



NORTH DAKOTA PUBLIC SERVICE COMMISSION

**APPLICATION OF
ENBRIDGE PIPELINES (NORTH DAKOTA) LLC
for
ROUTE PERMIT**

**LITTLE MUDDY STATION CONNECTION PROJECT
November 2011**

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**APPLICATION FOR ROUTE PERMIT
SECTION A
DESCRIPTION OF PROPOSED FACILITY**

A.1 TYPE OF FACILITY

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.1 of the Corridor Certificate portion of this Application.

A.2 PRODUCT

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.2 of the Corridor Certificate portion of this Application.

A.3 SIZE AND DESIGN

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.3 of the Corridor Certificate portion of this Application.

A.4 TIME SCHEDULE

This is a Consolidated Application for a Corridor Certificate and Route Permit. These matters are discussed in Section A.4 of the Corridor Certificate portion of this Application.

APPLICATION FOR ROUTE PERMIT
SECTION B
LOCATION

B.1 APPLICANT'S POLICIES AND COMMITMENTS TO LIMIT ENVIRONMENTAL IMPACT

EPND conducts its business with the environment in mind. The Environmental Policy guides EPND's actions and makes protecting the environment an integral element in the conduct of Company business. The Environmental Policy is a component of Enbridge's overall Corporate Social Responsibility ("CSR") practices. EPND's performance assessment, like other Enbridge business units, is based on its compliance with the Environmental Policy and other CSR practices and is detailed in an annual CSR report. Environmental protection efforts will span the entire project, from planning through construction, restoration, and into commissioning and operation.

B.1.a Construction

The Little Muddy Station Connection Project ("Project") involves constructing approximately 6 miles of 10-inch-diameter pipeline from a new station (Little Muddy Station) to EPND's East Fork Station in Williams County, North Dakota. Construction will result in temporary short-term impacts along the pipeline route. Construction of the Little Muddy Station will result in the conversion of approximately 18 acres of land from an agricultural to an industrial land use. As shown on the maps in Exhibit B, there will be no permanent wetland impacts as a result of the station construction.

Planning, design, construction, and restoration will incorporate the equipment and mitigation measures discussed in Section B.6. Environmental monitoring will be conducted during and following construction. An EPND designated Environmental Representative will monitor compliance with required environmental protection measures, permit conditions, and specifications, and provide ongoing oversight for day-to-day issues that may arise during construction. The designated Environmental Representative will be trained and well-versed in the implementation of environmental Best Management Practices (BMPs) to be utilized throughout construction. Contract specifications will incorporate environmental protection and mitigation measures. Contractors will be obligated to implement these measures in the field. EPND will provide contractor training and project orientation.

Except for road crossings, the entire pipeline route is located on privately owned land. Landowner concerns will be addressed during all phases of construction, including final restoration. EPND's Project-land agents will work

closely with landowners to negotiate agreements and respond to issues that may arise during the project.

Environmental data collected to date includes information on soils, land use, wetland and waterbody crossings, protected species, and cultural resources. EPND has also conducted various field studies, detailed in Route Permit Sections B.2 and B.4 and Corridor Certificate Section B of this consolidated Application. EPND will continue to gather comprehensive information during the permitting process and work with the appropriate regulatory agencies.

B.1.b Ongoing Pipeline Operation

The pipeline is a permanent, ongoing interstate common carrier transportation pipeline system; as such, EPND has a continuing commitment to conduct its operations in an environmentally responsible manner and in accordance with national codes and standards, federal pipeline safety rules promulgated in 49 CFR Parts 194 and 195 and extensive EPND Operating and Maintenance Procedures and Emergency Response Plan. Substantial, continual effort is placed on pipeline integrity, operational safeguards, emergency response, and public awareness, all of which reduce the impact of the pipeline to the local and regional environment. EPND also dedicates internal environmental staff to monitoring compliance with company policy, as well as various federal and state environmental regulations and permits. EPND maintains a review program to ensure policies and procedures are effective and comply with applicable permit requirements. Additional discussion on operations and safety is provided in Section B.9.c.

B.1.c Energy Conservation Considerations

Energy conservation is a major concern for EPND since energy/power costs represent the largest single recurring expense in pipeline operation. Managing energy costs, including energy conservation, is a high priority for operation of EPND's pipeline system.

EPND works closely with its individual energy providers to assure economical and efficient power use for its North Dakota pipeline system. EPND also reviews and tracks firm and non-firm power requirements, and works closely with electrical utilities in planning for transmission and generation needs.

EPND's energy conservation goal is to minimize power/energy unit costs through the implementation and continued improvement of internal programs directed at efficient energy use. EPND has considered several energy efficiency and conservation programs. The following provides a brief explanation of the programs reviewed during the Project development phase:

B.1.c.(1) Pipeline Diameter

EPND will construct approximately 6 miles of 10-inch diameter pipeline. EPND considered an 8-inch diameter pipeline in its engineering analysis; however, the crude oil volumes forecast and associated pressure requirements warranted the 10-inch diameter pipe. EPND considered using an even larger diameter pipe. However, the 10-inch diameter pipe will provide up to 70,000 bpd capacity (with future upgrades), which equates to sufficient volume expectations in this area.

B.1.c.(2) Variable Frequency Drives (VFDs)

For approximately 16 years, Enbridge has installed variable frequency induction motor drives. VFDs allow the pipeline operator to vary the pump rotation speed, resulting in greater pressure production control to match the desired flow rate. This eliminates the need to dissipate or waste pressure (energy) with pressure control valves (PCVs). VFDs, however, do introduce energy losses. Therefore, they are considered only when there is a range of operating conditions (primarily flow rate, density and viscosity) that would require frequent dissipation of pressures produced by the pumps. Ideally, given consistent operating conditions, the pump would deliver constant pressures eliminating the need for pressure dissipation. Therefore, operating conditions play a key role in designing the pumping stations for optimum efficiency.

VFDs will be specified to control the operating speed of the new mainline pumps being installed at the Little Muddy Station.

B.1.c.(3) Pipeline Control Center

EPND pipeline 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 an optimum flow rate using efficient combinations of pumps which minimizes energy consumption. Operators are able to start and stop pumps and monitor pipeline operating conditions, resulting in an energy efficient operation.

B.1.c.(4) Energy Efficient Pumps and Motors

For new installations, EPND purchases high efficiency pumps and motors at a premium initial cost in an effort to conserve long range energy requirements. Specifically, a high polish is used on the pump impeller, and motors are custom designed for high efficiency. For example, a fully loaded 2,500 horsepower pump and motor unit, operating 300 days per year at 80% efficiency will consume 17 million kilowatt hours (kWh) of energy annually and sets a demand of 2,331 kW. Increasing the efficiency

by only 1% translates into 170,000 kWh of energy savings. With this substantial potential for energy savings, it is desirable to optimize efficiency. Pumps are hydraulically designed and selected to obtain a high best efficiency point (BEP) at the desired flow rates. The forecasts are continually evaluated. If the flow rate is outside the BEP range, impeller changes are typically implemented for improved efficiency.

B.1.c.(5) Electric Service Agreements

When applicable, EPND works with its various energy providers to renegotiate new electric service agreements and will continue to do so to meet the needs of the Project's new facilities.

B.1.c.(6) Drag Reducing Agents (DRA)

Prior to each project over the last 11 years, Enbridge determines whether DRA should be incorporated into a project to provide additional efficiencies. Injection of DRA reduces flow turbulence of liquid hydrocarbons, resulting in reduced pressure loss between stations. This allows a high flow rate (increased throughput) at the same operating pressure, or a decrease in operating pressure while maintaining flow rate. These two scenarios allow increased throughput or decreased power use. The flexibility furthers EPND's opportunities to shift power use to improve economics or accommodate utilities. In these cases, the economic benefits realized with the implementation of the DRA program have outweighed the material cost of the DRA. As a result, lower unit energy costs and greater efficiency have occurred.

In addition, during high throughput periods, 23% of our power is supplied on a non-firm basis which has reduced utility needs to add generation and transmission. Overall utility load factors and utilization of assets have improved, benefiting all regional electric customers.

B.2 DISCUSS THE FACTORS LISTED IN SECTION 49-22-09 NDCC TO AID THE COMMISSION'S EVALUATION OF THE PROPOSED PIPELINE ROUTE

Factors which the North Dakota Public Service Commission (ND-PSC or Commission) considers in evaluating the designation of corridors and routes include the following:

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 pipeline on public health and welfare, natural resources, and the environment is included in Section B.4. Research and investigation related to these effects have included thorough cultural resources reviews, wetland delineation surveys, protected species and sensitive areas reviews, and raptor nest surveys.

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 that are expressly designed to minimize adverse environmental effects. As described in EPND's Environmental Mitigation Plan (EMP), current construction techniques and mitigation measures will be employed to minimize the effect of construction on environmental resources. EPND's EMP is provided as Exhibit E. These measures are also discussed in Sections B.6 and B.9 of this Route Permit Application.

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

The Project does not involve new energy conversion facilities; no usable waste energy will result from the Project.

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 short-term or temporary effects on vegetation, wildlife, agricultural operations, and transportation, as described in Section B.4. EPND will implement mitigation measures to minimize these impacts as described in Section B.6 and in EPND's EMP (see Exhibit E).

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

EPND considered various alternatives during Project development as discussed in Section C.2 of the Application for Certificate of Corridor Compatibility.

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

Upon ND-PSC approval, approximately 18 acres of agricultural land will be converted to industrial land (at the proposed Little Muddy Station). According to the USDA 2007 Census of Agriculture, there are over 1.14 million acres of farmed land in Williams County. As such, the acreage to be converted to an industrial land use represents a negligible percentage of all agricultural land in the county.

No wetlands or waterbodies will be permanently impacted as a result of the Project. Only minimal irreversible or irretrievable commitments of natural resources will result from the Project. EPND will implement mitigation measures to minimize these impacts as described in EPND's EMP (see Exhibit E).

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

B.2.g.(1) The Project presents an opportunity for EPND to meet the immediate and future transportation requirements of its shippers in the most timely and effective manner.

B.2.g.(2) The Project has significant economic benefits

The Project has significant economic benefits, including:

- Minimizing the discount of Williston basin supplies by providing adequate pipeline capacity to producers.
- Providing a stable source of crude oil supplies to the PADD II refineries and supporting a healthy economic environment throughout the entire Upper Midwest.
- Providing an increase of approximately \$410,000.00 in property taxes.

B.2.g(3)EPND is solely a transportation company

EPND owns and operates a non-shipper-owned liquid hydrocarbon pipeline system. EPND does not own any of the crude petroleum transported in its pipeline system. EPND does not determine markets or destinations for the crude oil transported. EPND provides a service which is available to anyone tendering commodities for transportation pursuant to tariffs published and on file with the Federal Energy Regulatory Commission (“FERC”) and in accordance with their rules and regulations and the Interstate Commerce Act on its interstate pipeline system, including the facilities in this Project. EPND attempts to anticipate the need for additional pipeline capacity by relying upon forecasts for throughput generated by shippers on the system.

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

EPND is not aware of other plans for development by state, local or governmental entities at or in the vicinity of the project corridor that may conflict with the presence of the pipeline facilities.

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

Regarding existing scenic areas, the Project area is located in a part of North Dakota that is flat or rolling farm fields or original prairie, with no mountains, valleys, or other topography to break up the landscape. The current land use is predominately agricultural, as detailed in Section B.4.b.(1) of this Application. The majority of the Project will result in below ground installation of pipeline, which will not be visible and will not affect the gently rolling vista. The above ground facilities associated with the Little Muddy Station will be constructed approximately ¼ mile south of US Highway 2 (a four-lane highway) in a remote, sparsely populated location with little scenic viewing.

The Project is not expected to affect any paleontological resources. The bedrock of the region is covered with quaternary glacial drift, which only rarely contains fossilized material dating to the Quaternary Period.

No historic sites or structures that are listed on the National Register of Historic Places (NRHP) or the North Dakota list of historic sites are located within the area of potential effect of the pipeline corridor and above ground facilities. Metcalf Archaeological Consultants (MAC) of Bismarck, North Dakota conducted cultural resource studies, including field surveys, for the proposed pipeline corridor and station location. No archaeological sites or

historic architecture that is recommended eligible for listing on the NRHP will be affected by the project.

MAC prepared a report of their methods and findings and submitted it to the North Dakota State Historic Preservation Office (NDSHPO, see Exhibit C.1). The report included a recommendation for a finding of “No Historic Properties Affected” for the Project. In a letter dated November 1, NDSHPO concurred with the finding of No Historic Properties Affected (see Exhibit C.2). Further discussion is provided in Section B.1.a.(1) of the Application for a Certificate of Corridor Compatibility.

If any additional project reroutes, work spaces, access roads, or other project locations are identified after submission of this route permit application, EPND will conduct additional cultural resources studies.

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

In its desktop review of the study area, EPND did not identify any unique habitat areas or sensitive lands within the one-mile wide study area or the approximately 400 foot-wide survey corridor. EPND commissioned Carlson McCain, Inc. (Carlson McCain) of Bismarck, North Dakota to conduct a habitat and sensitive species assessment of the survey corridor in September and October, 2011. (See Exhibit D.1).

Habitat Assessment:

The assessment did not reveal habitat areas of concern. The Project is not located across or near any significant ecological community and is not likely to adversely affect critical wildlife habitats. Potential impacts to wildlife include temporary displacement due to construction activities and temporary loss of ground cover in native and planted grassland areas. These effects are not likely to cause long-term declines in populations in the area. Ground clearing may temporarily impact habitat for unlisted species, including small migratory birds, ground dwelling mammals, and other wildlife species.

The pipeline route will not affect areas that are unique because of biological wealth or where there are habitats for rare and endangered species. To date, no unique biological areas, habitats, or protected species were identified along the route by regulatory agencies, or through EPND’s biological field surveys.

Assessments for federally listed threatened and endangered species were conducted by evaluating historic and present occurrences, and by

determining if potential habitats exist within the Project area. Currently, five federally listed species have been documented in Williams County. In addition, critical habitat for piping plover is listed as present in the county.

Table 1 Williams County Status of Endangered and Threatened Species and Designated Critical Habitat*		
Species	Status	County
		Williams
Gray Wolf	Endangered	X
Interior Least Tern	Endangered	X
Pallid Sturgeon	Endangered	X
Piping Plover ¹	Threatened	X
Whooping Crane	Threatened	X
¹ Designated Critical Habitat is located in Williams County		

Suitable habitat for the interior least tern and pallid sturgeon is limited to the Missouri River system and since none of this habitat is located in the Project study area, these species are not addressed hereafter.

B.2.j.(1) Species Assessments

Assessments for federally listed threatened, endangered species were conducted by evaluating historic and present occurrences and by determining if potential habitat exists within the study area. A determination was made concerning direct and cumulative effects of the proposed activities on each species. Determinations made for federally listed species are:

- No effect;
- Not likely to adversely affect; and
- Is likely to adversely affect

The habitat assessment completed by Carlson McCain assessed potential project impacts to the species listed in Table 1 and based on data provided, the following determinations were made:

Gray Wolf

Gray wolves were historically found throughout much of North America including the Upper Great Plains. Human activities have restricted their present range to the northern forests of Minnesota, Wisconsin, and Michigan and the Northern Rocky Mountains of Idaho, Montana, and Wyoming. They now only occur as occasional visitors in North Dakota. The most suitable

habitat for the gray wolf is found around the Turtle Mountains region (located over 150 miles east-northeast of the Project) where documented and unconfirmed reports of gray wolves in North Dakota have occurred.

Gray wolves were not observed during the habitat assessment and there is no potential habitat located in the Project area due to the prevalence of agricultural fields. The Project will have *no effect* on this species.

Piping Plover

Piping plovers are found along the Missouri and Yellowstone River systems and on large alkaline wetlands. Nesting sites and critical habitat have been documented on the shorelines of Lake Sakakawea and on large alkaline wetlands. In North Dakota, piping plover nest on alkali lades, sandy relatively narrow beaches (300 – 1,200 feet wide), and barren river sandbars. The nearest designated critical habitat for piping plover is Lake Sakakawea, located approximately 15 miles south of the Project.

Suitable nesting habitat is not located within or adjacent to the study area, and no piping plovers were observed during the on-site evaluation. The Project is *not likely to adversely affect* this species at this time and will have *no effect* on critical habitat.

Whooping Crane

The primary nesting area for the whooping crane is in Canada's Wood Buffalo National Park. Arkansas National Wildlife Refuge in Texas is the primary wintering area for whooping cranes. In the spring and fall, the cranes migrate primarily along the Central Flyway. During the migration, cranes make numerous stops, roosting in large shallow marshes, and feeding and loafing in harvested grain fields. The primary threats to whooping cranes are power lines, illegal hunting, and habitat loss.

The project is located within the Central Flyway. Approximately 75% of the whooping crane sightings in North Dakota occur within a 90-mile corridor that includes the Project area. Construction activities may cause migratory cranes to divert from the area, but is not likely to result in any fatalities.

If individuals are migrating through the Project area during construction, they would likely avoid the Project area and use adjacent wetlands or croplands for feeding. In its consultation letter sent to USFWS in September 2011, EPND outlined general mitigative measures related to whooping crane. Should a whooping crane be identified within one-half mile of the Project area, construction will be temporarily suspended. The USFWS would be contacted immediately. For these reasons, EPND believes the Project is *not likely to adversely affect* the whooping crane or its habitat.

B.2.j.(2)Raptor Nest Survey

The Project may affect raptor and migratory bird species through direct mortality, habitat degradation, and/or displacement of individual birds. These impacts are regulated in part through the Migratory Bird Treaty Act (916 USC 703-711) and the Bald and Golden Eagle Protection Act (BGEPA).

A ground survey for tree and ground raptor nests was conducted within the survey corridor as part of Carlson McCain's habitat assessment described above (see Exhibit D.1). No raptor nests were observed during the on-site evaluation; however, nesting habitat was observed within and adjacent to the survey corridor.

The on-site evaluation was performed outside of the nesting season for migratory birds; therefore, nesting sites were not observed. EPND will implement mitigation measures to minimize impacts to suitable nesting habitats as described in EPND's EMP (See Exhibit E).

B.2.j.(3)US Fish and Wildlife Service (USFWS) Wetland and Grassland Easements

The USFWS holds wetland and grassland conservation easements in the state of North Dakota. These lands are managed by the USFWS as part of the agency's National Wildlife Refuge System. EPND initiated consultation with USFWS in September 2011 to determine if any wetland and/or grassland easements are within the study area. At the time of this filing, no response has been received.

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

EPND consulted with several federal, state, and local agencies to identify potential environmental resources in the Project area that may be affected. To date, no agency has raised a concern regarding this Project.

Further discussion on agency consultations and concerns are found in Section B of the Certificate of Corridor Compatibility enclosed herewith in this combined application, and discussions on proposed avoidance and mitigation measures are found in Sections B.4 and B.6 of this application.

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

This section presents EPND's inventory of environmental and land use information consistent with North Dakota Administrative Code (North Dakota Rules) Chapter 69-06-08-02 for evaluating siting criteria, including areas referred to as exclusion and avoidance areas, and the Project's compatibility with selection and policy criteria.

Project components assessed include the pipeline route, Little Muddy Station, and an associated survey corridor (generally 400 feet wide centered on the pipeline route).

Detailed discussions of these criteria, including descriptions, potential impacts, and mitigation measures where appropriate are provided in Sections B.4, B.5, and B.6 of this application. Siting criteria identified within the study area or along the route are shown on route maps enclosed as Exhibits H.1, H.2 and H.3.

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

In accordance with North Dakota Rules Chapter 69-06-08-02, the pipeline route has been situated after consideration of its impact on humans and the environment.

B.4.a Exclusion and Avoidance Areas (North Dakota Rules Chapter 69-06-08-02.1 and 69-06-08-02.2)

The ND-PSC has identified certain sensitive or otherwise important environmental features that must be considered during the selection of a route for transmission facilities. These features have been classified as either "Exclusion Areas" or "Avoidance Areas." As defined in North Dakota Rules Chapters 69-06-08-02.1 and 69-06-08-02.2, "Exclusion Areas" are areas that are to be excluded from consideration for energy conversion sites and transmission facility routes. "Avoidance Areas" are areas not to be considered in the routing of a transmission facility unless it is shown that, under the circumstances, there are no reasonable alternatives. In 1978, the ND-PSC published the Inventory of Exclusion and Avoidance areas for the Siting of Energy Conversion and Transmission Facilities, which lists these areas for each county in North Dakota (*see* Table 2). EPND has confirmed with ND-PSC staff that no new types of Exclusion or Avoidance Areas have been added to the inventory to date.

Exhibit H.1 contains maps depicting Exclusion and Avoidance Areas within a one mile study area generally centered on the pipeline route.

TABLE 2			
North Dakota Public Service Commission Exclusion and Avoidance Areas – Transmission Facility Siting			
Avoidance and Exclusion Area	Category	Affected by the Project	Administering Agency
National Memorial Parks	Exclusion	No	National Park Service (NPS)
National Historic Sites and Landmarks	Exclusion	No	NPS
National Natural Landmarks	Exclusion	No	NPS
National Wilderness Areas	Exclusion	No	NPS and US Forest Service (FS)
National Parks	Exclusion	No	NPS
National Monuments	Exclusion	No	NPS and State Historical Society
State Parks	Exclusion	No	State Park Service
State Historic Sites	Exclusion	No	State Historical Board
State Historical Markers	Exclusion	No	State Historical Board
State Archaeological Sites	Exclusion	No	State Historical Board
State Monuments	Exclusion	No	State Historical Society
State Nature Preserves	Exclusion	No	State Park Service
Areas Critical to the Life Stages of Threatened or Endangered Animal or Plant Species	Exclusion	No	US Fish and Wildlife Service (FWS)
Areas Where Animal or Plant Species Unique or Rare in the State Would be Irreversibly Damaged	Exclusion	No	Various
County Parks and Recreation Areas, Municipal Parks, and Parks under other Governmental Jurisdiction	Exclusion	No	Various
National Wildlife Areas	Avoidance	No	FWS
National Wildlife Refuges	Avoidance	No	FWS
National Grasslands	Avoidance	No	FS
National Historic Districts	Avoidance	No	State Historic Society
National Wild, Scenic or Recreational Rivers	Avoidance	No	Heritage Conservation Recreation Service, State Outdoor Recreation Agency
State Wild, Scenic or Recreational Rivers	Avoidance	No	State of North Dakota Legislative Assembly
State Game Refuges	Avoidance	No	North Dakota Game and Fish Department
State Game Management and Management Areas	Avoidance	No	North Dakota Game and Fish Department
State Forests	Avoidance	No	State Forest Service
State Forest Management Lands	Avoidance	No	State Forest Service
State Grasslands	Avoidance	No	State Park Service
Irrigated Land	Avoidance	No	State Water Commission
Areas of Historic, Archaeological or Paleontological Significance not specifically designated as Exclusion or Avoidance Areas	Avoidance	No	State and County Historical Society
Areas of Recreational Significance	Avoidance	No	Various
Reservoirs	Avoidance	No	US Army Corps of Engineers and State Water Resource Commission
Municipal Water Supplies	Avoidance	No	State Water Resource Commission
Water Sources for Organized Rural Water Districts	Avoidance	No	State Water Commission
Areas which are Geologically Unstable	Avoidance	No	State Geologist Geological Survey
Within 500 Feet of an Inhabited Residence, School, or Place of Business	Avoidance	No	Landowner

B.4.a.(1) Designated or Registered State: Wild, Scenic, or Recreational Rivers; Game Refuges; Game Management Areas; Management Areas; Forests; Forest Management Lands; and Grasslands

No designated or registered state: wild, scenic or recreational rivers; game refuges; game management areas; forests; forest management areas; or grasslands were identified within the study area or the survey corridor.

The following two types of “management areas” have been identified as occurring within the Project study area, though, not directly crossed by the pipeline route:

B.4.a.(1)(i) School Trust Land

One parcel of ND-SLD School Trust Land is located within the study area, just east of the Little Muddy Station, across from 133rd Avenue NW. EPND’s facility and pipeline route avoids crossing this parcel. The location of the School Trust Land in relation to the route corridor and the pipeline route and facility is shown on the avoidance criteria maps as Exhibit H.1. Further information is provided in Section B.4.f of the Application for a Certificate of Corridor Compatibility.

B.4.a.(1)(ii) Conservation Reserve Program (CRP) Land

EPND submitted a consultation request to the FSA on September 23, 2011 to determine if CRP lands will be impacted by the Project. In a September 27, 2011 response, FSA identified approximately nine acres within the one-mile study area and confirmed that no CRP lands are directly crossed by the route or within the Little Muddy Station property boundary. Further information is provided in Section B.4.e of the Application for a Certificate of Corridor Compatibility.

B.4.a.(3) Areas within 500 feet of Inhabited Residence, Schools or Place of Business

No businesses, schools, or inhabited residences were identified within 500 feet of the pipeline.

B.4.b Selection Criteria (North Dakota Rules Chapter 69-06-08-02.3)

North Dakota Rules specify several selection criteria to be considered in designating a pipeline corridor or route. Specifically, the ND-PSC considers whether adverse effects from the location, construction, and maintenance of the facility as they relate to these criteria, will be at an acceptable minimum, and whether these effects will be managed and maintained at an acceptable

minimum. Table 3 below identifies the selection criteria that were considered for the Project. Potential impacts, as they relate to each of the selection criteria, are discussed below. EPND will implement several measures to minimize these impacts, which are discussed in greater detail below.

Table 3	
Little Muddy Station Connection Project Selection Criteria Considered	
SELECTION CRITERIA CONSIDERED	CROSSED BY PROPOSED PIPELINE
Agricultural Production	Yes
Family Farms and Ranches	Minimal
Land Suitable for Irrigation	Minimal
Surface and Groundwater Flow Patterns	Minimal
Noise Sensitive Areas	Minimal
Visual Effects	Minimal
Extractive and Storage Resources	Minimal
Wetlands	Minimal
Woodlands	Minimal
Communication or Electric Control Facilities	Minimal
Human Health and Safety	Minimal
Animal Health and Safety	Minimal
Plant Life	Minimal

B.4.b.(1) Agricultural Production

Agriculture (cultivated crops) is the predominant land use, comprising approximately 61% of the study area. The enclosed maps (see Exhibit H.2 Selection Criteria Map – Land Use/Land Cover) illustrate the location of agricultural land within the study area and along the route.

The effects of construction on agriculture would be minor and short-term. The primary impact would be the loss of standing crops within the construction work area for the growing seasons during which Project-related activities occur.

Permanent impacts on agriculture production are not anticipated due to pipeline construction. EPND will bury the pipeline deeper than typical tillage depths to allow continued use of the land. Following construction, EPND will restore the right-of-way to its pre-construction contours and stabilize the ground until the next growing season. Planting and harvesting will be allowed to continue over the permanent right-of-way. EPND expects fields to return to normal yields within a year or two of construction.

EPND is proposing to implement mitigation measures to minimize the potential for short-term impacts on agriculture productivity. EPND will:

- bury the pipeline deeper than typical tillage depths to allow continued use of the land for agriculture after construction;
- clean heavy equipment that is capable of transporting weed prop gules or soil pests prior to use on the project;
- prohibit construction during periods of prolonged, heavy rainfall to minimize the potential for soil compaction and reduced soil productivity;
- alleviate soil compaction caused by construction by deep tilling or chisel plowing soils (or alternative methods approved by the landowner or land management agency) where compaction has been shown to have been caused by construction;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench line and subsoil storage area to maintain topsoil integrity and minimize impacts on soil productivity (where there is less than 12 inches of topsoil, strip the existing amount or to the bottom of the plow layer, whichever is deepest);
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;
- implement temporary erosion best management practices (e.g., slope breakers, sediment barriers, and mulch) to minimize the potential for soil loss due to wind or water erosion during construction;
- compensate landowners for crop loss and other associated damages for the year of construction;
- coordinate with landowners to assess crop productivity following construction and provide compensation where crop yields show decline;
- coordinate the interruption of irrigation and drainage systems with each landowner and compensate the landowner for damages and lost production that result from interruption of irrigation and/or drainage systems;

- repair, replace, or compensate landowners where irrigation and/or drainage systems are damaged by construction; and
- compensate landowners for a permanent easement on their property.

Construction of the Little Muddy Station will permanently convert approximately 18 acres of agricultural land to industrial land. As stated above in Section B.2.f, this amount is considered negligible when compared to the approximately 1.14 million acres of farmed land in Williams County (2007 USDA Census of Agriculture).

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

Family farms and ranches occur within the study area. The primary impact on family farms would be the loss of standing crops within the work area for the growing seasons during which Project-related activities occur, as well as potential diminished yields for a year or two following construction. EPND would mitigate these temporary effects by following the measures listed in Section B.4.b.(1) as stated above.

Herbaceous rangeland suitable for livestock grazing comprises approximately 32% of the study area. The primary impact on family ranches would be prohibition of livestock grazing in the Project area and restricting livestock movement across the Project area during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline along property boundaries and the small amount of rangeland along the route, livestock grazing reductions and restricted livestock movement would be minor.

Long-term or permanent impacts on family farms and ranches are not anticipated. The Project will not result in changes of land ownership. Following construction, the work area would be restored and farming and ranching may continue over the permanent right-of-way. Livestock grazing may be displaced until right-of-way vegetation is reestablished. Landowners will be compensated for temporary land use loss. Grazing will return to normal after re-vegetation.

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

- compensate landowners for temporary land use loss;
- compensate landowners for a permanent easement on their property;
- make arrangements with landowners to keep livestock in fields not affected by the proposed project where practical;

- cut and brace fences crossed by the proposed pipeline in a manner to prevent slack, and install gates across the opening to prevent livestock passage, if required;
- install temporary fences as necessary to prevent livestock from entering the construction area;
- where there is a poorly established sod layer, strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench and spoil side of the right-of-way (where there is less than 12 inches of topsoil, strip the existing amount);
- where there is a well-established sod layer, strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench only (where there is less than 12 inches of topsoil, strip the existing amount);
- store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling; and
- restore the work area its pre-construction contours and re-seed with mixtures approved by the landowner.

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

In addition to impacts on actively cultivated fields, the Project could impact land capable of supporting future cultivation. This includes land which the owner can demonstrate has soil, topography, drainage, and an available water supply that cause the land to be economically suitable for irrigation.

Generally, land suitable for cultivation within the study area, regardless of whether it is actually cultivated or not, is designated as “prime farmland (if irrigated)” or “farmland that is of statewide or local importance.” The NRCS has defined “prime farmland” and “farmland that is of statewide or local importance” as land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops. These designations include cultivated land, pasture, woodland, and other land that is either used for food or fiber crops or are available for these uses. Urbanized land and open water are generally excluded from prime farmland and farmland that is of statewide or local importance.

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

agencies define the criteria for determining farmland that is of statewide or local importance.

Prime farmland (if irrigated) and farmland that is of statewide or local importance does occur within the study area and along the route (see Exhibit H.3 Selection Criteria Map - Other). Approximately 13% of the study area contains prime farmland (if drained), and approximately 52% is classified as farmland that is of statewide or local importance. The remaining 35% is classified as “not prime farmland.”

A number of factors used to designate prime farmland and farmland that is of statewide or local importance will not be affected by the Project. For example, rainfall and the length of the growing season would not change. Criteria that may be affected by the Project are mainly related to soil productivity and are the same as those discussed for agriculture production.

The actual effects of the Project on prime farmland and farmland that is of statewide or local importance varies by the actual land use and/or land cover affected. For example, effects on actively cultivated land are different than uncultivated land. On actively cultivated land, EPND will implement mitigation measures to minimize effects on agriculture production as noted above and there would be only minor, short-term impacts on the land. Where land is used for other purposes, EPND will implement other mitigation measures suitable to the current land use and/or land cover. Additionally, if construction activities adversely affect soil productivity in prime or important farmland, productivity may be reestablished by mitigating for the limiting factors in the future.

Long-term impacts on prime farmland and farmland that is of statewide or local importance would be minor. Following construction, the work area would be restored to its pre-construction condition and stabilized. Future drain and irrigation systems will be allowed on the permanent right-of-way in accordance with specifications that allow for the safe and continued use of the pipeline.

B.4.b.(4) Surface and Groundwater Flow Patterns

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

The facility and the majority of the pipeline route lie in the Little Muddy River drainage basin (Hydrologic Unit Code [HUC] 10110102). Approximately one-half mile of the pipeline route lies within the Lake Sakakawea drainage basin (HUC 10110101).

In the Little Muddy drainage basin, surface water generally drains to a series of intermittent streams which flow west into the Little

Muddy River. The Little Muddy River flows to the south approximately 15 miles, where it enters the Missouri River/Lake Sakakawea just east of the city of Williston. In the Lake Sakakawea drainage basin, surface water generally drains to the south and east, eventually entering into intermittent drainages which flow to Stony Creek. Stony Creek then flows approximately 15 miles to the southeast eventually entering the Missouri River/Lake Sakakawea just east of the city of Williston.

EPND commissioned wetland/waterbody assessments of the survey corridor and station site. Results of these assessments are described in Section B.4.b.(8).

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

Groundwater occurs within the Project area in both glacial drift and bedrock aquifers. The most economically important aquifers in Williams County are the Cretaceous Dakota Group, the Tertiary Fort Union Group, and glacial drift aquifers of the Quaternary Period. Glacial drift is relatively thin throughout the county except for in buried bedrock valleys. In the absence of Quaternary aquifers, the Fort Union Group is likely to serve as the shallowest aquifer. The Little Muddy Aquifer underlies the north-south trending Little Muddy Creek, which is in the vicinity of the Little Muddy Station. The Little Muddy Aquifer is associated with the ancestral Yellowstone River valley, and is comprised of glaciofluvial and alluvial sand and gravel deposits.

Ground disturbance associated with pipeline construction is generally limited to six feet or less below the existing ground surface. Most construction activity will occur above surficial aquifers. However, it is possible that shallow groundwater may be encountered in the bottomland flats area associated with Little Muddy River in the western portion of the Project area. The lower elevation in the valley, coupled with the likelihood that the Little Muddy River is in hydraulic connection with the sands and gravels of the Little Muddy Aquifer, increase the likelihood of groundwater occurring near the ground surface. Construction activities, such as trenching, blasting, drilling, dewatering, and backfilling that encounter shallow aquifers could cause minor fluctuations in groundwater levels and/or increased turbidity within the aquifer adjacent to the activity. Dewatering activities, if necessary, are not expected to have a significant effect on regional groundwater flow patterns. Shallow aquifers will quickly reestablish equilibrium if disturbed, and turbidity levels would rapidly subside.

Consequently, the effects of construction would be minor and short term. Deeper aquifers will not be impacted.

B.4.b.(5) Impact of Noise Sensitive Land Uses

A desktop review of the study area was conducted for five types of noise sensitive areas and land uses within the corridor and along the route: residences, schools, places of business, grazing, and hunting. No businesses, residences, or schools are located within 500 feet of the proposed pipeline route. Grazing and hunting activities may occur throughout the corridor and along the route.

The study area and survey corridor are located in a predominately rural setting characterized by an inherently low ambient noise level. Most of the noise generated in any given area is due to human activity, primarily vehicle traffic, train traffic, and agricultural machinery. Lesser amounts of noise can be attributed to natural causes, such as wind, birds, and insects.

The effects of noise on people, livestock, and wildlife is strongly influenced by the level and timing of the noise.

The heavy equipment needed to construct the pipeline is expected to generate between 80 and 90 decibels within 50 feet of the equipment. Noise sensitive receptors close to construction will be exposed to temporary increases in noise. The effects of noise will be diminished where the Project is adjacent to existing roads because these areas already experience increased noise levels from train and car/truck traffic (estimated between 60 and 95 decibels when cars and trucks are traveling on roads at higher speeds). Nighttime noise levels will normally be unaffected by construction, as most construction is typically restricted to daylight hours.

Given the remote location of the Project and facility and its proximity to a major thoroughfare (US Highway 2), EPND is not conducting noise surveys at its new Little Muddy Station.

B.4.b.(6) Impact on Visual Effect on the Adjacent Area

No designated scenic outlooks or viewing areas were identified within the study area. The study area and pipeline route traverse a landscape consisting primarily of grasslands and agricultural fields where the line of sight is broken by rolling hills and the occasional wooded draw or shelterbelt.

Temporary visual effects will exist during active construction at which time heavy equipment, open trenches, and spoil piles will change the colors and textures of the landscape. The duration of visual impacts will be relatively

short-term as the re-establishment of vegetation on grasslands and agricultural land following construction will occur relatively quickly. The only permanent impacts on visual resources would be the conversion of agricultural land to industrial use where the new Little Muddy Station will be built. This facility will be located in sparsely populated, rural agricultural area where very few people will see it.

B.4.b.(7) Impact on Extractive and Storage Resources

A review of the Project study area identified several oil wells in the area. No mines or gravel/sand pits were identified in the study area. Additionally, no storage resources were identified within the corridor. The Project will not impact extractive or storage resources.

B.4.b.(7)(i) Oil and Gas

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

The corridor would pass over the Bakken Formation, a thin but widespread unit within the central and deeper portions of the Williston Basin. There are an estimated 18 oil wells within the study area. Of these 18 wells, only one is located adjacent to the route within the survey corridor (see Exhibit H.3).

Typically, the pipeline trench would be less than 6 feet deep to account for the pipe and a minimum of 4 feet cover, except at road crossings where bores may require additional depth. Construction of the pipeline is not expected to affect the ability of the wells to produce petroleum and/or natural gas because oil and gas is generally produced from depths in excess of 1,000 feet. Rather, any construction-related damage that may occur would be limited to surface or near-surface components of the wells and gathering systems, which could temporarily disrupt production until repairs are made. To minimize the potential for impacting surface and near-surface components, EPND would:

- Avoid direct impact to the one well located within the vicinity of the construction right-of-way; and

- Identify any associated underground gathering lines along the route and take appropriate precautions to protect the integrity of such facilities.

B.4.b.(8) Impact on Wetlands and Waterbodies

EPND completed a “desktop” wetland review of the study area. As shown on route maps enclosed herewith as Exhibit I, there are several small wetlands scattered throughout the study area. Based on USFWS National Wetland Inventory (NWI) data, wetlands occupy about 43 acres (<1 percent) of the study area.

The most common wetlands within the study area are freshwater emergent wetlands, which are characterized by rooted herbaceous vegetation. Water sources for these wetland communities include seepage from ditches and drainages, irrigation runoff, and ponding on poorly drained soils. Common emergent wetland species along the pipeline study area are foxtail barley, water smartweed, spike rush, curly dock, uptight sedge, inland rush, and bluegrass. In addition to emergent wetlands, freshwater ponds and lakes occur within the study area.

Construction in wetlands may result in short-term impacts, including temporary loss of wetland vegetation, soil disturbance, and increases in turbidity and fluctuations in wetland hydrology. Additionally, wetlands could be contaminated by accidental spills during vehicle refueling and maintenance, or from other potential hazardous material spills that might occur during construction. EPND is proposing to implement mitigation measures to minimize impacts on wetlands, as detailed in the project’s EMP (see Exhibit E), which included the following measures:

- mark wetland boundaries prior to construction;
- reduce the width of the construction work area to 85 feet or less through wetland areas;
- restrict the equipment working in and passing through wetlands to the extent practical;
- strip the existing amount of topsoil, up to a maximum depth of 12 inches, from over the trench in unsaturated wetlands (where there is less than 12 inches of topsoil strip the existing amount);
- in unsaturated wetlands, store topsoil and subsoil in a manner that prevents mixing, and return topsoil to its original horizon during backfilling;

- implement temporary erosion best management practices (e.g., slope breakers, and sediment barriers) to minimize the potential for erosion and sedimentation in wetlands during and after construction;
- use equipment pads or timber riprap as needed to support construction equipment in saturated wetlands and reduce the potential for soil compaction;
- prohibit equipment refueling and the storage of fuels and hazardous substances in or within 100 feet of wetlands; and
- re-seed unsaturated wetlands with annual ryegrass or similar cover crop at a rate of 40 pounds per acre to temporarily stabilize the soils and allow native vegetation to reestablish without excessive competition.

As described in Section B.2.a.(1) of the Application for a Certificate of Corridor Compatibility, EPND commissioned a wetland and waterbody assessment of the survey corridor in September and October 2011. Carlson McCain completed the survey of the station and an approximately 400 foot-wide corridor generally centered on the pipeline route.

B.4.b.(8)(i) Route

A total of twelve wetlands totaling 6.54 acres were identified and delineated during the field delineation completed by Carlson McCain (see Figures 2-1, 2-2, and 2-3 in Exhibit D.1 – Carlson McCain Report, Appendix A). Nearly all wetlands are depression pothole wetlands. Of these twelve wetlands, only one wetland is directly crossed by the pipeline route (approximately 13 feet). See Table 4.

TABLE 4 Field Delineated Wetlands Crossed by the Pipeline Route		
Approximate Station Number ^a	Crossing Length (Feet)	Wetland Type ^b
15+00	13	PEMA
<u>TOTAL</u>		<u>13</u>
^a Refer to Exhibits H.3 and I (Route Maps) ^b Wetland Types based on Cowardin et al. wetland classification system, 1979. PEMA-Palustrine, Emergent, Temporarily Flooded		

A total of seven drainage features totaling 1.69 acres were identified and delineated during the field delineation completed by Carlson McCain. All of the features are classified as either ephemeral or intermittent streams. Of these seven features, only three are directly crossed by the pipeline route. See Table 5.

TABLE 5			
Field Delineated Waterbodies Crossed by the Pipeline Route			
Approximate Station Number ^a	Drainage Feature ID ^b	Crossing Length (ft.)	Type
143+00	27156100-S3	10	Unnamed Intermittent Stream
165+00	27156100-S1	4	Unnamed Intermittent Stream
218+00	26156100-S1	8	Unnamed Intermittent Stream
TOTAL		22	
^a See Exhibits I and H.3 for location of waterbodies crossed ^b See Exhibit D.1			

Assuming a construction right-of-way neck-down width of 85 feet at wetland and waterbody crossings (see EMP in Exhibit E), approximately 0.03 acre¹ of wetlands and 0.05 acre² of waterbodies may be temporarily impacted along the pipeline route during construction.

B.4.b.(8)(ii) Stations

Little Muddy Station:

A portion of one wetland was delineated near the western boundary of the Little Muddy Station (see Exhibit H.3). EPND has designed the station infrastructure to avoid impacts to this wetland. Additionally, EPND will implement mitigation measures to protect this wetland during construction as described in EPND’s EMP (see Exhibit E).

B.4.b.(9) Impact on Woodlands and Wooded Areas

Based on a desktop review using the US Geological Survey (USGS), National Land Cover Data Set (2006), only 3 acres of deciduous forest and 8 acres of woody wetlands are located within the study area. This amounts to approximately 0.2% of the study area. As such, impacts to wooded areas and woody vegetation are expected to be minimal. Actual acreages will be determined prior to construction when EPND conducts a tree and shrub survey along the construction corridor.

If required, clearing of woody vegetation within the construction work area may result in some change. Permanent impacts will be limited to the permanent right-of-way and easements, which EPND would maintain in an

¹ Calculated as crossing length listed in Table 4 * Reduced Construction right-of-way width (85 ft)
² Calculated as crossing length listed in Table 5 * Reduced Construction right-of-way width (85 ft)

herbaceous state by occasional mowing or brush clearing. EPND is also proposing to implement additional mitigation to minimize impacts on wooded areas. EPND will:

- reduce the width of the construction work area to 85 feet or less in wooded areas;
- conduct a tree and shrub survey prior to clearing;
- selectively cut and remove shrubs and trees within the 85-foot-wide construction work area leaving mature shrubs and trees in place where practical; and
- cut woody vegetation flush with the surface of the ground such that root stock is left in place to aid in re-vegetation after construction (except over the trench line, in areas requiring grading, and where necessary to provide a safe work surface).

B.4.b.(10) Impact on Radio and Television Reception, and Other Communication of Electronic Control Facilities

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

B.4.b.(11) Impact on Human Health and Human Safety

Presently, EPND owns and operates a 968-mile existing underground petroleum gathering and mainline pipeline system that extends from eastern Montana through North Dakota to Clearbrook, Minnesota and to the international boundary between the US and Canada. EPND has successfully planned, designed, permitted, constructed and placed into operation a number of liquid petroleum pipeline expansion projects since 2006, and is experienced in managing construction and operating pipeline systems that protect the public's health and safety.

EPND will design, construct, test, operate, and maintain this Project in accordance with all applicable laws and standards. The US Department of Transportation's pipeline standards are published in 49 Code of Federal Regulations, Parts 194 and 195. The regulations are intended to ensure adequate protection of the public and to prevent accidents and failures. 49 CFR Part 195 specifically addresses petroleum pipeline operating, maintenance, inspection and safety issues. It specifies material selection and qualification; minimum design requirements; and protection from internal, external, and atmospheric corrosion as well as operator

qualification and pipeline inspections. 49 CFR Part 194 prescribes emergency planning for liquid petroleum pipelines to prepare for prompt shutdown, containment and cleanup to minimize the effects of a pipeline release, should one occur. EPND has prepared an Emergency Response Plan in compliance with 49 CFR Part 194 and filed the plan with the US Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA).

Compliance with the federal pipeline safety regulations is periodically inspected by PHMSA.

Air Permitting Requirements

As discussed in Section B.4.g of the Application for Certificate of Corridor Compatibility, EPND will be required to obtain an air pollution control Permit to Construct from the NDDH for construction of new storage tanks and associated equipment to be installed at Little Muddy Station. EPND plans to submit its applications prior to the initiation of its construction activities at each location.

Upon completion of the Project, EPND will notify the NDDH within 15 days after completing the Project to allow for an inspection by NDDH. Once the Permit to Construct requirements are verified, the NDDH will issue a minor source Permit to Operate.

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, EPND will construct the Little Muddy Pipeline and continue to maintain this line to meet or exceed industry and governmental requirements and standards. Specifically, the steel pipe will meet PHMSA federal codes under 49 CFR Part 195, follow standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers and American Petroleum Institute (API). As a safety factor, the Little Muddy Pipeline is designed to withstand pressures over and above its normal operating pressures and will operate according to codes and regulations. Each pipe segment is inspected and integrity-tested at the factory and transported in accordance with the American Petroleum Institute technical standard. 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, which includes PHMSA inspectors. PHMSA also conducts regularly scheduled field inspections of the pipeline facilities to ensure compliance

with federal regulatory requirements, including the integrity testing of the pipeline through the use of internal inspection devices.

Once installed, the pipeline will be subjected to careful testing to verify its integrity and compliance with specifications. Such testing will include checking coating integrity, examining by X-ray 100% of field welds (over and above the 10% required by regulations), internally inspecting the entire length of each line by using an in-line inspection tool known as a “caliper pig”, and hydrostatically testing the line to establish the maximum allowable operating pressure. The pipeline will be placed into service only after inspection to verify compliance with all construction standards and requirements.

This pipeline and its associated facilities are maintained and inspected according to PHMSA regulations, industry codes and prudent pipeline operating techniques. All of EPND’s transmission liquids 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. EPND’s cathodic protection system and internal inspection program were implemented prior to these techniques becoming a federal regulatory standard³.

EPND’s pipeline system is patrolled and inspected by air at least every three weeks but not less than 26 times per year to watch for abnormal conditions or dangerous activities (e.g., unauthorized excavation along the pipeline routes). EPND also conducts extensive public education and outreach programs that exceed industry (API Recommended Practice 1162) and federal (49 CFR 195.440) requirements concerning public awareness of pipelines and pipeline-safety matters. EPND pipeline routes and pump station facilities are marked with signage and warnings, to meet or exceed federal regulations. Pipeline route signage is placed 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. EPND meets, and often exceeds, these requirements so that human error in construction and operation is avoided.

³ Beginning in 2004, federal regulations required periodic integrity assessment testing of pipelines in high consequence areas.

Baseline Transportation Accident Rates

Releases from interstate liquid petroleum pipelines are reportable to PHMSA as required by 49 CFR Part 195 Subpart B. Currently, the federal regulations require reporting of all releases greater than 5 gallons (and/or if other threshold reporting criteria are met), which becomes public record on PHMSA’s website. In addition, EPND is required by North Dakota to report releases to the NDDH.

No reasonable alternative mode of transportation or route to transport the equivalent daily volumes as proposed by this Project is available. However, it is illustrative to compare pipeline safety to other modes of transportation. Pipelines operate more safely than any other mode of oil transportation. In Table 6, the numbers show how much more likely a transportation mode is to have an accident of a particular type compared to an oil pipeline. For example, truck accidents result in deaths at least 87 times more often than pipeline accidents. Likewise, truck accidents result in fires and/or explosions about 35 times more frequently per barrel of oil transported per mile. (These figures include only accidents involving petroleum shipments, not all accidents for a given transportation mode).

Table 6			
Accident Rates of Petroleum Transportation Methods^a			
Method	Death	Fire/Explosion	Injury
Truck	87.3	34.7	2.3
Rail	2.7	8.6	0.1
Barge	0.2	4.0	3.6
Tank Ship	4.0	1.2	3.1

^a Values less/more than 1.0 indicate risk of accident is lower/greater than pipeline transportation. Comparisons based on calculated rates per ton-mile.
 Source: Allegro Energy Group as posted on the Association of Oil Pipelines website: <http://www.aopl.org>

Crude Oil Pipeline Accident Rates

An analysis of the historical record shows that the liquid petroleum pipeline industry's safety performance has improved significantly over the last 30 years. These improvements correlate with advancements in technology as well as increased environmental awareness. The annual number of spills has decreased by nearly 40%. Over the last 30 years, the number of spills has also dropped from an average of 318 in the first six years (1969 to 1974) to the most recent six year running average of 197 spills nationwide. The median size of a spill has greatly decreased. The annual volume of oil spilled from pipeline systems has fallen by about 60%, based on six year running averages (PHMSA website and Association of Oil Pipelines website).

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

General construction-related effects on domestic animals and wildlife will result primarily from activity in the Project area during construction. The clearing of herbaceous and woody vegetation will temporarily reduce cover, nesting, and foraging habitat for some species. Clearing may also result in the loss of some members of small, slower moving species. However, most will move into adjacent undisturbed habitats until construction and restoration are complete. Overall habitat availability is not expected to change in the long term.

Pipeline trenching activities and associated spoil piles may result in a short-term barrier to 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. Shelter belts and trees will be protected to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline. Mitigation measures will be implemented to avoid or minimize potential adverse impacts on animal health and safety as described in EPND's EMP (see Exhibit E).

B.4.b.(13) Impact on Plant Life

During construction, vegetation will be removed from the construction right-of-way. Where extra workspace is required, additional vegetation will be removed. In nonagricultural areas, trees and shrubs cleared from extra workspace will be allowed to reestablish after construction, and revegetation measures will take into account recommendations from applicable regulatory agencies and arrangements with landowners. Overall, significant change in plant life is not anticipated.

B.4.c Policy Criteria (North Dakota Rules Chapter 69-06-08-02.4)

The ND-PSC may give preference to an applicant that will maximize benefits resulting from the adoption of policies and practices of the ND-PSC. These policies, and the extent to which the Project aligns with or reinforces these policies, are described below.

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

EPND has designed the Project to take advantage of its existing facilities to the maximum extent practical by tying the Little Muddy Pipeline to the existing East Fork Station. EPND has also designed this Little Muddy Station Connection Project to optimize pipeline capacity, providing Bakken producers with a timely and cost effective long-term solution to meet their

transportation needs in this region. Additionally, the Little Muddy Station provides shippers with a new access point to pipeline capacity in the western portion of the Williston Basin. This access point helps reduce the amount of truck traffic that would otherwise be forced to travel to EPND's Trenton Station or Beaver Lodge Station in order to transport such crude oil volumes to market. No designated Exclusion or Avoidance Areas are crossed by the route.

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 and Utilization of Available Labor in this State for the General and Specialized Skills Required

No training of local labor is anticipated as a direct result of this pipeline expansion. During construction of the facility, skilled and unskilled labor, both local and non-local workers will be employed by EPND or by the General Contractor selected to construct this pipeline.

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

Crude oil and natural gas is the leading mineral product in North Dakota, making North Dakota the fourth largest producer of crude oil in the country. The Project will boost the state's economy and allow the state to capitalize on tax revenue gathered from production and extraction taxes.

Beneficial impacts on the economy will also result during construction from temporarily hiring local employees, and from a relatively large-scale, temporary influx of non-local construction workers. Unemployment in the area would see a temporary drop, and payroll taxes would temporarily rise.

Also, based on economic modeling by the Federal Bureau of Economic Analysis and consultation with EPND's economic expert, it is estimated that the Project construction will lead to 625 person-years of jobs and \$75 million in economic activity in North Dakota over the 2012 period. This activity will be concentrated in the northwest part of the state. Additionally, the incremental capacity, as described herein, is expected to lead to an increase in average annual revenues over the 2013-2022 periods of nearly \$20 million, which will further generate an estimated 150 jobs and nearly \$30 million in average annual state economic activity over that period.

Local businesses will benefit from the demand for goods and services generated by the temporary workforce's need for food and lodging. In addition, EPND will purchase some of the materials necessary for the Project's construction locally. EPND estimates that local purchases made

for construction of the project will primarily include consumables, fuel, equipment rental, and miscellaneous construction-related materials (e.g., office supplies).

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

No Citizen Coordinating Committee is anticipated as a result of the Project.

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

EPND does not own any of the crude oil in its system, and does not determine the destinations for the products transported by its system. The nature of EPND's crude oil transmission pipeline business is to provide transportation service to its customers as a common carrier, and to receive a fee for that service pursuant to tariffs authorized by the FERC under the Interstate Commerce Act.

B.4.c.(6) Labor Relations

The Project will have no anticipated effect on labor relations within North Dakota.

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

As previously mentioned, EPND has designed this expansion Project to take advantage of its existing facilities to the maximum extent practical and site new facilities to minimize human and environmental impacts to the greatest extent possible.

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

EPND is committed to protecting the environment and complying with all applicable environmental laws, regulations, and standards. EPND plans to implement the following procedures for environmental training and environmental inspection throughout the course of the Project.

B.4.c.(8)(i) Environmental Training

EPND will communicate the environmental requirements of the Project to project personnel, and implement the following procedures to ensure that environmental compliance is maintained:

- require environmental training for all Project personnel (both contractor and EPND) prior to construction;

- require Project personnel visiting the work site receive environmental training;
- require everyone who attends training to sign an acknowledgement form and be issued, as a proof-of-training, a copy of the training booklet and a hardhat sticker; and
- require all personnel to display a hardhat sticker when on a job site or dismiss personnel from the job site until the person obtains a hardhat sticker through completion of training.

B.4.c.(8)(ii) Environmental Monitoring

Environmental monitoring, in the form of ongoing site inspection, will be conducted during and following 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 EPND.

Environmental data has been assessed, specifically cultural resources, wetlands, and protected species, as described in Section B of the Application for Certificate for Corridor Compatibility. EPND will continue to work with appropriate regulatory agencies and will continue to gather comprehensive information during the permitting process.

EPND believes that construction-related impacts will be adequately mitigated throughout the Project route by the use of best management practices, good construction techniques, and environmental inspection. Therefore, long-term monitoring of impacts directly related to the Project is not anticipated.

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

EPND cannot utilize any existing corridors for this Project because no right-of-way corridor currently exists in the Project area.

Right of Way Requirements

For the construction of the approximately 6 miles of 10 inch diameter pipeline, this Project will require up to 50 feet of permanent easement and 60 feet of temporary workspace in upland areas and 50 feet of permanent easement and 35 feet of temporary workspace in wetlands as shown on Table 7 of this application. This Project will require a 110-foot-wide construction footprint in uplands and 85 feet in wetlands (see Exhibit K depicting a typical configuration of the new right-of-way requirements and construction footprint). Additional temporary extra workspace of up to 75 feet in width and 300 feet in length will be required at feature crossings such as but not limited to road crossings and railroad crossings. No pipe storage yards or private or new access roads have been identified at this time. This information will be filed prior to construction. EPND will acquire additional workspace from the landowners where necessary; use of unauthorized workspace is prohibited without the landowner and EPND's approval. In all cases, the size of additional temporary workspace will be kept to the minimum necessary to safely conduct work. Temporary working areas will not be restricted by or subject to permanent easement restrictions upon completion of construction.

EPND has established a 400-foot wide survey corridor along the route within the one-mile study area and has performed civil, biological, wetland and cultural survey work activities for the purpose of siting this Project (see Table 7 below) within the rules and regulations under the North Dakota Siting Act.

<p align="center"><u>Table 7</u> Typical Right-of-Way Requirements and Construction Footprint</p>						
Land Type	Study Area	Survey Corridor	Typical Construction Footprint	Typical Temporary Work Space	Extra Temporary Work Space at Crossing	New Permanent ROW
Upland	1-mile	400 feet	110 feet	60 feet	75 feet wide X 300 feet long	50 feet
Wetland	1-mile	400 feet	85 feet	35 feet	75 feet wide X 300 feet long	50 feet

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

No other existing or proposed transmission facilities will be involved in the Project within North Dakota.

B.4.d Design and Construction Limitations

See Section A.3 of the Application for Corridor Certificate.

B.4.e Economic Considerations

See Section B.2.g of this Application and Section C of the Application for Certificate of Corridor Compatibility.

B.4.f Human Environment

The Project area is sparsely populated and farming is the predominant economic activity. Within Williams County, the route crosses approximately 19 separate tracts of land owned by approximately 7 different landowners. Except for roads such as the 133rd Ave. NW/63rd St. NW crossing, the remaining land crossed by the route is privately owned. The route does not pass through parks or the incorporated limits of cities.

Road crossings for the route are summarized in Table 8. All county/township maintained roads will be bored unless the applicable permitting agency specifically permits EPND to open cut the road.

TABLE 8		
Roads Crossed by the Little Muddy Pipeline Route		
Station Numbering	Crossing Length (Feet)	Name
31+15	321	133 rd Ave. NW/63 rd St. NW
92+40	97	132 nd Ave. NW
138+86	90	62 nd St. NW
174+77	75	131 st Ave. NW
221+76	75	61 st St. NW
250+27	80	130 th Ave. NW

B.4.g Terrain and Geology

The Project is located in Williams County, which lies in the glaciated portion of the Missouri Plateau of the Great Plains Province. Starting at the existing East Fork Station and moving northwesterly, the Project traverses physiography comprised of level upland, and descends downslope through dissected uplands into bottomland flats topography at the proposed Little Muddy Station, dropping approximately 300 feet in elevation. The surface elevation at the existing East Fork Station is approximately 2,250 feet above

mean sea level (MSL), and the elevation at the Little Muddy Station ranges from approximate elevation 1,920 to 1,950 feet MSL.

The surficial geology in Williams County is dominated by glacial drift that was deposited during two advances of late-Wisconsinan glaciation. Glacial drift in the Project area ranges from less than 100 feet thick in the southeast near the East Fort Station to over 200 feet thick in the west, owing to the presence of a buried bedrock valley that was incised by the preglacial Yellowstone River. The drift deposits are comprised of till, sand and gravel, and clay and silt. Till is widely distributed throughout the county except where post-glacial erosion has removed it, such as in badland areas. The thinnest till deposits typically occur on bedrock highs by the uplands. Sand and gravel occurs in the greatest thickness at the project area in the west in the pre-glacial Yellowstone River bedrock valley. Similarly, the thickest silt and clay deposits also coincide with the buried bedrock valley of the pre-glacial Yellowstone River, and are of glacial or proglacial origin. The surficial geology of the Project area is dominated by ground moraine in the east and alluvium and stratified drift deposits with some stagnation moraine in the west in the location of the ancestral Yellowstone valley.

Post-glacial alluvium comprises prevalent surficial deposits in the Little Muddy River Valley near the proposed Little Muddy Station. Glacial drift deposits may be underlain by a thin layer (approximately 10 feet) of pre-glacial brown quartzitic gravels.

The unconsolidated deposits in Williams County lie unconformably over a thick sequence of Late Mesozoic and Early Tertiary sedimentary formations. Williams County is located near the center of the structural and sedimentary Williston Basin. Well drilling in the county has revealed that the sedimentary rock sequence can exceed 14,000 feet in thickness.

B.4.h Soils

Soil characteristics along the pipeline route were identified and assessed using the NRCS Soil Survey Geographic database (SSURGO). 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 SSURGO database was used to identify along the pipeline route and within the facility boundary. The vast majority of the soils present are classified as well drained loamy soils. Soils types are summarized in Table 9, below.

Table 9 Soil Series within Survey Corridor			
Soil Series	Drainage	Slopes	Approximate Percentage within Survey Corridor
Williams-Bowbells loams	Well Drained	0-3% 0-6%	40%
Livona fine sandy loam	Well Drained	0-6%	14%
Appam sandy loam	Somewhat Excessively Drained	0-6%	13%
Williams-Zahl loams	Well Drained	3-6% 6-9%	11%
Livona-Zahl complex	Well Drained	0-6%	6%
Zahl-Williams loams	Well Drained	9-15% 15-60%	6%
Shambo loam	Well Drained	0-2%	4%
Wabek sandy loam	Excessively Drained	2-6%	2%
Arnegard-Shambo loams	Well Drained	2-6%	1%
Lawther silty clay	Well Drained	0-2%	<1%
Tally fine sandy loam	Well Drained	0-6%	<1%
Lihen-Blanchard loamy fine snads	Excessively Drained	6-15%	<1%
Dooley fine sandy loam	Well Drained	0-96%	<1%
Korchea-Divide loams (channeled)	Well Drained	0-2%	<1%

Soil erosion by water is not common along the pipeline route because the land is nearly level. 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 EPND's EMP (see Exhibit E).

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, EPND will segregate topsoil during trench excavation. In cropland, topsoil will be removed to 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. Heavy equipment used to

construct the pipeline may cause soil compaction along the right-of-way. Soils will be tilled with a chisel plow or other deep-tillage equipment to loosen the soil to the reasonable satisfaction of the landowner.

B.4.i Vegetation and Wildlife

Vegetation

As discussed in Sections B.4.b.(1) and B.4.j, the study area is comprised predominantly of agricultural land. Of the survey corridor, cultivated crops compromise over 65 percent. Non-agricultural areas within the survey corridor include herbaceous grasslands (28%), developed land (5%), and shrub/scrub, woody wetlands, and emergent herbaceous wetlands (less than 1% each).

The primary impact on vegetation will result from construction-related removal or disturbance of vegetation on the right-of-way. Vegetation will also be removed from areas where extra workspace is required (e.g., road and waterbody crossings).

EPND will clear the right-of-way only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline. At waterbody crossings, EPND will maintain a 20-foot-wide vegetative cover until the actual crossing of the waterbody takes place.

In areas that require permanent revegetation, EPND will specify appropriate seed mixes, application rates, and seeding dates, taking into account recommendations of appropriate state and federal agencies and landowner requests.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process. Consequently, significant changes in cover types are not anticipated.

Wildlife

As discussed in Section B.2.j of the Route Permit application and Section B.3 of the Application for a Corridor Certificate, EPND contacted NDGF and USFWS to identify known occurrences of state and federally listed threatened or endangered species and critical habitat located within the study area. Additionally, EPND commissioned a habitat assessment of the survey corridor in September/October 2010.

The assessment did not reveal threatened and endangered species or critical habitat areas of concern, and concluded the Project is not located across or near any significant ecological community and is not likely to adversely affect critical wildlife habitats. Suitable nesting habitat for migratory birds was identified within the pipeline route.

Additionally, a ground survey for tree and ground raptor nests was conducted within the survey corridor during the on-site evaluation. No raptor nests were observed during the on-site evaluation; however, the on-site evaluation was performed outside of the nesting season for migratory birds; therefore, nesting sites were not observed.

Although some loss of members of smaller, slower moving species may occur during construction, most species will move away from the right-of-way into adjacent undisturbed habitats until construction and restoration are complete. Long-term habitat availability is not expected to change as a result of the Project, as the right-of-way will be restored to pre-construction conditions to the extent feasible. Construction-related impacts on aquatic species will be temporary and limited primarily to areas immediately at or downstream from the pipeline crossings.

B.4.j Land Use

Agricultural production is the predominant land use in the study area. Principal crops in Williams County include wheat, and corn with lesser amounts of barley, dry beans, and forage crops. The Project will have only a temporary effect on agricultural land use. Crop production will be temporarily disrupted in cases where the construction period overlaps with the growing season. Landowners will be compensated for crop loss or reduced yields caused by construction of the pipeline. Deep tillage or other measures will be implemented as necessary to mitigate effects of soil compaction.

Herbaceous grassland suitable for livestock grazing is present in the study area. The primary impact would be temporary prohibition of livestock grazing in the Project area and restricted livestock movement across the Project area during construction. Given the narrow, linear nature of the Project and the alignment of the pipeline along property boundaries, where possible, livestock grazing reductions and livestock movement restrictions are expected to be minor.

Developed land (open space and low intensity) primarily associated with existing roads comprises approximately four percent of the study area. Construction of the pipeline is not anticipated to affect developed land.

Construction and operation of the pipeline will preclude future unrelated industrial development on lands occupied by the permanent maintained right-

of-way. Furthermore, after installation of the pipeline, disturbed areas will be restored to preconstruction conditions to the extent practicable, and will generally revert to preconstruction uses. Therefore, no long-term change in land use is anticipated.

B.4.k Water Resources

Groundwater

No wells will be installed or abandoned as part of this Project, nor will connection to a municipal water supply be required. Groundwater can be adversely affected by pipeline construction that involves blasting. For the Project, no blasting of bedrock is anticipated, and other construction-related disturbance of soils is not expected to adversely affect groundwater.

A potential source of adverse impacts on groundwater is the introduction of contaminants resulting from accidental spills of construction-related chemicals, fuels, or hydraulic fluid. This potential effect is greatest near water wells. EPND's EMP and SPCCP (see Exhibits E and G) describe preventative measures that EPND will implement to prevent accidental discharges of fuels or other hazardous substances, including specific storage and handling requirements. The SPCCP also describes response, containment, and reporting and clean-up procedures. With the implementation of these preventative measures, contamination of groundwater due to construction activities is not anticipated.

Surface Waters

Topographic maps and current aerial photos were reviewed to identify streams, rivers, and other drainage features. Additionally, as described in Section B.4.b.(8) above, Carlson McCain performed a wetland and waterbody delineation within the survey corridor.

The pipeline route crosses three intermittent waterbodies as described in Section B.4.b.(8)(i) above. No perennial waterbodies are crossed by the pipeline route. No state or federally designated wild or scenic rivers are crossed by the pipeline route. Given that the waterbodies are relatively minor features with only intermittent or ephemeral flow, EPND is proposing to cross the features using 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.

EPND will obtain applicable permits for waterbody crossings. A designated Environmental Representative will be retained to monitor compliance with applicable permit requirements and specifications required by EPND's EMP.

Wetlands

EPND commissioned a wetland and waterbody assessment of the survey corridor. Carlson McCain completed a wetland delineation survey along the proposed route within a 400-foot-wide survey corridor. Results of the delineation are discussed in Section B.4.b.(8)(i).

Construction of the Project will not result in the permanent drainage or filling of wetlands. EPND will implement the measures identified in its EMP to minimize adverse effects on wetlands during construction and restore wetlands following construction. Therefore, effects on wetlands are expected to be short-term and minor. During trenching, water quality of inundated wetlands will be temporarily affected due to the suspension of sediments and organic matter. Construction of the Project will result in temporary disturbance to some of the existing vegetation along the pipeline route and within the right-of-way.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural revegetation process. The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value.

Construction in wetlands may require authorization by the COE-Omaha District. EPND will obtain necessary authorization for wetland crossings. Work in wetlands will be conducted in accordance with applicable permit conditions.

Water Use

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

The Project will require temporary appropriations of water (surface/ground water or municipal source) for use in the hydrostatic testing of the newly installed pipeline. Additionally, some temporary trench dewatering may 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 NDDH under a North Dakota Pollutant Discharge Elimination System (NDPDES) general permit issued for the discharge temporary trench dewatering and hydrostatic testing activities (Permit No. NDG-07-0000). Water appropriated for hydrostatic testing will be subject to permit conditions from the NDSWC and is not expected to have environmental impacts.

Surface Water Runoff

Potential construction-related effects on surface waters are primarily related to sedimentation from uncontrolled erosion of disturbed areas. Much of the pipeline route is level or only gently sloping, which limits the potential for runoff effects. Area runoff following construction will generally reflect surrounding land use and pre-existing conditions because the right-of-way will be restored to preconstruction conditions.

EPND will obtain authorization under a general permit for Storm Water Discharges Associated with Construction Activity from the NDDH (NDPDES Permit No. NDR-10-0000). EPND's EMP (see Exhibit E), which was developed in part to meet requirements of this permit, describes best management practices which EPND will implement to minimize off-site erosion from site storm water runoff. These practices will protect surface water and soil resources within the Project area. EPND's EMP will be included in the construction specifications for the Project and enforced by the designated Environmental Representative during construction.

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 NDDH has developed a General Permit (NDPDES Permit No. NDG-070000) which authorizes the discharge of waters related to temporary dewatering and hydrostatic testing. EPND will obtain authorization for construction-related discharges and will conduct trench dewatering and hydrotest water discharges in a manner consistent with the NDPDES General Permit.

Testing and discharge are 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 NDPDES permit specifies that discharge water must be free from process and other wastewater discharge.

Protection from Fuel Spills

EPND has developed a SPCCP (see Exhibit G) to minimize the potential for accidental releases of petroleum or other substances during construction. Water resources will be protected from fuel spills by prohibiting the storage of fuel within 100 feet of a wetland or surface water body. Refueling and overnight parking of equipment will not be allowed within this zone unless, due to site-specific conditions, there is no practical alternative. EPND's EMP and SPCCP describe the protective measures that must be implemented. Contractors will be required to provide adequately trained personnel, and proper equipment and materials to contain and clean up spills of fuel, lubricating oil or hydraulic fluid that result from equipment failure.

B.4.I Cultural Resources

As described in Section B.2.i, EPND commissioned MAC to conduct a literature review and Class III inventory field survey of the Project corridor. No historic sites or structures that are listed on the National Register of Historic Places (NRHP) or the North Dakota list of historic sites are located within the area of potential effect of the proposed pipeline corridor and above ground facilities. No archaeological sites or historic architecture that is recommended eligible for listing on the NRHP will be affected by the Project.

MAC prepared a report of their methods and findings and submitted it to the North Dakota Historic Preservation Office (NDSHPO, see Exhibit C.1). The report included a recommendation for a finding of "No Historic Properties Affected" for the Project. In a letter dated November 1, 2011, NDSHPO concurred with the finding of No Historic Properties Affected (see Exhibit C.2). Further discussion is provided in Section B.1.a.(1) of the Application for a Certificate of Corridor Compatibility.

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

Complete descriptions, potential impacts, and mitigation measures relevant to the six criteria cited above are provided in Section B.4 in conjunction with the descriptions of potential impacts. Below is a discussion of additional measures EPND will employ.

B.6 MITIGATION MEASURES

B.6.a Measures to Preserve the Human Environment

EPND will require its construction contractor to clean up on a daily basis personal litter, bottles and paper deposited by right-of-way preparation and construction crews. Waste and scrap that is the product of pipeline construction will be removed and properly disposed of in accordance with applicable regulations before construction is completed.

To the maximum extent practicable, EPND will minimize noise and dust resulting from construction near residential areas.

EPND will obtain applicable permits prior to conducting road crossings. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. The pipeline will cross no paved roads or railroads. Existing gravel roads will be bored, minimizing interference with traffic flow caused by construction activities.

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

To the maximum extent practicable, EPND will restore the construction area to pre-construction contours. Restoration will be compatible with the safe operation, maintenance, and inspection of the pipeline. Measures such as slope breakers, erosion control blankets and re-vegetation will be employed to maintain the stability of slopes along the right-of-way. 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 EPND's SPCCP (see Exhibit G). The SPCCP also describes response, containment, and cleanup measures.

B.6.c Measures to Protect Soils

EPND will implement temporary and permanent erosion control measures as specified in the Project EMP (see Exhibit E). The EMP will be included in contract documents and enforced as such throughout 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 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, deep tillage, a chisel plow or other deep tillage equipment will be utilized to loosen the soil to the reasonable satisfaction of the landowner.

EPND's Designated Environmental Representative will 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

EPND will clear the right-of-way to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline. In areas that require permanent re-vegetation, EPND 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 re-vegetate after construction depending on arrangements with the landowner. Consequently, significant changes in cover types are not anticipated.

During construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. After the trench is backfilled, the topsoil will be replaced to facilitate the natural re-vegetation process.

EPND will take appropriate precautions to protect livestock and crops affected by construction. Operation of the pipeline is not anticipated to

significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored by EPND to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

B.6.e Measures to Protect Land Use Permits

EPND will obtain and comply with applicable county permits regulating zoning and land use. These permits may include, but are not limited to grade and fill permits, ditch crossing permits, road and utility permits and conditional use permits. EPND will retain a Designated Environmental Representative to monitor compliance with environmental conditions of county permits.

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

The pipeline will be installed at a minimum depth of 4 feet 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 protected by EPND to the extent possible in a manner compatible with the safe operation, maintenance, and inspection of the pipeline.

B.6.f Measures to Protect Water Resources

EPND will obtain applicable permits for crossing wetlands and waterbodies and for water appropriations related to hydrostatic testing and trench dewatering. A Designated Environmental Representative will monitor compliance with applicable waterbody and wetland protection requirements during construction of the facilities.

Measures to protect water resources have been discussed throughout this application. EPND's EMP describes these measures in detail, and contains illustrations of how sediment control devices are typically installed at waterbody crossings. Additionally, EPND will maintain a 20-foot-wide vegetative buffer until the actual crossing of the waterbody takes place. Temporary sediment control measures such as silt fence, installed at each crossing will minimize the introduction of sediment into waterbodies during construction and minimize the movement of spoil and sediment from surface runoff during and after construction. Permanent erosion control measures, such as vegetation and installation of slope breakers, will effectively stabilize

riparian zones. EPND will stabilize stream banks disturbed during construction using methods as directed by applicable state and/or federal permits.

For open-cut crossings, “hard plugs” of soil prevent the flow of water from the waterbody into the adjacent trench and the migration of sediment from the adjacent trench into the waterbody. After the pipe is installed, the trench will be backfilled in such a manner to restore the natural contours of the waterbody to the extent practicable. EPND is proposing to open-cut the three intermittent waterbodies crossed by the route.

Wetland crossings will be conducted in accordance with applicable regulatory requirements. If construction mats or timbers are placed in wetlands to support equipment, they will be removed after construction is completed. In order to maintain surface water hydrology within wetlands, preconstruction contours will be restored and no crown will be left over the trench. If there is a potential for a wetland to be drained by trenching, trench plugs will be installed as needed at the edge of a wetland. In unsaturated wetlands, topsoil will be replaced to facilitate the natural revegetation process.

EPND’s EMP and SPCCP specify several measures to protect wetlands and waterbodies from becoming polluted with fuels or other hazardous materials during construction. These plans prohibit the storage of fuel or other hazardous materials within 100 feet of a wetland or waterbody. The EMP also specifies that equipment must be refueled at least 100 feet from waterbodies unless, due to site-specific conditions, there is no practical alternative. In that case, the contractor must implement site-specific protective measures and containment procedures described in the SPCCP. Contractors will be required to provide trained personnel, appropriate equipment and materials to contain and clean up spills of fuel, lubricating oil or hydraulic fluid that result from equipment failure.

Water appropriations for hydrostatic testing will be conducted in accordance with applicable permits. EPND will conduct trench dewatering and hydrostatic test discharges in a manner consistent with the NDPDES General Permit NDG-070000. EPND’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 EPND and applicable permits authorize such additives. A Designated Environmental Representative 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

Cultural resources studies sponsored by EPND determined that no cultural resources are located within the survey corridor. NDSHPO concurred with these findings in a letter dated November 21, 2011 (see Section B.1.a.(1) of the Application for a Certificate of Corridor Compatibility).

There is always the potential during construction to encounter previously unknown cultural resources or human remains. In the event an unanticipated discovery is encountered, EPND would implement the following mitigation measures to minimize the potential impacts on unanticipated discoveries:

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

B.7 QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

See Section D.6 of the Application for Corridor Certificate.

B.8 MAPS

See Section D.7 of the Application for Corridor Certificate.

B.9 OTHER MATTERS

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

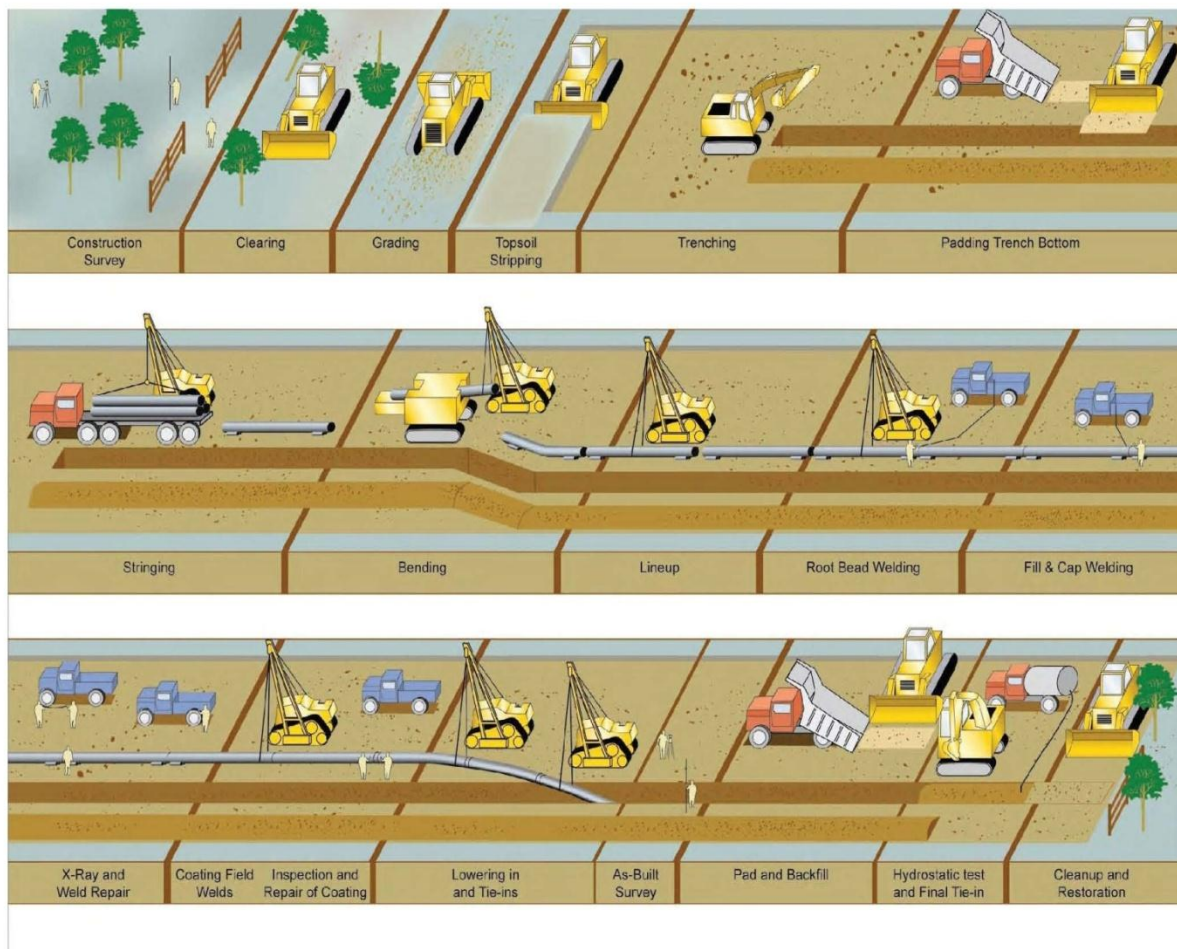
B.9.a Right-of-Way Preparation, Construction and Reclamation Procedures

This section provides a general overview of the typical construction sequence for a pipeline. **Figure 1** shows the typical steps of cross-country pipeline construction. Standard pipeline construction proceeds in the manner of an outdoor assembly line composed of specific activities that make up the linear construction sequence.

These operations collectively include survey and staking of the right-of-way, clearing and grading, topsoil stripping, pipe stringing and bending, welding and coating, trenching, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration and revegetation.

Figure 1

Typical Pipeline Construction Sequence



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

Before construction, EPND crews will survey and stake the location of the pipeline and the exterior boundaries of the construction right-of-way. 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.

During this period, equipment involved in pipeline construction will be moved onto the right-of-way using existing roads for access wherever practicable.

B.9.a.(2) Clearing and Grading

EPND will clear the 110-foot wide construction right-of-way and additional temporary extra workspaces 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 the Company unless other arrangements are made with the landowner.

Following clearing, grading of the ground surface may be done to provide a relatively smooth working surface and a safe working area. Typically, a 20-foot wide buffer will be left relatively undisturbed at waterbody crossings, except where grading is needed for bridge installation, until immediately before the pipelines are installed across the waterbody.

Following clearing and grading, temporary bridges will be installed at waterbodies, except for drainage ditches, intermittent waterbodies, and other non-fisheries water, along the pipeline route to provide temporary access for equipment traveling along the construction right-of-way. In addition, temporary erosion control measures will be installed in accordance with EPND's EMP (see Exhibit E).

B.9.a.(3) 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 pipeline route in accordance with EPND's EMP. In unsaturated wetlands, topsoil will also be stripped up to maximum of 12-inches in trench areas. Topsoil will be stripped to a maximum depth of 12-inches in cultivated lands.

B.9.a.(4) Stringing and Bending

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 right-of-way. Small portable cranes and/or side-boom tractors are used to unload the stringing trucks and place pipe along the right-of-way. 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.(5) Welding and Coating

After stringing and bending are complete, pipe sections will be aligned, welded together, and placed on temporary supports along the edge of the trench. EPND will inspect the welds, both visually and radiographically. The pipe is typically delivered with a factory coating of fusion-bonded epoxy or similar material to prevent corrosion. EPND will apply coating at welded joints and will electronically inspect the pipeline coating before the pipe is lowered into the trench.

B.9.a.(6) Trenching

Backhoes and/or ditching machines will be used to excavate trenches in accordance with the United States Department of Transportation, which stipulates a minimum three feet 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 unstable or saturated soils.

Where trench dewatering is needed, water will be discharged directly to the ground with the use of velocity control if there is adequate vegetation along the right-of-way 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.(7) Lowering In, Padding, and Backfilling

After welding and coating are completed and the trench is excavated, the pipe will be lowered into the trench by side-boom tractors. 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.(8) Hydrostatic Testing

After backfilling, EPND will hydrostatically test the pipeline in accordance with PHMSA's 49 CFR Part 195 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 pipelines will be consistent with state regulations and EPND's EMP. (see Exhibit E). EPND will obtain hydrostatic test water from municipal sources or suitable water source along the pipeline 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 EPND's EMP and permits issued by state agencies.

B.9.a.(9) Clean-up

After the backfilling is completed, EPND will regrade and restore work areas as nearly as practicable to the original contour of the land. Topsoil will be redistributed over areas from which it was originally removed. Permanent soil stabilization efforts will primarily include revegetation of the right-of-way. Fences that are removed to install the pipelines will be reconstructed.

B.9.a.(10) Restoration and Revegetation

Following installation and final cleanup of the pipelines, 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 recommendations and site-specific landowner requests.

B.9.b Landowner Issues

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

EPND engages experienced land agents to support the land acquisition efforts for its projects. Landowners along the 6-mile line segment of this Project will be personally contacted to obtain rights-of-way. EPND's land agents have previously received 100% survey permission to perform environmental survey work activities. In addition to the project information that has been provided and discussed with landowners, EPND is committed to keeping landowners informed about the Project, including throughout construction and cleanup. EPND has secured an option agreement to purchase the land needed for the Little Muddy Pump Station site. EPND's land agents will soon begin direct negotiations with landowners to secure option agreements for the new pipeline easements needed for the Little Muddy Pipeline.

B.9.c Operations and Safety

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

EPND's pipeline control center is located in Estevan, Saskatchewan.

The Control Center is manned by pipeline operators 24 hours a day. A computerized pipeline control system allows these operators to remotely monitor and control the pipeline and related facilities. 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. The computerized pipeline control system has been designed to control the pipeline within pre-established minimum and maximum operating pressures. Both the computer system and operating practices include procedures for abnormal operating conditions, including emergency shutdown and isolation of the pipeline and notification procedures in the event of suspected emergencies.

B.9.c.(2) Communications Capabilities

Land lines are used to exchange the necessary computerized data for pipeline monitoring and control. EPND maintains a UHF radio system, supplemented by cellular phones, to facilitate personnel communications during operation, maintenance, or emergency activities.

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

EPND has an aggressive program in educating excavators and the public about the presence of the pipeline and preventing damage to the pipeline from excavating equipment. As in all other states where EPND and affiliates have existing facilities, EPND has joined and supports the North Dakota One-Call system.

The pipeline is protected from corrosion in a number of ways, as discussed in Sections B.4.b.(11); B.9.a(5) and B.9.c(5) of this application. Pipelines are also covered with a protective coating. Moreover, all buried or submerged metallic structures (pipeline systems) are under a cathodic protection system, as required by Pipeline Safety Regulations.

B.9.c.(4) Inspections

EPND conducts routine inspections of the pipeline and facilities to ensure that the system is operating properly, in compliance with 49 CFR Part 195.

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 ground bed used to impose cathodic protection on the pipeline and associated below-grade facilities 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. Abnormalities or deficiencies are corrected if necessary.

In addition, EPND 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. Although not required by regulation, this method allows EPND to assess the overall effectiveness of the pipeline system.

The pipeline route including pump stations and related facilities is patrolled by air at least 26 times per year to inspect the surface conditions of land on or adjacent to the pipeline right-of-way. If weather and other conditions

permit, this aerial inspection is conducted weekly. Line walking inspection of the right-of-way is sometimes used to supplement aerial inspections in congested areas. This inspection also assists in identifying unknown construction or other unsafe activity on the pipeline right-of-way.

Transmission pipeline isolating valves are inspected 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 petroleum that may escape. Other components of the pipeline, such as tanks and pump stations are also routinely inspected.

EPND periodically completes an integrity assessment test on the transmission segments of its pipeline system designated as high consequence areas (HCA), in accordance with the integrity management standards under 49 CFR Part 195. Enbridge exceeds these regulations by expanding these assessments with the use of internal electronic inspection tool – called “instrument pigs.” These devices are equipped with computers and travel through the inside of the pipeline examining the pipe’s condition , i.e., detecting dents, gouges, corrosion, cracks or other anomalies in the pipe. Afterwards, inspection results are analyzed, the pipe is inspected to verify preliminary findings, as necessary, and repairs are then made, as required.

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

Periodically, inspectors from the PHMSA inspect EPND’s compliance with applicable federal regulations. PHMSA inspectors also periodically inspect EPND’s written procedures, records, facilities and new construction.

B.9.c.(5) Maintenance

Many other maintenance activities are performed on the pipeline and related facilities. EPND has a comprehensive preventative maintenance program that meets, and in many cases exceeds, minimum federal safety standards set forth in 49 CFR Part 195. When facilities are added or replaced, there are comprehensive standards for their design and installation in both EPND 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 DOT-PHMSA inspectors.

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

EPND has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued 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 maintain safe pipeline operation and maintenance.

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

EPND carries out a continuing and comprehensive public awareness program to increase awareness of pipelines among affected public (those who live, work and congregate in the vicinity of the pipeline), school districts, excavators, farmers, local public officials and emergency officials. The objectives of Enbridge's public awareness program is to provide information on pipeline operations, how to recognize and respond to a pipeline emergency, the importance of calling 811 before beginning any digging project, and our commitment to safety and damage prevention. EPND has also been active at the local, county and state level in emergency response planning and frequently conducts joint training/exercises to prepare potential responders to deal with emergencies.

The pipeline route is marked at all public roads 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 pipeline route.

B.9.c.(8) Emergency Preparedness

EPND's operating and maintenance practices are aimed at preventing emergencies. However, it is imperative that EPND be prepared to respond to an emergency. In addition to preventative activities described above, EPND's emergency response program has been prepared in compliance with DOT-PHMSA rules under 49 CFR Part 194. The Emergency Response Plan has been submitted, and approved by DOT-PHMSA and includes pre-planning, control point identification, notifications, and emergency and leak containment procedures.

B.9.d.(9) Spill Response

EPND has developed a SPCCP (see Exhibit G) that describes planning, prevention and control measures to minimize impacts of project-related spills.

B.9.e Status of Required Permits

As discussed herein, EPND is presently working with various federal, state and local agencies to secure the appropriate permits required for the Little Muddy Station Connection Project. See Table 10 which shows EPND's current status in obtaining those permits.

Table 10	
Status of Environmental Permits	
Permit/Authorization	Status of Permit/Authorization
FEDERAL	
1. US Army Corps of Engineers (COE) Omaha District – Nationwide Permit	Anticipated Submittal: January 2012 Anticipated Issuance: April 2012
2. COE-Omaha District/North Dakota State Historic Preservation Office (NDSHPO) National Historic Preservation Act (NHPA), Section 106 Compliance	EPND has completed cultural surveys on the proposed route and has consulted with the NDSHPO. In an November 1, 2011 response, NDSHPO concurred with a “No Historic Properties Affected” determination.
3. US Fish and Wildlife Service Agency (USFWS) – Endangered Species Act Section 7 Compliance	Consultation initiated September 2011. A response has not yet been received.
4. USFWS - Wetland and Grassland Easements	Consultation initiated September 2011. A response has not yet been received.
STATE	
1. North Dakota Department of Health (NDDH) Individual Section 401 Water Quality Certification	Submittal concurrent with COE Individual 404 Permit Anticipated Issuance: April 2011
2. NDDH - Air Quality Permit to Construct	Anticipated submittal: 1 st Quarter 2012 Anticipated issuance: 2nd Quarter 2012
3. NDDH – Air Quality Permit to Operate	Anticipated submittal: 3rd Quarter 2012 Anticipated issuance: 4th Quarter 2012
4. NDDH - Construction Stormwater and Temporary Dewatering General Permit (NDR10-0000) and Stormwater Pollution Prevention Plan (SWPPP)	Anticipated submittal: March 2012 Anticipated issuance: April 2012
5. NDDH - Hydrostatic Discharge Permit (General Permit NDG-070000)	Anticipated submittal: 3 rd Quarter 2012 Anticipated issuance: 4 th Quarter 2012
6. North Dakota Game and Fish (NDGF) – State-Protected Species and Critical Habitat Review	Consultation initiated September 2011 Response received on October 24, 2011surve
7. North Dakota State Water Commission (NDSWC) - Temporary Water Permit/Water Withdrawal Permit	Anticipated submittal: 3 rd Quarter 2012 Anticipated issuance: 4 th Quarter 2012