(6) Pipe Stringing

Before excavating pipeline trenches, individual joints of pipe will be strung along the construction right-of-way and arranged to be accessible to construction personnel. This operation typically involves specially designed stringing trucks to deliver pipe from pipe yards to the ROW. Small portable cranes and/or side-boom tractors are used to unload the stringing trucks and place pipe along the ROW.

B.9 (a)(7) Pipe Bending

A mechanical pipe bending machine will bend individual joints of pipe to the desired angle to accommodate natural ground contours or pipeline alignment. In certain areas, prefabricated fittings will be used where field bending is not practicable.

B.9 (a)(8) Pipe Alignment and Initial Weld

After stringing and bending are complete, pipe sections will be aligned and placed on temporary supports located adjacent to the proposed trench locations. Pipe ends will be attached to each other using short welds.

B.9 (a)(9) Fill and Cap Segment Welds

Final welds will be completed around the entire circumference of the pipe joints in compliance with applicable industry standards and PHMSA requirements.

B.9 (a)(10) As-built Footage

Once welding is complete, Hiland Operating will compare the as-built condition and length of the pipe with construction drawings. Documents will be edited to reflect impacts of field decisions as

well as final locations of lateral tie-in points, other pipeline apertures and cathodic protection connections.

B.9 (a)(11) X-Ray Inspection and Weld Repair

PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing. Testing will also include checking coating integrity. Initially, Hiland Operating will engage a third-party inspection service provider meeting US DOT certification requirements to perform X-ray inspections of 100% of the welds. Only after adequate performance has been established based on statistically significant data, and each of the Project's welders has demonstrated proper weld material handling, will a reduction in the percentage of welds inspected be considered; however, the percentage of welds inspected will never fall below the requisite 10%. When welds are deemed inadequate, appropriate repairs will be made consistent with US DOT PHMSA regulations and re-inspected. Inspection records will be cross-referenced against the final "as-built" footage of the pipeline.

B.9 (a)(12) Coating and Coating Inspection of Field Welds

The pipe is typically delivered with a factory coating of fusion-bonded epoxy or similar material to prevent corrosion. Hiland Operating will apply coating at welded joints and will electronically inspect the pipeline coating before the pipe is lowered into the trench.

B.9 (a)(13) Trenching

Backhoes and/or ditching machines will be used to excavate trenches in accordance with PHMSA regulations, which require a minimum thirty inches of cover for normal excavations and 18 to 30 inches of cover in rocky areas. The trench walls will generally be kept vertical to the extent practicable and the trenches will typically be 4 to 8 feet wide, but may be wider in less stable or saturated soils.

Where trench dewatering is needed, water will be discharged directly to the ground if there is adequate vegetation along the ROW to filter the water effectively. Where vegetation is sparse or absent, or in environmentally sensitive areas (e.g., adjacent to waterbodies or wetlands), straw bale dewatering structures or suitable filtering alternatives will be used to minimize siltation in adjacent waterbodies.

B.9 (a)(14) Lowering Pipe Into Trench

After welding and coating are completed and the trench is excavated, the pipe will be lowered into the trench by side-boom tractors.

B.9 (a)(15) As-Built Survey

A survey of the final location of the pipeline will be made.

B.9 (a)(16) Pad and Backfill to Grade

Bladed equipment or a specially designed backfilling machine will be used to backfill the trench to the approximate ground surface elevation. This generally consists of replacing the material excavated from the trench. In areas where topsoil has been segregated, subsoil will be replaced first, and topsoil will be spread uniformly on top. Directly above the pipeline, an excess of soil or “crown” will be placed to allow for future settling, excluding wetlands.

Construction debris, including wooden supports, welding rods, containers, brush, trees, or refuse of any kind, will not be permitted in the backfill. If an excessive amount of rocks are present in the backfill, the pipeline will be protected with rock shield or similar protective coating and/or backfilled with clean padding prior to backfilling with the rocky material.

B.9 (a)(17) Hydrostatic Testing

After backfilling, Hiland Operating will hydrostatically test the pipeline in accordance with the PHMSA regulations to ensure that the system is capable of operating at the design pressure. The testing process will involve filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time.

The length of individual test segments will be determined by topography and water availability. Water withdrawals used to fill and test the pipeline will be consistent with state regulations and Hiland Operating’s EMP. Hiland Operating will obtain hydrostatic test water from major waterbodies in the area of the proposed Project and/or municipal or permitted sources near the Project route. Adequate flow will be maintained to protect aquatic life and allow for downstream uses. The test water will be discharged through energy dissipation devices to the ground surface or to a nearby waterbody. These discharges will be done in accordance with Hiland Operating’s EMP and permits issued by the state agencies.

B.9 (a)(18) Cleanup

Cleanup involves removing construction debris (including litter generated by construction crews and excess rock) and replacing fences removed during construction. In addition, extraneous material that would impede seed bed preparation will be removed from the ROW. Fences that are removed to install the pipeline will be reconstructed across the ROW.

B.9 (a)(19) Restoration and Revegetation

Following installation and final cleanup of the Project construction area, original grade and contours will be restored to the extent practicable and temporary and permanent erosion controls will be installed. Disturbed areas will be revegetated in accordance with permit requirements, agency input, and site-specific landowner requests.

B.9 (b) Landowner Issues

B.9 (b)(1) Procedures for Landowner Relations

Hiland Operating has either obtained or is in the process of finalizing easement agreements with all landowners along the proposed route. Construction will occur after this year's harvest and prior to next spring's planting season, minimizing impacts to agriculture. Landowners have been advised to expect Project construction to begin in September 2011 and that survey crews will be working along the Project route just prior to and during construction.

Once the necessary permits have been acquired, a brief description of the Project will be mailed to landowners. Hiland Operating is committed to giving landowners complete information about the Project and keeping them informed throughout construction. Hiland Operating, through its land agents, has personally contacted landowners to discuss methods of calculating damage settlements and tenant's rights, and to address any unique property concerns. Land agent contact information has been provided to all landowners in the event questions or concerns arise in-between written correspondence or scheduled meetings.

B.9 (b)(2) List of Landowners

By use of county records, a current list of landowners was generated and used to contact residents regarding the Project. In addition to landowners, all known tenant farmers in the construction area have been notified of the Project. A list of landowners and tenants who have been contacted regarding the Project is provided in Tab 4, Appendix 4.B.

B.9 (c) Operations and Safety

B.9 (c)(1) Pipeline Operation and Control

Hiland Operating's Control Center is monitored by pipeline operators 24 hours a day. The Control Center also serves as an emergency center to receive calls from employees, the public or public officials reporting unusual conditions or pipeline failures.

A Supervisory Control and Data Acquisition (SCADA) telemetry system provides 24-hour monitoring of the pipeline and pump operations, including pressures, temperatures and flow rates. The SCADA system enhances immediate response capability to any potential problems. The Project is also designed to accommodate an instrumented internal inspection device to detect and record the type and location of corrosion or other defects for long-term monitoring of the pipeline integrity.

B.9 (c)(2) Communications Capabilities

Land-lines and satellite communications are used to exchange the necessary computerized data for pipeline monitoring and control. Hiland Operating uses cellular phones as needed to facilitate personnel communications during operation, maintenance, or emergency activities.

B.9 (c)(3) Protection of the Pipe from Damage

Hiland Operating has an aggressive program in educating excavators and the public about the presence of the Project and preventing damage to the Project from excavating equipment. Hiland Operating has joined and supports the North Dakota One-Call system.

The pipeline is protected from corrosion in a number of ways. The pipeline is covered with a protective coating. In addition, all buried or submerged metallic structures (pipeline systems) are under a cathodic protection system, as required by PHMSA regulations.

B.9 (c)(4) Inspections

Hiland Operating conducts routine inspections of the Project to determine that the system is operating properly, in compliance with PHMSA regulations.

Each calendar year (not to exceed a 15-month interval), the cathodic protection system is monitored by taking pipe/structure-to-soil and line current (where possible) readings. Additionally, each rectifier and anode groundbed used to impose cathodic protection on the pipeline is inspected to ensure proper operation. Repairs and adjustments to the cathodic protection system are either made during the annual survey or during later maintenance activities. At least six times per year, each rectifier and critical cathodic protection interference bond to foreign structures is inspected and corrective measures are taken, if needed.

Hiland Operating also periodically evaluates the effectiveness of its cathodic protection system by conducting supplemental close interval surveys (e.g., close interval pipe to soil, etc.) of the system.

The Hiland System rights-of-ways that are designated Class 1 are patrolled via foot patrol annually. Road crossings and Rail Crossings are inspected via foot patrol semi annually. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the route of the line.

Isolating valves are checked at least twice per year to ensure proper operation. In the event of a leak, it is important for valves to close properly to isolate the section of pipeline and minimize the amount of NGLs that may escape. Other components of the Project, such as tanks and pump stations, are also routinely inspected.

Hiland Operating periodically inspects the pipeline internally with an electronic inspection tool called a caliper pig. These devices travel through the inside of the pipeline and either mechanically, ultrasonically, or magnetically examine the condition (dents, gouges, corrosion, or cracks) of the pipe by on-board computers. Results of the inspection are then analyzed, and the pipe inspected to verify preliminary findings and then repaired as required.

All overpressure safety devices capable of limiting, regulating, controlling, and/or relieving operating pressures are inspected and tested to ensure the devices are in good mechanical condition and functioning properly.

Periodically, government officials inspect Hiland Operating's compliance with applicable government regulations. Inspections of Hiland Operating's written procedures, records, and facilities are routinely conducted by the PHMSA.

B.9 (c)(5) Maintenance

Many other maintenance activities are performed on the pipeline and related facilities. Hiland Operating has a comprehensive preventative maintenance program that meets and, in many cases exceeds, minimum federal safety standards set forth in PHMSA regulations, including 49 CFR Part 195. When facilities are added or replaced, there are comprehensive standards for their design and installation in both Hiland Operating procedure manuals and contract specifications. Repair pipe is pre-tested and other components used to repair the pipeline meet national standards and regulatory requirements. Other procedures, such as welding procedures, movement of the pipe, coating repair, corrosion control, and tank maintenance are all guided by written procedures which have been reviewed by the PHMSA inspectors.

B.9 (c)(6) Training of Personnel

Hiland Operating has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by the PHMSA under 49 CFR Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through review of job performance, periodic pipeline control system simulators, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

B.9 (c)(7) Public Awareness Program

Hiland Operating conducts a public education program to ensure that the affected public (those who work and live along the Project), excavators, local public officials, and emergency units of government are aware of how to recognize and avoid or respond to a pipeline emergency. Hiland Operating has also been active at the local, county, and state level in emergency response planning and joint training/exercises to prepare all potential responders to deal with emergencies.

The Project route is marked at all public road and railway crossings (at a minimum) to increase the public's awareness of the underground pipeline. Additional markings are posted at valves, other pipeline facilities, and stations along the Project route.

B.9 (c)(8) Emergency Preparedness

Hiland Operating's operating and maintenance practices are aimed at preventing emergencies on the Project. However, it is imperative that Hiland Operating be prepared to respond to an emergency should one occur. In addition to preventative activities described above, Hiland Operating's emergency response program includes pre-planning, equipment staging, notifications, and emergency and leak containment procedures and engaging the services of area contract spill responders. Oil SPCC Plans have been prepared for all North Dakota transportation and non-transportation related storage and use facilities with aggregate storage capacities in excess of 1320 gallons. The emergency response plan has been submitted and approved by PHMSA as required by 49 CFR Part 194.