Pipeline Route Application

Palermo to Enbridge Crude Oil Pipeline
Mountrail County

September 2015

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INTRODUCTION

Sacagawea Pipeline Company, LLC ("Sacagawea"), submits this Route Permit Application to the North Dakota Public Service Commission ("Commission" or "PSC") for the proposed construction of a 12-inch crude oil pipeline approximately 8 miles in length located in Mountrail County, North Dakota. The pipeline will be known as the Palermo to Enbridge Pipeline Project ("Project"). The proposed pipeline would originate at the Palermo Rail Facility owned by Phillips 66 Partners Terminal, LLC in Mountrail County and terminate at the Enbridge Crude Oil Terminal located in Stanley, North Dakota also in Mountrail County.

The Project is needed to address transportation of growing volumes of crude oil. The pipeline system will be constructed to allow crude to flow in either direction. This feature allows for greater flexibility and access to more sales points depending on market conditions, and acts as a balancing point allowing the best price for North Dakota crude producers. The interconnection with the Enbridge Crude Oil Terminal will allow access to all of Enbridge North Dakota's existing pipeline as well as the Sandpiper Pipeline, which has an anticipated in-service date of 2017. Enbridge also operates a crude oil rail terminal at Berthold. The Project, with its interconnections to rail terminals and other pipeline systems will provide access to multiple refinery markets throughout the United States.

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

SECTION A DESCRIPTION OF FACILITY

A.1 Type of Facility

The Project will involve approximately 8 miles of pipeline installation. The pipeline system will be constructed to allow crude to flow in either direction. This feature allows for greater flexibility and access to more sales points depending on market conditions, and acts as a balancing point allowing the best price for North Dakota crude producers. The purpose of the Project is to transport crude oil either from the Palermo Rail Facility to the Enbridge Crude Oil Terminal located in Stanley, North Dakota, or from the Enbridge Crude Oil Terminal to the Palermo Rail Facility. The Project is needed to address transportation of growing volumes of crude oil. The interconnection with the Enbridge Crude Oil Terminal will allow access to all of Enbridge's existing pipeline as well as the proposed Sandpiper Pipeline, which has an anticipated in-service date of 2017. The Project, with its interconnections to rail terminals and other pipeline systems will provide access to multiple refinery markets throughout the United States.

The Project would originate at the Palermo Rail Facility owned by Phillips 66 Partners Terminal, LLC and terminate at the Enbridge Crude Oil Terminal located in Stanley, North Dakota. The Project is entirely located within Mountrail County, North Dakota. Figure 3.A.1 shows the general location of the proposed Project.

Surface facilities to be installed along the route will be limited to one block valve, check valves, pig launchers and receivers, pipeline markers, and rectifiers. The above ground block valve will

be installed at the midpoint of the Project within the ROW. This block valve will have the capability of being operated remotely.

The Palermo Rail Facility and the Enbridge Crude Oil Terminal are existing above-ground sites and the addition of the equipment for the Project will result in minimal additional visual impacts. Above ground facilities at the Palermo Rail Facility will include a valve and pumping equipment. Above ground valves and meters will be installed at the Enbridge Crude Oil Terminal.

The total cost of the Project is estimated to be $18 million.

A.2 Product

The Project will provide pipeline transportation for produced crude oil. The product is expected to be light sweet common crude. This specification is consistent with the quality of crude oil produced from the Bakken formation, which is currently the largest exploration play in the region.

A.3 Size and Design

The proposed Project will result in construction of a new crude oil transmission pipeline approximately 8 miles in length. The steel pipe utilized for construction of the Project will meet United States Department of Transportation ("US DOT") regulations, specifically the design criteria outlined in 49 C.F.R. Subpart 195(C). The Project will be constructed per 49 C.F.R. Subpart 195(D). The Project will be operated and maintained per 49 C.F.R. Subpart 195(F).

Construction of the Project will involve the installation of 12-inch nominal diameter, steel, X-52 pipe with a nominal wall thickness of 0.312 inches. The maximum operating pressure ("MOP") of the pipeline is 1,440 pounds of pressure per square inch gauge ("psig").

Valves will be 12-inch ANSI 600 manufactured in accordance with American Petroleum Institute ("API") Standard 6D "API Specification for Steel, Gate, Plug, Ball and Check Valves for Pipeline Service." Valves will be installed to US DOT regulations. The MOP of the valves is 1,440 psig.

The maximum temperature of the crude will be 120°F, which is within design parameters. The Project will typically operate between 60°F and 120°F.

Capacity of the Project will be 100,000 barrels per day ("bbls/day") of oil.

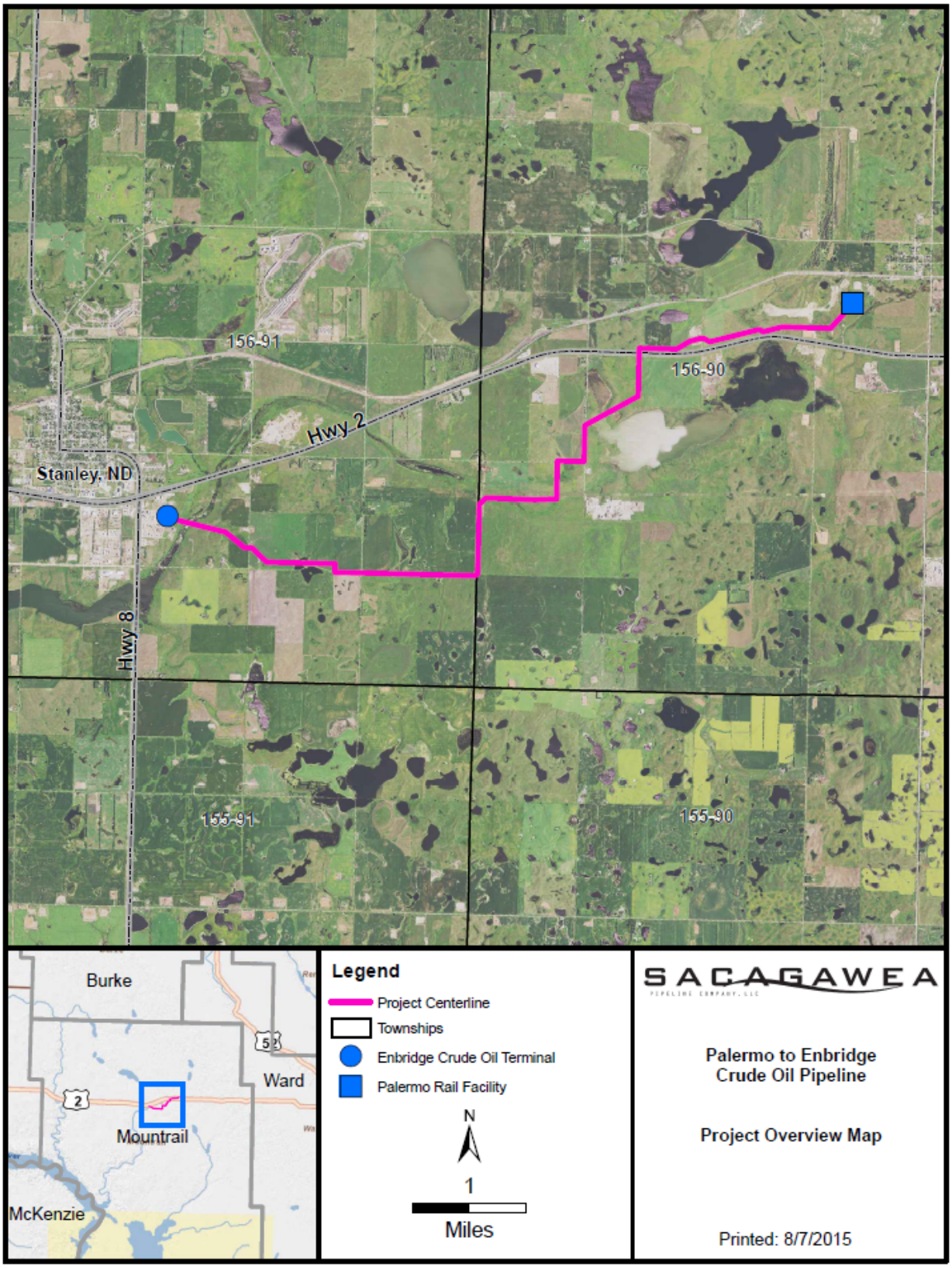

FIGURE 3.A.1 – General Project Location Map

A.4 Time Schedule

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

A.4 (a) Certificate of Corridor Compatibility

The Certificate of Corridor Compatibility Application is being submitted in September of 2015 as part of this Consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (b) Route Application

The Route Permit Application is being submitted in September of 2015 as part of this Consolidated Certificate of Corridor Compatibility and Route Permit Application.

A.4 (c) Right-of Way Acquisition Date

Right-of-Way acquisition is anticipated to be completed by October of 2015.

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

A Certificate of Corridor Compatibility and a Route Permit for the Project are expected to be issued in December of 2015.

A.4 (e) Construction Start Date

Construction is expected to begin in the first quarter of 2016.

A.4 (f) Construction Complete

Construction for the Project is anticipated to last approximately two to three months following application approval.

A.4 (g) Test Operations

Test operations will occur following construction of the proposed Project.

A.4 (h) In-Service Date

All facilities are estimated to be in-service in or before June of 2016.

SECTION B ROUTE ANALYSIS AND STUDIES

A number of criteria, including but not limited to the criteria required by Section 69-06-08-02 of the North Dakota Administrative Code, were considered in evaluating the location of the Project route, specifically: Exclusion and Avoidance Areas, Selection and Policy Criteria, Design and Construction Limitations, Economic Considerations, Human Environment, Soils, Vegetation/Wildlife, Land Use, Water Resources, and Cultural Resources. Each criterion is discussed in detail, including descriptions, potential impacts, and mitigation measures where appropriate, in Section B involving analysis and studies, or in Section C regarding siting criteria.

Analysis of the Project entailed both desktop studies and field surveys. A 1-mile-wide study corridor was utilized for the entire Project route ("study area"). Surveys were conducted along the entire route in the field on foot within the specified survey corridor ("survey area"). Survey areas ranged from 300-feet-wide to 1-mile-wide, depending on the survey subject. Survey corridor widths are as follows: 300-foot-wide Class III survey corridor for cultural resources, 500-foot-wide survey corridor for vegetation, 1-mile-wide survey corridor for raptors, and a 1-mile-wide survey corridor for wildlife.

The proposed Project route has been superimposed on both aerial photographic maps as well as U.S. Geological Survey ("USGS") Topographic Maps that are presented in Tab 4 as Appendix 4.B, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

The proposed Project will be subject to approval and permit conditions from other regulatory offices that have jurisdiction over portions of construction. Table 3.B.1 shows the status of other federal, state, and local permits that have been, or will be applied for, prior to the applicable aspect of construction.

TABLE 3.B.1 – Project Permit Status

Permit	Agency	Application Submitted	Status
US ACE Nationwide 12 Permit	US Army Corps of Engineers	8/19/2015	Acknowledgement received. File number: NWO-2015-1520-BIS
HWY 2	ND DOT	Submitted	Waiting until contractor is picked.
Idaho Organized Civil Township Road/Section Crossing	Idaho Township (156N 91W)	Will be submitted prior to construction	Notification Letters Sent 6/15/15 Updated 8/24/15
Palermo Organized Civil Township Road/ Section Crossing	Palermo Township (156N 90W)	Will be submitted prior to construction	Notification Letters Sent 6/15/15 Updated 8/24/15
Hydrostatic Water Discharge Permit	NDDH	Will be submitted prior to discharge, as necessary	
Stormwater Permit (NOI)	NDDH	Will be submitted at least 7 days prior to construction	
SWPPP Plan	NDDH	Will be prepared prior to construction	

B.1 Location

B.1 (a) Sacagawea's Policies and Commitments to Limit Environmental Impact

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

Environmental monitoring, in the form of ongoing environmental inspection, will be conducted during and following construction. Environmental inspectors 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 environmental inspectors will be trained and well-versed in the implementation of environmental best management practices during construction. Contract specifications will incorporate environmental protection and mitigation measures, and contractors will be expected to implement these measures in the field.

Section D of this application further discusses mitigation measures to be implemented for planning, design, construction, and restoration of the proposed Project.

B.1 (b) Construction

Construction of the Project will involve installation of a 12-inch steel pipe in a newly acquired ROW located in Mountrail County, North Dakota. Construction of the Project will result in temporary short-term impacts, but is not expected to result in significant long-term changes to the environment.

The permanent ROW for the Project will be 50 feet wide. During construction, an additional 50 feet of temporary workspace may be utilized for material staging and temporary access roads. Sacagawea plans to use existing public roads to access the 100-foot-wide construction ROW and does not plan to modify roads or create new permanent access roads.

The Project will be located primarily on private land. Landowner concerns will be addressed during all phases of construction, including final restoration. Land agents assigned to the Project will work closely with landowners and will be responsive to issues that arise during the course of construction.

B.1 (c) Ongoing Pipeline Operation

Sacagawea has a continuing commitment to conduct its operations in an environmentally responsible manner. Substantial, continual effort is placed on pipeline integrity, operational safeguards, emergency response, and landowner relationships, all of which reduce the impact of the Project on the environment. Sacagawea supplements the support of its existing internal environmental staff with engineering and environmental consultants as necessary to ensure compliance with regulations and applicable company policy. Additional information regarding operations and safety is provided in Section G.3.

B.1 (d) Energy Conservation Considerations

The Project will expand Sacagawea's service area while improving crude oil delivery destination options for system shippers.

The key energy economic impact will be the substitution of the most energy efficient mode of crude oil transportation, i.e., pipeline, for the least efficient mode of transportation, i.e., on-road transport via cargo tanker truck. The Project will add 100,000 bbls/day of capacity to the system.

Beyond the direct energy benefit of using an efficient mode of transportation (e.g., a pipeline), energy conservation is a major concern for Sacagawea. Power/energy costs represent the largest single recurring expense in pipeline operation. Attention is continually being directed toward energy conservation. Sacagawea's energy conservation goal is to minimize power/energy unit costs through the implementation of internal programs directed at continuous improvement of energy utilization efficiency.

Phillips 66 will be the operator of the pipeline. Phillips 66 control operators are trained in applied hydraulics and pipeline control. They are trained to operate the pipeline at a natural flow rate using efficient combinations of pump stations, thereby minimizing energy consumption. Operators have the capability to start and stop pumps and monitor pipeline operating conditions to assist in achieving an energy efficient operation.

B.2 Human Environment

The Project study area is sparsely populated, with ranching and farming as the predominant economic activities. The route does not pass through parks or recreational areas.

The Project route does not pass within 500 feet of any occupied residences. The majority of the pipeline route is located on private land. Landowner concerns and routing preferences will be addressed during all phases of construction, including final restoration. Land agents assigned to the Project work closely with landowners and will be responsive to issues that arise during construction to the extent practicable. Sacagawea is working on finalizing easement agreements with all landowners along the route.

No municipal water supplies were identified within the study area.

Road crossings for the Project are summarized in Table 3.B.2. The Project transects U.S. Highway 2. A permit will be acquired from the ND Department of Transportation for this crossing. Of the remaining roads crossed, 6 are improved roads (i.e., gravel), 1 is a two-track trail, 2 are section lines only (with no road), and 1 is a private drive. For construction of the Project, improved roads will be crossed via horizontal directional drilling or boring. Through traffic will not be disrupted during the boring process. Two-track vegetated trails and section lines may be open cut. The open cut trails may be temporarily disrupted during construction. The private drive crossing will be negotiated with the landowner to minimize disruptions.

All roads and section line crossings are subject to review and approval by the County Engineer and County Commission. Necessary applications will be submitted and permits obtained for the road crossings prior to the start of construction.

TABLE 3.B.2 – Project Road Crossings

Legal Description	Coordinates	Road Name	Description of Road
Mountrail County			
SESE S27 T156N R91W	48°18'3.24"N 102°21'12.36"W	80th AVE NW	Gravel
SESE S26 T156N R91W	48°17'53.54"N 102°20'12.85"W	61st ST NW	Gravel
NENE S35 T156N R91W	48°17'52.66"N 102°19'54.23"W	79th AVE NW	Gravel
NENE S36 T156N R91W	48°17'52.08"N 102°18'36.07"W	No Road	Section Line
NWNW S31 T156N R90W	48°17'53.53"N 102°18'34.75"W	61st ST NW	Two-Track
NENE S30 T156N R90W	48°18'45.67"N 102°17'41.71"W	62nd ST NW	Gravel
NESE S19 T156N R90W	48°19'0.23"N 102°17'23.41"W	Private Drive	Gravel
NESE S19 T156N R90W	48°19'3.30"N 102°17'22.06"W	77th AVE NW	Gravel
NENW S20 T156N R90W	48°19'35.69"N 102°16'47.14"W	U.S. Highway 2	Paved
SESE S17 T156N R90W	48°19'43.96"N 102°16'4.22"W	Prairie Trail	Gravel
SESE S16 T156N R90W	48°19'49.98"N 102°14'45.88"W	No Road	Section Line

B.3 Terrain and Geology

The Project study area is located in the glaciated Missouri Plateau section of the Great Plains Physiographic Province in western North Dakota. The Missouri Plateau (Coteau du Missouri) is characterized by low relief and gentle slopes interrupted by buttes and ridges. In the glaciated section, the drift is generally thin except for valley fill so the topography reflects the pre-glacial topography. Major drainages are the Missouri, Yellowstone, and Little Missouri Rivers. The Missouri River formed when glaciers blocked the northeastward flowing drainages and diverted drainage flowing southeastward along the margin of the glacier. The Little Missouri River flowed northward in the valleys now occupied by Red Wing Creek and Tobacco Garden Creek prior to glaciations. Subsequently it was diverted eastward from Red Wing Creek. Similarly, the Yellowstone River flowed through the Charbonneau Creek-Timber Creek Valley prior to glaciations. The process of adjustment to the lowered base level of the Missouri River is developing a band of badlands along these drainages.

The Project study area is located entirely in the Williston Basin, a large elliptical depression bounded by the Canadian Shield (northeast), Alberta Shelf (northwest), Black Hills (southeast), and Wisconsin Dome (southwest). The Williston Basin covers about 300,000 square miles.

The Williston Basin is a structurally simple basin, deepest at its center (16,000 feet below the surface near Williston, North Dakota), becoming shallower and thinner towards its edges.

The Project route traverses various bedrock and surface geology including the Coleharbor Formation, Sentinel Butte Formation, and Bullion Creek Formation. Bedrock is exposed along the major drainages in Mountrail County near the Missouri River. Other than these major drainages where bedrock forms the surface material, only formations above the Cannonball Formation are exposed at the surface in Mountrail County.[1] In addition to bedrock, the Project study area includes many surficial geological materials, including: Quaternary alluvium, colluviums, and glacial till (sand, gravel, and clay). The near surface sediment is of Recent, Pleistocene, or Tertiary age. Recent sediment consists of alluvium or colluvium which is generally confined to lowland areas of current Pleistocene drainage. Pleistocene sediments consist of till on the upland areas and water-sorted sediment in and along glacial drainages.

Surface elevations along the route range from approximately 1,900 feet to 2,400 feet.

B.3 (a) Geologic Hazards

Potential geologic hazards along the Project route include seismic hazards, landslides, subsidence, and flooding. Because the Project is located in relatively flat and stable terrain as opposed to active mountain belts or coastal areas, the potential for geologic hazards is reduced.

Seismic Hazards

There are three major phenomena associated with seismic hazards: faults, seismicity, and ground motion. A fault is a fracture along which the blocks of crust on either side have moved relative to one another parallel to the fracture. Rapid slippage of blocks of crust past each other can cause energy to be released, resulting in an earthquake. No active faults have been identified in the Project study area, according to the U.S.G.S. Geologic Hazards Science Center.[2] An active fault is one in which movement can be demonstrated to have taken place within the last 10,000 years.

North Dakota historically contains little earthquake activity and is therefore not in an area of seismicity. No earthquakes of intensity V or above (Modified Mercalli Scale) have occurred within North Dakota during historical times. Furthermore, using the U.S. Geological Survey 2009 PSHA Model for predicting probabilities of earthquake occurrence and magnitude, there is less than a 2 percent chance of an earthquake occurring within the Project study area within the next 50 years.

The USGS ground motion hazard mapping indicates that potential ground motion hazard in the Project study area is low. The hazard map uses estimated peak ground acceleration expressed as a percentage of the acceleration due to Earth's gravity. According to the ground motion

[1] Lee Clayton, *Geology of Mountrail County North Dakota*, North Dakota Geological Survey Bulletin 55-IV, North Dakota State Water Commission County Ground Water Study 14-IV (1972).

[2] U.S. Geological Survey, Geologic Hazards Science Center, Quaternary Fault and Fold Database of the United States, *available at* http://earthquake.usgs.gov/hazards/qfaults (accessed March 2, 2015).

hazard map there is a 2 percent probability of exceedance in 50 years; furthermore, the map predicts the most likely exceedance to be minor.[3]

Landslides

Landslides can be defined as gravity-caused mass movements of earth material. Included in this definition are rock falls, slumps, rock slides, mud slides, and debris flows. Landslide risks are highest in areas with steep slopes, and typically occur on steep terrain during conditions of partial or total soil saturation. In areas with landslide risk, anything impacting slope condition, such as seismic activity, construction, and increased soil moisture all aid in increasing mass movements. Landslide susceptibility is defined as the probable degree of response of the areal rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. The Project study area is located in low landslide incidence terrain.

Subsidence

Subsidence, a gradual settling or sudden sinking of earth's surface, is not a major concern along the Pipeline route. Subsidence is commonly caused by underground mining, drainage of organic soils, thawing permafrost, natural compactions, and depletion of aquifer systems. In the Project area, the only potential concern is underground mining. Because no mines exist within the pipeline construction corridor, the concern for subsidence is minimal.[4]

Flooding

In North Dakota, most flooding occurs in the spring, when the winter snow cover melts. While flooding is generally considered a geologic hazard, the potential for a flood to negatively impact the Project is minimal. The pipeline will be waterproof and, thus, the only hazard that exists is scouring.

For a flood event to affect the pipeline, 4 to 6 feet of the surface must be displaced. All streams crossed for construction of the Project are minor in size. Even flood events are not expected to present a scour risk in streams of this size. In addition, inspection of pipeline routes required under US DOT Part 195 will include a regular assessment for impacts due to flooding.

Following construction of the Project, control of surface soil erosion will be proactively managed while awaiting re-vegetation. Repair to soil cover will continue to occur until re-vegetation is complete.

B.4 Soils

Detailed soil characteristics along the Project route were identified and assessed using the Soil Survey Geographic database ("SSURGO;" U.S. Department of Agriculture ("USDA"), Natural Resources Conservation Service ("NRCS"), 2003). The SSURGO database is a digital version of the original county soil surveys developed by the NRCS for use with geographic information

[3] U.S. Geological Survey, Geologic Hazards Science Center, *available at* http://geohazards.usgs.gov/hazards/apps/cmaps/ (accessed July 24, 2015).

[4] U.S. Geological Survey, Mineral Resources Data System (MRDS), Mineral Resource Data for North Dakota, *available at* http://tin.er.usgs.gov/mrds/.

systems ("GIS"). It provides the most detailed level of soil information for natural resource planning and management. The mapping scale in the Project study area is 1:20,000, with a minimum delineation size of 4.0 acres. SSURGO is linked to an attribute database that gives the proportionate extent of the component soils and their properties for each map unit (USDA, NRCS 1995). The SSURGO database was used to define soil characteristics along the Project route in Mountrail County. SSURGO attribute data consist of physical properties, chemical properties, and interpretive groupings. Attribute data apply to the whole soil (e.g., listed hydric, prime farmland soils, slope class) as well as to layer data for soil horizons (e.g., texture, permeability). The soil attribute data can be used in conjunction with spatial data to describe the soils in a particular area.

The Project study area is located in the Central Dark Brown Glaciated Plains (Major Land Resource Area 53B) belonging to the Northern Great Plains Spring Wheat Region. The Project study area lies within the Glaciated Missouri Plateau Section of the Great Plains Physiographic Province.

The soils in the Project study area range from having course to fine loamy and fine silty soils.

Wind erosion may be a hazard on most of the soils in the Project area. Wind erosion is severe on the coarse textured and moderately coarse textured soils. Certain soils have a relatively high content of lime. They are susceptible to wind erosion in the spring if they have been bare throughout the winter. Because of freezing and thawing, soil structure can break down, resulting in aggregates that are susceptible to movement. This phenomena can also cause fine textured soils to have a severe wind erosion hazard. Nearly all soils can be damaged by wind erosion if they are not protected by residue. Precautions outlined in the Construction, Mitigation, and Reclamation Plan ("CMRP") found in Tab 6 will be implemented for construction to minimize impacts.

Potential temporary effects on soil resources include the loss of soil productivity due to erosion, soil mixing, or soil compaction. Soil disturbances associated with clearing, grading and trenching expose soils to water and wind and increase the potential for erosion. Analysis of State Soil Geographic ("STATSGO") data indicates that soils in the study area are susceptible to erosion by wind. Soil erosion by water is also common along the route. During construction, the effects of erosion by water on steep slopes will be mitigated by the use of silt fences and other erosion control measures as described in Sacagawea's CMRP (see Tab 6).

Soil productivity could potentially be affected if topsoil is mixed with subsoil during construction. To minimize this potential, topsoil will be segregated during trench excavation. Topsoil will be removed to a depth of 12 inches from the trench and spoil storage area unless otherwise requested by the landowner. Topsoil is stored separately from the trench spoil and will be returned to its approximate original location after the trench is backfilled.

Construction may cause temporary removal of vegetation and may result in temporary exposure of soil. These actions may result in some minor temporary erosion. Re-vegetation of disturbed areas with native species will mitigate these concerns.

Heavy equipment used to construct the Project may cause soil compaction along the right-of-way. During construction, soils will be tilled with a chisel plow or other deep-tillage equipment to loosen the soil to the reasonable satisfaction of the landowner. Because the soils of the study

area generally have a high shrink-swell potential, compaction will correct itself over time as the soil goes through wet-dry and freeze-thaw cycles.

B.5 Vegetation and Wildlife

Investigations were conducted on potential impacts to wildlife and plant species resulting from the Project. Information was gathered from a variety of sources to compile the existing conditions of plant, wildlife, and critical habitats within the proposed corridor. Sources included field surveys, literature reviews, and personal communications with agencies. The North Dakota Game and Fish Department ("NDGFD"), the United States Fish and Wildlife Service ("USFWS"), Lostwood Wetland Management District ("LWMD"), the North Dakota Parks and Recreation Department ("NDPRD"), the North Dakota Department of Health ("NDDOH"), and the U.S. Army Corps of Engineers ("USACE") were contacted to assist in identifying species and ecologically significant habitats along the route and within the Project study area. All agencies were provided with an overview map of the proposed route. Possible areas of concern discussed with these agencies included federally-listed endangered, threatened, candidate, sensitive or watch species, state-listed protected species, and critical habitats. All agency notifications and responses are included in Tab 5.

USACE regulatory offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). The USACE requested that applicable permits relating to Nationwide Permit 12, Section 10, or Section 404 be applied for and obtained from the USACE regulatory office for proposed construction if required. No new navigable river crossings are being proposed, nor are any fill materials intended to be placed in jurisdictional waters, for proposed Project construction. A Nationwide Permit 12 will be applied for to cross all other river crossings and wetlands.

The LWMD indicated that the USFWS holds wetland easements that will be crossed by the proposed route. The wetlands need to be avoided by either boring or routing the pipeline around the wetland. GIS shapefiles of the delineated wetlands with proposed bore locations have been provided to the LWMD for review. No further comments have been received to date. The wetland easement locations are included on maps in Tab 4.

The NDDOH responded that the department believes the environmental impacts from the Project will be minor and can be controlled by proper construction methods.

The NDPRD reviewed the proposed Project. They commented that the Project does not affect state park lands that they manage or Land and Water Conservation Fund recreation projects that they coordinate. The North Dakota Natural Heritage database listed species of concern in the state that have been identified within the Project area. The NDPRD recommends that the project be accomplished with minimal impacts and that all efforts be made to ensure that critical habitats not be disturbed in the project area to help secure rare species conservation in North Dakota.

The NDGFD commented that there are various wetlands within the proposed Project area. Steps should be taken to protect any wetlands that cannot be avoided, no alterations should be made to existing drainage patterns, and above-ground appurtenances should not be placed in wetland areas. Unavoidable destruction or degradation of wetland acres should be mitigated in kind. The NDGFD does not believe the Project will have any significant adverse effects on

wildlife or wildlife habitat provided their recommendations are implemented and disturbed areas are reclaimed to pre-project conditions.

No comments have been received from the USFWS to date.

Field surveys were conducted on foot. Field data was collected with Trimble GeoXH 6000 Series Global Positioning System handhelds and photographs were taken along the entire length of the route.

Analysis within the survey area included a complete inspection for species of concern, habitat components required to support species of concern, noxious weeds, and wetlands. Species of concern, noxious weeds, plant species, and wildlife species were identified in the field and mapped. Any unknown species were photographed and later identified using available up-to-date literature. Personal communications and knowledge of species and species habitat were used to make a determination regarding the potential effects of the Project.

B.5 (a) Vegetation

Botany surveys utilizing a 500-foot-wide corridor were performed along the entire Project route in Mountrail County during May, June, and August of 2015. The Project survey area crosses terrain mainly consisting of prairies, pasture land, cropland and wetlands. Common grammanoid species in the Project survey area are: blue grama (*Bouteloua gracilis*), crested wheatgrass (*Agropyron cristatum*), Kentucky bluegrass (*Poa pratensis*), and smooth brome (*Bromus inermis*).

Common herb and forb species within the Project study area include alfalfa (*Medicago sativa*), Canada anemone (*Anemone canadensis*), Canada thistle (*Cirsium arvense)*, cocklebur (*Xanthium strumarium*), common dandelion (*Taraxacum officinale*), common lambsquarters (*Chenopodium album)*, common ragweed (*Ambrosia artemisiifolia*), common yarrow (*Achillea millefolium*), cream milkvetch (*Astragalus racemosus)*, desert biscuitroot (*Lomatium foeniculaceum)*, fringed sagewort (*Artemesia frigid*), purple prairie clover (*Dalea purpurea)*, purple rockcress (*Arabis divaricarpa)*, three-flowered avens (*Geum triflorum)*, wavyleaf thistle (*Cirsium undulatum)*, and yellow sweetclover (*Melilotus indicus*).

Common plant communities established in wetlands include common cattail (*Typha latifolia*), curly dock (*Rumex crispus*), and prairie cordgrass (*Spartina pectinate)*.

No federally threatened or endangered species were identified within the construction ROW or survey corridor. The primary impact will be the removal of vegetation in the ROW during construction activity. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

Noxious and invasive species recorded during the field survey and that are a concern on farm and pasture land are: Canada thistle (*Cirsium arvense*).

In areas that require re-vegetation, Sacagawea will use appropriate seed mixes, application rates, and seeding dates, taking into account the requirements and recommendations of appropriate state and federal agencies as well as preferences of landowners.

B.5 (b) Wildlife

Wildlife surveys utilizing a 1-mile-wide corridor were performed along the entire Project route in Mountrail County during May, June and August of 2015. Keitu environmental field surveyors conducted a thorough inspection of prairies, rangeland, and wetland habitat.

Surveyors paid special attention to trees large enough to support raptor nests. The survey corridor contained shelterbelts, farmyards, and small forested areas that provided potential habitat for raptor species.

Common wildlife identified in the survey area included 13-lined ground squirrel (*Spermophilus tridecemlineatus*), mule deer (*Odocoileus hemionus*), northern leopard frog (*Lithobates pipens*), Richardson's ground squirrel (*Spermophilus richardsonii)*, white-tailed deer (*Odocoileus virginianus*), songbirds, migratory waterfowl, and raptors.

The following state-listed Species of Conservation Priority and Bureau of Land Management ("BLM") Sensitive species were identified during the biological field survey conducted in the Project survey area in May, June, and August of 2015: bobolink (*Dolichonyx oryzivorus)*, northern harrier (*Circus cyaneus),* northern leopard frog (*Lithobates pipens*), northern pintail (*Anas acuta)*, Richardson's ground squirrel (*Spermophilus richardsonii)*, sharp-tailed grouse (*Tympanuchus phasianellus)*, and Wilson's phalarope (*Phalaropus tricolor)*. No state-listed Species of Conservation Priority, USFS Sensitive, and BLM Sensitive species were identified within the Project construction ROW. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

The proposed Project does cross a designated critical habitat area for piping plover. This area will be crossed using HDD/bore methods to avoid disturbance to the habitat. If construction occurs during nesting season (April 15 – September 1), a preconstruction nesting survey will be completed in areas of critical habitat within 0.5 miles of construction activity. If there is a nesting pair found located within 0.5 miles of construction, construction will not occur until September 1 or after the young have fledged.

Construction of the Project will have no significant effects on the State Sensitive Species for North Dakota. Based on the size and location of the Project and mitigation measures to be used during construction, the Project's effect on habitats is not anticipated to alter a species population.

A total of three raptor nests were observed during the field survey. All three of the recorded nests were identified as active. Two nests were occupied with red-tailed hawks (*Buteo jamaicensis)* and one was occupied with great horned owls (*Bubo virgianius)*. Biologists were able to observe from the ground with binoculars the great horned owl nest was occupied with at least two nestlings.

When raptor nests were found during the route planning stage, Sacagawea adjusted the proposed Project route following the USFWS recommended spatial buffers and rerouted the pipeline to avoid impacts to the active nests found during the 2015 field surveys. Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

B.6 Cultural Resource Studies

Beaver Creek Archaeology, Inc. ("Beaver Creek") of Bismarck, North Dakota was engaged to survey for cultural resources within the proposed Project study area. A total of 621 acres was surveyed at Class III standards. Due to reroutes, the final project corridor will consist of 293 acres (300-foot-wide, 8 miles long). Of the proposed 293-acre corridor, 61 acres have been previously inventoried within the past 10 years. An additional 78 acres have been previously inventoried within the past 14 years. Because the inventory for the 78 acre portion is older than 10 years, Beaver Creek resurveyed this portion to comply with North Dakota State Historic Preservation Office ("SHPO") standards.

The file search revealed 36 sites, 19 site leads, and two isolated finds in a one-mile radius of the proposed Project route. On May 25, 26, June 13, July 2, and August 4, 2015, Beaver Creek conducted a Class III cultural resource inventory of the proposed Project area.

During the inventory, Beaver Creek archaeologists identified five previously recorded sites and one newly recorded site. All sites will be avoided by the proposed Project. Four sites are Native American stone feature sites and two sites are Historic/Architectural sites. One of the Native American stone feature sites is located on Enbridge property. The site was excavated in 2013 by Metcalf Archaeological Consultants, Inc. and determined ineligible. As the site is *not eligible* for the National Register of Historic Places ("NRHP"), no avoidance is recommended necessary. Another stone feature site is recommended *unevaluated* for the NRHP and was partially located within the survey area. However, a project reroute was performed which will avoid the site completely. The other two stone feature sites are *unevaluated* and recommended to be avoided by 100 feet.

The Architectural site has been recommended *not eligible* for the NRHP and is not located within the proposed route. As the site is recommended not eligible, no avoidance is required. The Historic/Architectural site newly recorded during the current inventory is recommended *unevaluated* for the NRHP. As the site is *unevaluated*, Beaver Creek recommends that the site be avoided during construction activities. The proposed route will avoid the site by 125 feet and no features associated with this site will be impacted by the proposed Project.

A previously recorded isolated find is located within the survey area. However, when revisiting the isolated find location, the isolated find could not be relocated. Isolated finds are *not eligible* for the NRHP. During the cultural resource inventory, no evidence of site leads were observed within the survey area and no avoidance is recommended necessary.

Provided that the sites listed above are avoided by the aforementioned avoidance recommendations, Beaver Creek recommends that the Project proceed under a *No Historic Properties Affected* as surveyed, mapped, and described herein.

The cultural resource location details are not publicly available per request of the North Dakota State Historic Society, but Beaver Creek has provided a redacted version of the report to be available for this application. The redacted Class III Cultural Resources Inventory report prepared by Beaver Creek is included in this application under Tab 4, Appendix A.

The SHPO has been provided with a complete version of the Class III Cultural Resource Inventory report issued by Beaver Creek. A letter of concurrence with a finding of "No Significant Sites Affected" was received from SHPO dated August 21, 2015.

B.7 Land Use

Specific to the Project area, farming and ranching is the predominant land use. Approximately 73 percent is herbaceous, 18 percent is cultivated crops, 6 percent is wetlands, and 3 percent is hay or pasture.

The primary crops cultivated in the area include wheat, grain, alfalfa, and canola. The Project may result in temporary impacts to agricultural land use. However, landowners will be compensated for crop loss or reduced yields caused by construction of the Project. No permanent crop loss is expected to occur. Deep tillage will be implemented as necessary to mitigate effects of soil compaction.

The pipeline route runs in the vicinity of, and sometimes adjacent to, existing oil well sites. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments will not be precluded by the Project. After installation of the pipeline, disturbed areas will be restored to pre-construction conditions to the extent reasonably practicable, and generally reverted to pre-construction uses. No long-term change in land use is anticipated from the Project.

B.8 Water Resources

B.8 (a) Water Resources-Ground Water

The Project lies in the Missouri River Basin, which is one of the five major hydrologic subdivisions in North Dakota. The Missouri River Basin is the largest in the state and drains approximately 48 percent of the state's total area. With respect to the ground water used in the basin, 69 percent is used for irrigation, 14 percent is used for livestock, 7 percent is used for industrial, 6 percent is used for municipal, 3 percent is used for rural domestic, and 1 percent is used for rural water systems/other.[5]

No sub-surface injection of water is expected for the Project. Any released water will be discharged to surface water, subject to the requirements of the general National Pollutant Discharge and Elimination System ("NPDES") permit issued by the NDDOH.

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

B.8 (b) Surface Waters

Topographic maps and current aerial photos were reviewed to identify streams, rivers, lakes, and wetlands near the Project (see Table 3.B.3). Project construction near surface waters will be conducted in accordance with applicable regulatory requirements. No creek will be permanently drained or filled as part of the construction, and effects on creeks are expected to be short-term and minor. Following construction, Sacagawea will restore the construction ROW as close to pre-existing contours as practicable.

[5] North Dakota State Water Commission, *A Reference Guide to North Dakota Waters* (2014), *available at* http://www.swc.nd.gov/4dlink9/4dcgi/GetSubCategoryPDF/136/WaterRefGuide.pdf.

TABLE 3.B.3 –Wetland and Waterbody Crossings

Legal Description	Coordinates	Description
Mountrail County		
NESW S27 T156N R91W	48°18'13.87"N 102°21'52.10"W	Little Knife River
NWSE S27 T156N R91W	48°18'10.92"N 102°21'32.56"W	Drainage to Little Knife River
SESW S26 T156N R91W	48°17'56.95"N 102°20'38.99"W	Wetland
SWSE S26 T156N R91W	48°17'56.89"N 102°20'21.57"W	Wetland
NENW S36 T156N R91W	48°17'52.98"N 102°19'30.21"W	Wetland
NENW S36 T156N R91W	48°17'52.52"N 102°19'22.38"W	Wetland
NWNE S36 T156N R91W	48°17'50.01"N 102°19'12.15"W	Wetland
NWNE S36 T156N R91W	48°17'48.20"N 102°19'2.75"W	Wetland
NWNE S36 T156N R91W	48°17'51.62"N 102°18'58.62"W	Wetland
NENE S36 T156N R91W	48°17'52.20"N 102°18'40.44"W	Wetland
NWSW S20 T156N R90W	48°19'5.10"N 102°17'14.27"W	Lake
NESW S20 T156N R90W	48°19'8.33"N 102°17'1.58"W	Wetland
SESW S17 T156N R90W	48°19'42.05"N 102°16'51.33"W	Wetland
NENW S20 T156N R90W	48°19'37.82"N 102°16'43.63"W	Wetland
SWSE S17 T156N R90W	48°19'38.72"N 102°16'40.52"W	Wetland
SWSE S17 T156N R90W	48°19'43.30"N 102°16'37.07"W	Wetland
SWSE S16 T156N R90W	48°19'47.39"N 102°15'21.42"W	Wetland
SWSW S15 T156N R90W	48°19'50.15"N 102°14'39.34"W	Stock Pond
NWSW S15 T156N R90W	48°19'58.16"N 102°14'27.48"W	Wetland

B.8 (c) Wetlands

Sacagawea, through its consultants, conducted a desktop survey using aerial photographs and USGS topographic maps identifying USACE waters of concern within North Dakota to identify wetlands along the pipeline route. Wetlands identified near the Project's ROW are listed by legal description in Table 3.B.3.

Construction in wetlands will require authorization by the USACE. Sacagawea will obtain necessary authorization for wetland crossings, with wetland work to be conducted in accordance with applicable permit conditions.

For water and wetland crossings which are not bored, and construction in unsaturated wetlands, topsoil will be segregated from the trench line to preserve natural sources of seed and rootstock. During trenching, water quality of inundated wetlands will be temporarily affected due to the suspension of sediments and organic matter. After the trench is backfilled, the topsoil will be replaced to facilitate the natural re-vegetation process. The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value.

Construction of the Project will not result in the permanent drainage or filling of wetlands. Sacagawea will implement the measures identified in its CMRP to minimize adverse effects on wetlands during construction and will restore wetlands following construction. Effects on wetlands are therefore expected to be short-term and minor.

B.8 (d) Water Use

Following construction of the Project, drains, swales, and flowages will be restored to pre-construction conditions, to the extent practicable, to minimize disruption of water resources. Construction may require temporary appropriations of water 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.

B.8 (e) Water Runoff from Surfaces

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

Sacagawea will obtain authorization under a general permit for Storm Water Discharges Associated with Construction Activity from the NDDOH, which implements a federal program under the Clean Water Act. Sacagawea's CMRP describes best management practices. Sacagawea, its General Contractor, and subcontractors will implement measures to minimize off-site erosion from site storm water runoff. These practices protect surface water and soil resources within the Project ROW.

B.8 (f) Discharges to Surface Waters

During construction, point source wastewater discharge may be generated from hydrostatically testing the new pipeline prior to placing it in service. Discharges may also occur as needed for trench dewatering during construction. The NDDOH has developed a General Permit (Permit No. NDG-070000) which authorizes the discharge of waters related to temporary dewatering and hydrostatic testing. Sacagawea will obtain authorization for construction-related discharges as necessary and will conduct trench dewatering and hydrotest water discharges in a manner consistent with the NPDES General Permit.

Testing and discharge will 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. The NPDES permit specifies that discharge water must be free from process and other wastewater discharge.

B.8 (g) Protection from Fuel Spills

Motorized construction equipment utilized for construction will be powered by gasoline- or diesel- fueled engines. Fuel for construction vehicles will be used and stored consistent with regulations of the U.S. Environmental Protection Agency set forth in 49 C.F.R. § 195.112 for areas with at least 1,320 gallons of aggregate storage capacity and/or consistent with the National Fire Protection Association Code 395 for storage and handling of petroleum-based fuels in isolated and/or remote areas.

If more than 1,320 gallons of oil storage occurs at one area, the contractor is required to prepare and implement an oil spill prevention, control, and countermeasure (“SPCC”) plan in accordance with 49 C.F.R. Section 195.112, including having the plan reviewed and certified as adequate by a registered professional engineer. The SPCC Plan outlines required secondary containment measures to be installed around bulk storage containers (i.e., tanks and drums) as well as other oil-handling areas such as unloading and dispensing areas. The SPCC plan also describes response, containment, and cleanup measures. Training requirements of impacted employees are also outlined. Sacagawea will utilize an SPCC plan when necessary.

Storage of bulk fuels will be prohibited within 100 feet of an open waterway or surface water during construction.

Contractors are 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 when working in or near wetlands or surface water bodies.

SECTION C SITING CRITERIA

C.1 Relative Value and Effects upon Each Criterion Including Location, Construction, and Operation of the Facility (N.D.A.C. § 69-06-05-01(2)(k))

In accordance with Section 49-22-09 of the North Dakota Century Code and Section 69-06-08-02 of the North Dakota Administrative Code, the Project route was developed after consideration of its impact on humans and the environment. Alternative routes or options, which are discussed in Section C.2 of the Application for Certificate of Corridor Compatibility, would not be optimum and could result in more significant impacts.

Underground pipeline installation minimizes potential impacts on human and animal welfare and aesthetics. Construction may result in temporary disruption to the environment, but is not anticipated to result in long-term negative impacts to the environment.

A general analysis of the existing human and natural environment along the Project route and potential impacts of ROW preparation, construction practices, and operation and maintenance procedures for the Project are included in Section B. The additional factors and criteria to be considered are discussed below.

C.2 Factors to be Considered in Evaluating Applications and Designation of Sites, Corridors, and Routes (N.D.C.C. § 49-22-09)

C.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

Record and database research relating to the effects of the location, construction, and operation of the Project included (1) conducting a Class I Cultural Resource Inventory, (2) reviewing the Water Well Inventory maintained by the North Dakota State Water Commission, (3) utilizing the USFWS Wetlands Mapper, and (4) utilizing the NDGFD Wildlife Action Plan. In addition, site-specific information, such as the presence of occupied buildings, protected species and/or environmentally sensitive areas, was obtained during field studies conducted in May of 2015. A Class III Cultural Resource Inventory was conducted in May of 2015.

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

The Project does not include new energy conversion or transmission technologies. The Project design is consistent with existing pipeline technologies.

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

The Project does not involve construction of an energy conversion facility.

C.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 for construction of the Project include temporary construction-related effects on vegetation, wildlife, agricultural operations, transportation, and noise levels as described throughout the Route Application. Impacts to agricultural operations are anticipated to be minimal and impacts to transportation are anticipated to be short-term. Impacts on vegetation and wildlife will also be minimal. Vegetation will be removed from the ROW prior to construction, and the area will be restored and re-seeded following construction. Wildlife may temporarily avoid the ROW during construction, but no long-term impacts are anticipated. Noise level increases are associated only with construction. In addition, Sacagawea implements thorough mitigation measures to minimize construction-related impacts as described in its CMRP presented as Tab 6 in this consolidated application.

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

Desktop studies for portions of the study area and route, including a Class I archeology study and environmental database retrieval, were conducted by a North Dakota-based environmental consulting firm. The route was modified to avoid or minimize environmental, cultural resource, and socioeconomic impacts.

In addition, the route was selected based on voluntary landowner participation and landowner input regarding the specific location of the Project. The route is described in Section A and depicted in diagrams presented in Tab 4.

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

Sacagawea is not aware of any irreversible or irretrievable commitments of natural resources that would result from the requested approvals.

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

Upon construction, the Project will present an optimization of new and existing pipeline capacity to meet the need for additional liquid petroleum transportation to this region. The Project will provide connections to both pipeline and rail facilities for bulk crude oil transportation options. Sacagawea's shippers support the Project as an economical response to the need for additional mid-stream pipeline transport capacity.

Crude oil produced in North Dakota is generally shipped by pipeline to one of three market hubs: (1) Tesoro's Mandan, North Dakota refinery; (2) the Guernsey, Wyoming interconnection hub; and/or (3) the Clearbrook, Minnesota interconnection hub. Crude oil can also be transported by truck to Canada, and by rail directly to refineries or to East, West, and Gulf Coast markets.

The "geographical market risk" of limited transportation options suffered by oil producers in the rapidly expanding crude oil production market in northwestern North Dakota has caused millions

of dollars per year in lost revenue. With constrained export capacity, local production lacks access to alternative markets, making it vulnerable to regional price swings.

Over the past several years, the North Dakota Pipeline Authority has been working with producers and regional pipeline companies to address the issues surrounding the safe transportation of the surge in crude oil volume.

The purpose of the Project is to provide "midstream" transportation alternatives for the expanding volumes of crude oil being produced in North Dakota and to facilitate efficient access to downstream takeaway markets. The pipeline system will be constructed to allow crude to flow in either direction. This feature allows for greater flexibility and access to more sales points depending on market conditions, and acts as a balancing point allowing the best price for North Dakota crude producers. The Project will also serve to displace trucking operations that seek to move barrels of crude oil. The Project will ultimately help bring North Dakota sweet crude to more markets in the United States, therefore allowing for a more competitive price.

In addition to increasing the crude oil transmission capacity within North Dakota, the Project will provide other benefits. For example, operation of the Project has the potential to increase the tax base of Mountrail County. Construction of the Project will offer job opportunities during construction, which will be partially filled with local contractors and/or personnel. Pipeline construction workers are hired from pipeline contractors, equipment contractors, suppliers, and regional testing firms.

In addition, environmental consultants and construction inspectors will be employed during construction and restoration. North Dakota-based consulting firms were selected to assist with the site selection and permitting process. Wages paid to non-local contractors and/or personnel benefit the regional economy through expenditures for supplies, lodging, fuel, and other services.

C.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

A letter was sent to the Mountrail County Planning and Zoning Department to gain information on planned developments within the vicinity of the Project. To date, no comments have been received. No developments conflicting with the Project have been discovered as of the date of this application.

Due to recent and continued crude oil volume expansion in the state, the Project can be supported under current and foreseen economic conditions.

Sacagawea is not aware of any other existing plans by state, local government, or private entities with respect to any other planned development in the vicinity of the Project's study area based on a review of publicly available documents. However, based on recent history, it is likely that expansion of crude oil and natural gas pipeline systems will continue to occur. No potential conflicts with any developments have been identified at this time.

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

Provided that the sites listed in the Class III Cultural Resources Inventory Report are avoided by the aforementioned avoidance recommendations, Beaver Creek recommends that the Project proceed under a finding of *No Historic Properties Affected* as surveyed, mapped, and described herein.

The cultural resource location details are not publicly available per request of the North Dakota State Historic Society, but Beaver Creek has provided a redacted version of the report to be available for this application. The Class III Cultural Resources Inventory report prepared by Beaver Creek is included in this application under Tab 4, Appendix A. See Section B.6 of this application for further discussion on the findings of this survey.

The SHPO has been provided with a complete version of the Class III Cultural Resource Inventory report issued by Beaver Creek. A letter of concurrence with a finding of "No Significant Sites Affected" was received from SHPO dated August 21, 2015. A copy of the letter of concurrence received from SHPO is contained in Tab 5, Appendix. 5.C.

C.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

No state-listed species of concern was identified during the biological field survey conducted in the Project survey area in May, June, and August of 2015. No federally threatened or endangered species were identified within the construction ROW. The primary impact will be the removal of vegetation in the ROW during construction activity.

The following state-listed Species of Conservation Priority and BLM Sensitive species were identified during the biological field survey conducted in the Project survey area in May, June, and August of 2015: bobolink (*Dolichonyx oryzivorus)*, Northern harrier (*Circus cyaneus),* Northern leopard frog (*Lithobates pipiens*), Northern pintail (*Anas acuta)*, Richardson's ground squirrel (*Spermophilus richardsonii)*, sharp-tailed grouse (*Tympanuchus phasianellus)*, and Wilson's phalarope (*Phalaropus tricolor)*.

The proposed Project does cross a designated critical habitat area for piping plover. This area will be crossed using HDD/bore methods to avoid disturbance to the habitat. If construction occurs during nesting season (April 15 – September 1), a preconstruction nesting survey will be completed in areas of critical habitat within 0.5 miles of construction activity. If there is a nesting pair found located within 0.5 miles of construction, construction will not occur until September 1, or until the young have fledged.

Construction of the Project will have no significant effects on the State Sensitive Species for North Dakota. Based on the size and location of the Project, the Project's effect on habitats is not anticipated to alter a species population. The primary impact on vegetation will be clearing the ROW during construction activity. This impact is expected to be minor and temporary.

Findings are reported on the appropriate plate in Appendix 4.B in Tab 4, as well as electronically presented as ESRI ArcGIS software compatible data files in Tab 7.

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

No problems or concerns have been raised by federal agencies, state agencies, or local entities.

C.3 Exclusion Areas (N.D.A.C. § 69-06-08-02(1))

The Commission has identified certain sensitive or otherwise important environmental features that must be considered during the selection of a corridor and a route for transmission facilities. These features have been classified as either “Exclusion Areas” or “Avoidance Areas.” As set forth in Section 69-06-08-02(1) of the North Dakota Administrative Code, Exclusion Areas are areas that are to be excluded from consideration for transmission facility routes, and may encompass only up to fifty percent of the width of a transmission facility corridor unless there is no reasonable alternative.

One type of Exclusion Area is located within the study corridor (see Table 3.C.1 below); however, no Exclusion Areas are crossed by the route, nor do any Exclusion Areas constitute more than 50% of the one-mile environmental study corridor width.

The Minot Air Force Base was contacted to verify there was no interference with intercontinental ballistic missile (“ICBM”) launch or launch control facilities. The pipeline was routed to avoid any potential conflicts with USAF cable in the area of the project. The pipeline does cross USAF cable, but the crossing has been approved by the USAF Cable Affairs. The correspondence with the USAF is included in Tab 5.

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

TABLE 3.C.1 – Exclusion Areas

Exclusion Area	Within Study Area	Within Survey Area	50% of Survey Area	Crossed By Route	Description of Exclusion Area and Proposed Buffer
Designated or registered national: parks; memorial parks; historic sites and landmarks; natural landmarks; monuments; and wilderness areas	None	None	N/A	None	
Designated or registered state: parks; historic sites; monuments; historical markers; archeological sites; nature preserves	None	None	N/A	None	
County parks and recreational areas; municipal parks; and parks owned or administered by other governmental subdivisions	None	None	N/A	None	
Areas critical to the life stages of threatened or endangered animal or plant species	Yes	Yes	No	Yes	As noted in Section B.5 (b) on page 14, three raptor nests were identified within the study area. However, construction will only occur outside of the species specific buffer suggested by USFWS when nests are occupied. The proposed Project does cross a designated critical habitat area for piping plover. This area will be crossed using HDD/bore methods to avoid disturbance to the habitat.
Areas where animal or plant species that are unique or rare to this state would be irreversibly damaged	None	None	N/A	None	

Exclusion Area	Within Study Area	Within Survey Area	50% of Survey Area	Crossed By Route	Description of Exclusion Area and Proposed Buffer
Areas within one thousand two hundred feet of the geographic center of an intercontinental ballistic missile (ICBM) launch or launch control facility	None	None	N/A	None	
Areas within thirty feet on either side of a direct line between intercontinental ballistic missile (ICBM) launch or launch control facilities to avoid microwave interference	None	None	N/A	None	As noted in Section C.3 on page 24, the pipeline was routed to avoid any potential conflicts with USAF cable in the area of the project. The pipeline does cross USAF cable, but the crossing has been approved by the USAF Cable Affairs.

C.4 Avoidance Areas (N.D.A.C. § 69-06-08-02(2))

As set forth in Section 69-06-08-02(2) of the North Dakota Administrative Code, Avoidance Areas are areas that are not to be considered in the routing of a transmission facility unless it is shown that, under the circumstances, there is no reasonable alternative. Avoidance Areas may encompass only up to fifty percent of the width of a transmission facility corridor unless there is no reasonable alternative.

One type of Avoidance Area was identified within the study corridor (see Table 3.C.2 below). No Avoidance Areas will be crossed by the Project route. Measures that will be taken to minimize impacts are described further below.

Archeological sites within the survey area are summarized in Section B.6 and discussed in detail in the report in Tab 4 Appendix 4.A.

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

TABLE 3.C.2 – Avoidance Areas

Avoidance Area	Within Study Area	Within Survey Area	Crossed By Route	Description of Avoidance Area and Proposed Buffer
Designated or registered national: historic districts; wildlife areas; wild, scenic, or recreational rivers; wildlife refuges; and grasslands	None	None	None	
Designated or registered state: wild, scenic, or recreational rivers; game refuges; game management areas; management areas; forests; forest management lands; and grasslands	Yes	None	None	The Palermo State Game Management Area is located approximately 350 feet to the south of the pipeline, across US Highway 2.
Historical resources which are not specifically designated as exclusion or avoidance areas	Yes	Yes	None	Archeological sites within the study area are summarized in Section B.6 on page 15 and discussed in detail in the report in Tab 4 Appendix 4.A.
Areas that are geologically unstable	None	None	None	
Within five hundred feet [152.4 meters] of a residence, school, or place of business	None	None	None	
Reservoirs and municipal water supplies	None	None	None	
Water sources for organized rural water districts	None	None	None	
Irrigated land	N/A	N/A	N/A	Not applicable for underground transmission facilities.
Areas of recreational significance which are not designated as exclusion areas	None	None	None	

C.5 Selection Criteria (N.D.A.C. § 69-06-08-02(3))

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

TABLE 3.C.3 – Selection Criteria

Selection Criteria	Impact Summary	Further Discussion
Agricultural production	Pipeline construction may result in temporary effects on agricultural land use.	Section C.5 (a) on page 29
Family farms and ranches	Possible impacts include removal or damage of fences, gates, and private roads.	Section C.5 (b) on page 31
Land suitable for irrigation	N/A	Section C.5 (c) on page 31
Surface drainage patterns and ground water flow patterns	Construction of the Project will not alter surface drainage patterns. Trenching may temporarily disturb the level of groundwater and increase the sediment in the groundwater. The pipeline is not anticipated to have a significant effect on regional groundwater flow patterns.	Section C.5 (d) and C.5 (e) on page 31
Sound-sensitive land uses	During construction, residences in close proximity to the construction may experience short-term increases in construction-related noise.	Section C.5 (f) on page 32
The visual effect on the adjacent area	The addition of the equipment for the Project will result in minimal additional visual impact. Other impacts to visual effects will be limited to periods of construction activities.	Section C.5 (g) on page 32
Extractive and storage resources	No extractive or storage resources were identified that would be affected by the Project.	Section C.5 (h) on page 32

Selection Criteria	Impact Summary	Further Discussion
Wetlands, woodlands, and wooded areas	Effects on water bodies are anticipated to be short-term and minor. The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value. The proposed route for the Project does not cross through tree rows or woody areas.	Section C.5 (i) and C.5 (j) on pages 32 and 33
Radio and television reception, and other communication or electronic control facilities	No impacts on television or radio reception, or communication or electronic control facilities, are anticipated to occur as a result of the Project.	Section C.5 (k) on page 33
Human health and safety	During construction, residences and businesses in close proximity to construction activities may be exposed to short-term increases in construction-related noise and dust. 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 forces).	Section C.5 (l) on page 33
Animal health and safety	Construction activity within the Project ROW will have temporary impacts on domestic animals and wildlife. The clearing of vegetation will temporarily reduce cover, nesting, and foraging habitat for some species.	Section C.5 (m) on page 34
Plant life	No permanent impacts to vegetation as a result of pipeline construction are anticipated.	Section C.5 (n) on page 35

C.5 (a) Agricultural Production

The Project will be installed within a new ROW in Mountrail County in northwestern North Dakota. The pipeline will cross agricultural and pasture lands where crop and livestock production are the primary economic activity. The primary crops cultivated in the area include wheat, grain, alfalfa, and canola.

Pipeline construction may result in temporary effects on agricultural land use. However, Sacagawea will institute appropriate management practices to restore all areas to pre-construction conditions, to the extent reasonably practicable.

Sacagawea requires that construction equipment be cleaned before arriving on site to prevent the introduction of undesirable species to the surrounding ROW. Sacagawea will implement the following mitigation measures when undesirable species are found within the construction ROW:

- Sacagawea will make an effort to prevent the spread of noxious weed seeds during clearing and grading activities, and will use straw mulch and seed mix that are free of noxious weed seed to re-vegetate the ROW. Contractors and construction inspectors will receive information to help them identify noxious weeds. Sacagawea will also utilize environmental inspectors to help identify and prevent the spread of undesirable species.

- During pre-construction walkovers, Sacagawea's environmentally trained inspectors may flag and document areas containing noxious weeds. The construction crews are informed of these areas. Sacagawea instructs the contractors to minimize the amount of construction equipment and limit the number of passes by this equipment through infested areas. Construction mats are used to minimize the transport of weed seed or plant material via construction equipment.

- Equipment and construction mats are cleaned immediately after passing through infested areas. Cleaning consists of removing large soil clods and/or plant parts from the equipment and construction mats using shovels and brooms and, when necessary, washing the equipment with water or cleaning using compressed air. Soil and water from cleaning activities are not allowed to flow to non-infested areas.

The pipeline will be installed at a depth that exceeds the typical tillage depth. Following construction, agricultural lands will be returned to pre-construction conditions to the extent reasonably practicable. Therefore, the Project is not anticipated to interfere with normal agricultural operations on cropland after construction. Construction operations are expected to be conducted after the harvest season and prior to the growing season when feasible. Therefore, minimal disruption to agricultural production is anticipated.

Above-ground facilities on cropland are limited to line markers and cathodic protection rectifiers. Therefore, the Project will result in minimal long-term loss of farmland use. Sacagawea will consult with landowners to place above-ground appurtenances in areas that cause the least amount of disturbance to landowner operations. Landowners will be compensated by either long-term lease agreements or by the purchase of the land for these sites.

Prime farmland is defined as land with the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Construction activities will not significantly affect the factors, such as soil quality, growing season, or moisture supply, that are considered in determining whether land is prime farmland.

C.5 (b) Family Farms and Ranches

The Project will not alter the pattern of land ownership or create long-term disruptions to family farming operations. Easement payments are beneficial to landowners within the ROW and no significant interference with farming operations is expected to occur. Equipment will traverse only landowner-approved access routes to minimize disruption to soil, drainage, and crops. Sacagawea's crop loss compensation program compensates landowners for any crop damage caused by construction.

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

C.5 (c) Lands Suitable for Irrigation

Pursuant to Section 69-06-08-02(2)(h) of the North Dakota Administrative Code, this criterion does not apply to underground transmission facilities such as the Project. No above-ground facilities will be constructed on irrigated land.

C.5 (d) Surface Drainage Patterns

Construction of the Project will not alter surface drainage patterns. Streams, swales, ditches, and other natural drains will be restored to pre-construction contours after construction is complete. The pipeline will be installed beneath drainage ditches in a manner that will not interfere with flow or future maintenance efforts by landowners or the drainage authority. Mitigation measures include the installation of the pipe at a sufficient depth to avoid being encountered by drain cleaning equipment. Above-ground facilities will be constructed in a manner that prevents alteration of surface drainage patterns.

C.5 (e) Groundwater Flow Patterns

Groundwater flow can potentially be altered by pipeline construction through blasting and trenching activities. However, no exposed bedrock or areas of shallow bedrock are expected to be encountered, therefore blasting during Project construction is not anticipated. Trenching may temporarily disturb the level of groundwater and increase the sediment in the groundwater. However, given the shallow depth of construction activities for the pipeline, and the relatively deep location of the area's aquifers, installation of the pipeline is not anticipated to have a significant effect on regional groundwater flow patterns.

Groundwater could be affected by accidental discharges of regulated materials, such as fuel, lubricants, and coolants used during construction. Sacagawea Pipeline Company's CMRP located in Tab 6 outlines precautions that the company takes to prevent sedimentation or other materials from entering the water supplies in the area. Sacagawea Pipeline construction contractors will be required to have a current SPCC plan, which requires implementation if the facility contains an aggregate oil storage capacity above 1,320 gallons, consistent with U.S.

Environmental Protection Agency requirements outlined in 40 C.F.R. § 112. Regardless of the total storage capacity, no bulk oil storage facilities will be sited within 100 feet of surface water in connection with the Project.

C.5 (f) Impact on Noise Sensitive Land Uses

No occupied residences are located within 500 feet of the Project. No other sensitive noise receptors, such as schools or hospitals, are located in the vicinity of the Project. During construction, residences in close proximity to the construction may experience short-term increases in construction-related noise. The heavy construction equipment needed to construct the Project may generate short-term increases in ambient noise levels. Increases in ambient noise levels due to heavy equipment operation will be limited to the period of construction, typically during daylight hours. No significant noise is expected to be generated by the Project during normal operations.

C.5 (g) Impact on Visual Effect on the Adjacent Area

Surface facilities to be installed along the route will be limited to one block valve, check valves, pig launchers and receivers, pipeline markers, and rectifiers. The above ground block valve will be installed at the midpoint of the Project within the ROW. This block valve will have the capability of being operated remotely.

The Palermo Rail Facility and the Enbridge Crude Oil Terminal are existing above-ground sites and the addition of the equipment for the Project will result in minimal additional visual impact.

Other than these permanent above-ground facilities, impacts of the Project on visual effects will be limited to periods of construction activities.

C.5 (h) Impact on Extractive and Storage Resources

No extractive or storage resources were identified that would be affected by the Project.

C.5 (i) Impact on Wetlands and Water Bodies

Impacts to water bodies for construction will be avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. Efforts will be made to restore all areas of disturbed wetland vegetation.

Waterbody crossings are described in Section B.8.

Construction near water bodies will be conducted in accordance with applicable regulatory requirements. No waterbody will be permanently drained or filled as part of Project construction, and effects on water bodies are anticipated to be short-term and minor. Sacagawea will restore the areas as close to the previous state and naturally functioning condition as possible.

In unsaturated wetlands, topsoil will be segregated from the trench line during construction of the pipeline to preserve natural sources of seed and rootstock. During trenching, water quality of inundated wetlands adjacent to the construction area may be temporarily affected due to the suspension of sediments and organic matter. Silt fence or straw bales will be installed as

needed to minimize this effect. After the trench is backfilled, the topsoil is replaced to facilitate the natural re-vegetation process in unsaturated wetlands.

No fertilizer or soil amendments will be applied in wetlands. The long-term operation and maintenance of the pipeline will not have adverse effects on wetland function or value.

C.5 (j) Impact on Woodlands and Wooded Areas

The proposed route for the Project does not cross through tree rows or woody areas. Impacts to trees will be avoided to the extent practicable in a manner compatible with safe operation, maintenance, and inspection of the pipeline. It may become necessary to clear some mature trees during construction; however, Sacagawea will work with the appropriate state agencies and private landowners to determine appropriate replacement measures following construction.

Sacagawea will satisfy the requirements of the Commission's tree and shrub mitigation specifications regarding replacement of trees and shrubs impacted by the Project.

C.5 (k) Impact on Radio and Television Reception, and Other Communication of Electronic Control Facilities

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

C.5 (l) Impact on Human Health and Human Safety

During construction, residences and businesses in close proximity to construction activities may be exposed to short-term increases in construction-related noise and dust. The construction ROW and access roads near residential areas may be watered down to control dust during construction in instances of excessive dust. After construction is completed, measures to stabilize and re-vegetate the ROW will be promptly taken to prevent further dust emissions.

The heavy construction equipment needed to install the Project may generate unavoidable short-term increases in ambient noise levels. Increases in ambient noise levels due to equipment operation are limited to the period of construction and are generally limited to daylight hours. Following installation, no additional significant noise is expected to be generated by the Project during normal operation.

No residences or other occupied structures are anticipated to be razed due to construction. Construction of the pipeline may temporarily restrict access to residences along the pipeline route. When this is the case, Sacagawea will either limit the time such restrictions are in place or make arrangements to accommodate the landowner's access needs. Although developers will have to abide by state and/or local ordinances and easement restrictions, future residential developments are not precluded by the Project.

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 forces). To prevent these categories of failures, Sacagawea will construct and maintain the pipeline to meet or exceed industry and governmental requirements and standards.

Specifically, the steel pipe utilized will meet US DOT Pipeline and Hazardous Material Safety Administration ("PHMSA") federal codes under 49 C.F.R. Part 195 (referred to hereafter as PHMSA regulations). Construction methods will follow standards issued by the American Society of Mechanical Engineers, National Association for Corrosion Engineers, and API. As a safety measure, the pipeline is designed to withstand pressures over and above its normal operating pressures and will operate according to all applicable laws, rules, and regulations. All pipe will be inspected and integrity-tested at the factory and transported per the highest technical standards. All 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 are subject to inspection.

The Project will be subjected to careful testing to verify integrity and compliance with specifications. PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing such as checking coating integrity.

The Project will be maintained and inspected according to PHMSA regulations, industry codes, and prudent pipeline operating techniques. The pipeline will be 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.

Sacagawea will perform aerial patrols on the pipeline. Block valves will be inspected. Road crossings will be inspected via foot/vehicle patrol. Rectifier readings for the cathodic protection system will be taken and a periodic pipe to soil survey will be conducted. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the routes of the lines. The pipeline will be in full US DOT compliance. All inspections will be conducted on a timeline consistent with federal guidelines.

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

Pipeline workers and contractors performing critical tasks are qualified under Occupational Safety and Health Administration safety standards and PHMSA "operator qualification" rules and are subjected to federal drug and alcohol testing requirements. Sacagawea and Phillips 66 meet, and often exceed, these requirements so that human error in construction and operation is avoided.

Sacagawea's Ten-Year Pipeline Accident Record

Sacagawea has had no reportable incidents on its pipeline systems in North Dakota.

C.5 (m) Impact on Animal Health and Safety

Construction activity within the Project ROW will have temporary impacts on domestic animals and wildlife. The clearing of vegetation will temporarily reduce cover, nesting, and foraging habitat for some species. However, species will generally move into adjacent habitats, away

from the disturbance area. Once habitat alterations are reclaimed, wildlife is anticipated to reestablish within the area.

Project trenching activities and associated spoil piles may result in a short-term barrier restricting the movement of some wildlife species (typically two to four weeks at any one area). Except for short-term interruptions during construction, existing public roads, farm lanes, and livestock crossings will be kept open, providing crossing access for wildlife. During construction, Sacagawea may erect temporary fencing, as necessary, to keep livestock and wildlife away from the pipeline trench, and will minimize the length of time the trench is left open.

C.5 (n) Impact on Plant Life

Areas requiring removal of vegetation for construction will be re-vegetated in accordance with applicable county agency standards and landowner requests. No permanent impacts to vegetation as a result of pipeline construction are anticipated. Special consideration will be taken for known occurrences of sensitive populations and habitat which could potentially establish new sensitive populations within the Project area.

C.6 Policy Criteria (N.D.A.C. § 69-06-08-02(4))

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

C.6 (a) Location and Design

Sacagawea believes that the Project utilizes an optimal alignment. No designated Exclusion or Avoidance Areas are crossed by the Project route.

Sacagawea engaged consultants to conduct environmental desktop studies, field studies and a Class I and III archeological study. The purpose of these studies is to avoid known plants, wildlife habitats, or cultural resources to avoid damage to these areas.

Construction of the Project will involve the installation of 12-inch nominal diameter, steel, X-52 pipe with a nominal wall thickness of 0.312 inches. The MOP of the pipeline will be 1,440 psig. Valves will be 12-inch ANSI 600 manufactured in accordance with API Standard 6D. Valves will be installed to US DOT regulations. The MOP of the valves is 1,440 psig.

The steel pipe utilized for construction of the Project will meet US DOT criteria outlined in 49 C.F.R. § 195.100. The Project will be constructed per 49 C.F.R. § 195.200 and will be operated and maintained per 49 C.F.R. § 195.400.

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

C.6 (b) Training and Utilization of Available Labor in this State for the General and Specialized Skills Required

During construction, skilled and unskilled labor, both local and non-local, will be employed to construct the pipeline. Phillips 66 has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by PHMSA under 49 C.F.R. 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 reviews of job performance, periodic pipeline control system simulations, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

C.6 (c) Economies of Construction and Operation

Utilization of the Project is believed to be the most cost-effective and operationally sound means of meeting Sacagawea's delivery obligations. Please also refer to Section C.2 (g) of this Application and Section C of the Application for a Certificate of Corridor Compatibility (Tab 1) for further discussion of economic impacts and alternatives.

C.6 (d) Use of Citizen Coordinating Committees

No Citizen Coordinating Committee is anticipated as a result of the Project. Sacagawea does not believe that a Citizen Coordinating Committee is necessary given the Project is located in an area of the state where crude gathering and transmission pipelines already exist. As such, the public is familiar with the permitting, construction, and operation of pipeline facilities.

C.6 (e) Commitment of a Portion of the Transmitted Product for Use in this State

The Project will receive deliveries of crude oil produced in northwestern North Dakota. Market flexibility is critical to assure the best overall value is obtained for North Dakota's crude oil production. The Project will provide needed capacity to transport increased production of crude oil from the Bakken and Three Forks formations.

C.6 (f) Labor Relations

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

C.6 (g) Coordination of Facilities

Existing and planned Sacagawea crude pipelines, and the Palermo to Enbridge Crude Oil Pipeline, will be used in conjunction with each other to optimize system capacity.

Sacagawea is a joint venture between Paradigm Energy Partners, LLC, Phillips 66 Partners, LP, and Grey Wolf Midstream, LLC. The proposed pipeline would originate at the Palermo Rail Facility owned by Phillips 66 Partners Terminal, LLC and terminate at the Enbridge Crude Oil Terminal located in Stanley, North Dakota.

C.6 (h) Monitoring of Impacts

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

C.6 (i) Utilization of Existing and Proposed Rights-of-way and Corridors

The Project will be constructed in a new 100-foot wide temporary construction ROW. Sacagawea is acquiring 50-foot wide permanent easements for the Project. Typical ROW configuration is shown in Figure 3.C.1.

Sacagawea is acquiring the right to utilize additional temporary workspace from the landowners, where necessary. The use of unauthorized workspace will be prohibited without the landowner's approval. In all cases, the amount of additional temporary workspace utilized will be kept to the minimum necessary to safely conduct work.

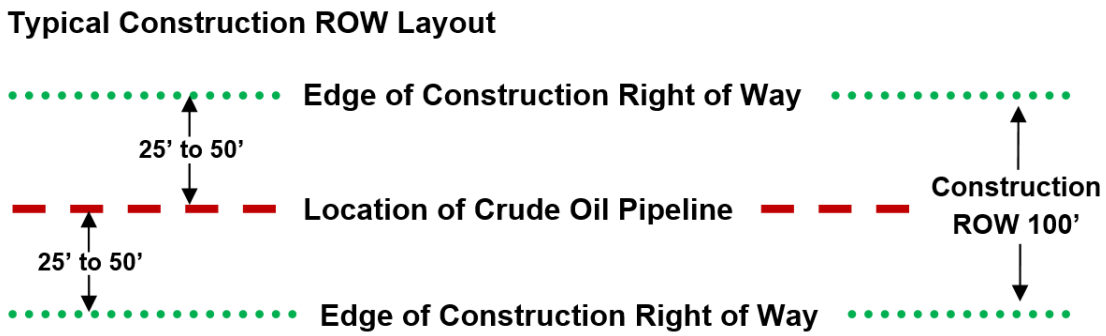

FIGURE 3.C.1 – Typical Right-of-Way Configuration

C.6 (j) Other Existing and Proposed Transmission Facilities

Sacagawea has submitted a Certificate of Corridor Compatibility Application and Route Permit Application requesting permission from the Commission to construct an approximately 70 mile long crude oil pipeline originating at Paradigm Midstream Services' Keene Crude Oil Terminal located approximately 2.8 miles south of Keene, North Dakota in McKenzie County and terminating at the Palermo Rail Facility owned by Phillips 66 Partners Terminal, LLC in Mountrail Country.

Sacagawea plans to submit a Certificate of Corridor Compatibility Application and Route Permit Application requesting permission from the Commission to construct an approximately 12 mile long crude oil pipeline originating from a location 3 miles east of Johnson's Corner, North Dakota in McKenzie County and terminating at Paradigm Midstream Services' Keene Crude Oil Terminal located approximately 2.8 miles south of Keene, North Dakota in McKenzie County.

Sacagawea may construct other pipeline transmission facilities in McKenzie County to transport crude oil to the Keene Terminal for transport on the Sacagawea Pipeline and other transmission

facilities in Mountrail County to deliver crude oil to points other than the Palermo Rail Facility. The need for and timing of other transmission pipeline facilities are subject to further commercial discussions and an expanded open season for Sacagawea.

Enbridge Pipelines' Sandpiper Pipeline crude oil project would carry Bakken crude oil from Beaver Lodge, North Dakota to an existing terminal in Superior, Wisconsin, with a mid-route connection to the Clearbrook, Minnesota crude hub. This pipeline is expected to be in-service in 2017. Current projections expect a 225,000 to 375,000 bbls/day capacity depending on shipper commitments. This project will provide capacity for intrastate transports from Beaver Lodge south of Tioga to the eastern edge of North Dakota, and ultimately export capacity to the Great Lakes region refiners.

Dakota Access Pipeline, a joint venture between Energy Transfer Partners and Phillips 66 Company, is expecting to build the 1,100 mile long pipeline to move crude oil from North Dakota to Patoka, Illinois. The pipeline, with an initial capacity of 450,000 barrels per day and expandable to 575,000 barrels per day, will allow shippers to access markets in the Midwest, East Coast or Gulf Coast in addition to a new rail terminal planned in Illinois. The 16-inch to 30-inch diameter pipeline is expected to begin operation in late 2016.

C.7 Design and Construction Limitations

See Section A of the Certificate of Corridor Compatibility Application (Tab 1).

C.8 Economic Considerations

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

SECTION D MITIGATION MEASURES

D.1 Measures to Preserve the Human Environment

Sacagawea requires its construction contractors to clean up personal litter, bottles, and paper deposited by ROW preparation and construction crews on a daily basis. Waste and scrap produced during construction is always removed and properly disposed of in accordance with applicable regulations prior to the completion of construction.

Sacagawea minimizes noise and dust resulting from construction near residences to the maximum extent practicable.

Prior to construction, Sacagawea will obtain applicable permits for road crossings from Idaho and Palermo Townships in Mountrail County. Sacagawea will also obtain permission from all owners of private roads, including oil lease roads, to cross said roads. Temporary signs will be posted at each crossing as appropriate to alert motorists of construction activity. Improved roads will be bored, minimizing interference with traffic flow caused by construction activities.

D.2 Measures to Protect Terrain and Geological Resources

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

Restoration following construction will be compatible with the safe operation, maintenance, and inspection of the Project.

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

D.3 Measures to Protect Soils

For construction, temporary and permanent erosion control measures will be implemented as specified in the CMRP (Tab 6).

Temporary erosion and sedimentation control measures for Project construction may include the installation of silt fences, straw bales, slope breakers, trench breakers, erosion control fabric, and mulch.

To minimize potential impacts on soil productivity following construction, topsoil will be segregated during trench excavation in agricultural land, unsaturated wetlands, and other areas where soil productivity is an important consideration. Topsoil in cropland will be removed to the depth of cultivation or a maximum depth of 12 inches from the trench and spoil storage area and stored separately from the trench spoil. After the trench is backfilled, topsoil will be returned to its approximate original location. Compaction of agricultural soils will be minimized by restricting construction activities during periods of prolonged rainfall. Where unacceptable levels of

compaction may have occurred in agricultural lands, deep tillage equipment will be utilized to loosen the soil to the extent reasonably practicable.

Sacagawea will retain environmental experts who will train construction inspectors to monitor contractor compliance with applicable requirements in order to protect soil resources during construction.

D.4 Measures to Protect Vegetation and Wildlife

Prior to construction, Sacagawea will clear the ROW to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline.

Utilizing the measures discussed in Section C.5 (a) above for pipeline construction, Sacagawea and its contractors will effectively control or limit the spread of invasive plant species through control treatments and avoidance of existing populations where possible. Treatments will be initiated prior to pipeline construction to lessen the potential for this activity to disperse propagules along the freshly disturbed route. Monitoring and treatment will be conducted on an annual basis to ensure a high degree of control and maximize treatment effectiveness.

In areas that require permanent re-vegetation following construction, Sacagawea 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.

Sacagawea will take appropriate precautions to protect livestock and crops during construction. Operation of the Project, including the pipeline and associated facilities, is not anticipated to significantly affect terrestrial wildlife, fisheries resources, or other aquatic species. Shelter belts and trees will be protected and restored to the extent practicable in a manner compatible with the safe operation, maintenance, and inspection of the Project.

D.5 Measures to Protect Land Use

In connection with construction of the Project, Sacagawea will obtain and comply with applicable permits regulating zoning and land use. These permits include road crossing permits from Idaho and Palermo Townships. Sacagawea will utilize construction inspectors to monitor compliance with environmental conditions of permits during proposed construction activities.

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

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

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

D.6 Measures to Protect Water Resources

Sacagawea's CMRP describes best management practices that will be implemented to minimize off-site erosion from surface water runoff, and to protect water and soil resources within the ROW for pipeline construction.

No additives to discharge water will be permitted in accordance with the applicable permits. Construction inspectors with environmental training will monitor compliance with permits during pipeline construction. 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.

D.7 Measures to Protect Cultural Resources

Based on the results of the Class I and Class III cultural resource inventories, a finding of *No Historic Properties Affected* has been issued by Beaver Creek Archaeology, Inc., provided that the recommendations are followed as discussed in Section B.6. The findings of all inventory studies are presented in more detail on the route maps found in Tab 4, Figure 4.B.1.

An "Unanticipated Discovery Plan" has been developed should unexpected artifacts be uncovered during proposed construction.

Unanticipated Discovery Plan

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

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

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

If the unanticipated discovery is determined to be not eligible for inclusion on the NRHP, Sacagawea will proceed with construction following written concurrence from the SHPO. If the site is determined to be potentially eligible for inclusion on the NRHP, additional work such as a

Determination of Eligibility of Data Recovery will be performed as required/approved by the SHPO. Further work at the site will be suspended until all criteria of Section 106 of the NHPA and other Federal and State regulations have been successfully completed.

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

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

SECTION E QUALIFICATIONS OF PERSONS CONTRIBUTING TO THE STUDY

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

(1) Thomas G. Janik, VP Engineering – Paradigm Energy Partners, LLC

Degree: Bachelor of Science - Civil Engineering, Texas A&M University

Experience: 38 years of experience in the oil and gas industry including executive management experience in engineering and corrosion services, project and construction management, operations, and pipeline and facilities construction. In addition, he is experienced in the development and management of pipeline integrity management process safety management programs.

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

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

Experience: 33 years' experience in petroleum refining and fuels transportation field as well as regulatory affairs and compliance.

Professional License: Registered Professional Engineer: North Dakota, South Dakota, Montana

(3) Heather Patch, Staff Engineer (Chemical) – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Chemical Engineering, University of North Dakota

Experience: 3 years' experience in engineering, regulatory affairs and compliance.

(4) Karine Becker, Project Manager – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Natural Resource Management,
University of Minnesota - Crookston

Experience: 6 years' experience in natural resource management.

(5) Ryan King, Environmental Specialist – Keitu Engineers & Consultants, Inc.

Degree: Bachelor of Science - Construction Management, North Dakota State University
Master of Natural Resources Management, North Dakota State University

Experience: 2 years' experience in natural resource management and regulatory affairs.

SECTION F MAPS

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

SECTION G OTHER MATTERS

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

G.1 Right-of-Way Preparation, Construction, and Reclamation Procedures for the Pipeline

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

Construction of the Project will follow standard techniques employed by other projects installed in North Dakota. Typical ROW preparation, pipeline construction, and reclamation using girth full penetration welds include: (1) survey and staking of the right-of-way; (2) clearing; (3) front-end grading; (4) right-of-way topsoil stripping; (5) pipeline route staking; (6) pipe stringing; (7) pipe bending; (8) pipe alignment and initial weld; (9) fill and cap with final weld; (10) as built footage; (11) x-ray inspection and weld repair; (12) coating field welds and coating inspection; (13) trenching; (14) lowering pipe into trench; (15) as-built survey; (16) pad, backfill to rough grade; (17) hydrostatic testing and system tie-in; (18) clean-up; and (19) restoration and re-vegetation.

G.1 (a) Survey and Staking

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

G.1 (b) Clearing

Sacagawea will clear the 100-foot-wide ROW utilized for construction of shrubs and trees. The clearing crew 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. No merchantable timber is anticipated to be cleared from the ROW.

G.1 (c) Grading

Following clearing, the surface will be graded to provide a relatively smooth working surface and a safe working area.

G.1 (d) Topsoil Stripping

For pipeline construction, topsoil is stripped and segregated in agricultural areas, cropland, hayfields, pasture, residential areas, and other areas as requested by the landowner along the route in accordance with Sacagawea's CMRP. In unsaturated wetlands, a maximum of 12 inches of surficial soils may also be stripped from the trench areas. Topsoil is stripped to the depth of cultivation or to a maximum depth of 12 inches.

G.1 (e) Pipeline Route Staking

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

G.1 (f) Pipe Stringing

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

G.1 (g) Pipe Bending

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

G.1 (h) Pipe Alignment and Initial Weld

After stringing and bending are completed, pipe sections are aligned and placed on temporary supports located adjacent to the proposed trench locations. Pipe ends are attached to each other using short welds or high pressure joining techniques.

G.1 (i) Fill and Cap Segment Welds

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

G.1 (j) As-built Footage

Once welding is complete, Sacagawea will compare the as-built condition and length of the pipeline with construction drawings. Documents are edited to reflect impacts of field decisions as well as final locations of lateral tie-in points, other pipeline apertures, and cathodic protection connections.

G.1 (k) X-Ray Inspection and Weld Repair

PHMSA regulations require that at least 10% of the field welds be inspected using radiological (i.e., X-ray) and/or other non-destructive testing, such as checking coating integrity. Sacagawea will engage a third-party inspection service provider meeting PHMSA certification requirements to perform X-ray inspections of the welds. After adequate performance has been established

based on statistically significant data, and each of the pipeline's welders have demonstrated proper weld material handling, a reduction in the percentage of welds inspected may be considered; however, the percentage of welds inspected will never fall below the requisite 10%. When welds are deemed inadequate, appropriate repairs will be made consistent with PHMSA regulations and re-inspected. Inspection records are cross-referenced against the final "as-built" footage of the pipeline.

G.1 (l) Coating and Coating Inspection of Field Welds

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

G.1 (m) Trenching

Backhoes and/or ditching machines are used to excavate trenches in accordance with PHMSA regulations, which require a minimum 30 inches of cover for normal excavations and 18 to 30 inches of cover in rocky areas. Sacagawea uses a minimum cover of 48 inches. The trench walls are generally kept vertical to the extent practicable and the trenches are typically 30 to 40 inches wide.

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

G.1 (n) Lowering Pipe Into Trench

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

G.1 (o) As-built Survey

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

G.1 (p) Pad and Backfill to Grade

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

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

G.1 (q) Hydrostatic Testing

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

G.1 (r) Cleanup

Cleanup involves removing construction debris (including litter generated by construction crews and excess rock) and replacing fences removed during construction. In addition, extraneous material that would impede seed bed preparation is removed from the ROW.

G.1 (s) Restoration and Re-vegetation

Following installation and final cleanup of the construction area, original grade and contours are restored to the extent practicable, and temporary and permanent erosion controls are installed. Disturbed areas will be re-vegetated in accordance with permit requirements, agency input, and site-specific landowner requests. Monitoring will continue until 70% or higher vegetative cover has been established.

G.2 Landowner Issues

G.2 (a) Procedures for Landowner Relations

Sacagawea is working to finalize easement agreements with all landowners along the Project route. Construction of the pipeline will minimizing impacts to agriculture where feasible.

Sacagawea is committed to providing landowners complete information about the pipeline and associated facilities and keeping them informed throughout the lifetime of the Project. Sacagawea will personally contact landowners to discuss methods of calculating damage settlements and tenant's rights, and to address any unique property concerns, as needed.

G.2 (b) List of Landowners

By use of county records, a current list of landowners was generated and used to contact residents. In addition to landowners, all known tenant farmers in the construction area will be notified prior to construction.

G.3 Operations and Safety

G.3 (a) Pipeline Operation and Control

The pipeline will be operated by Phillips 66. Remote monitoring and control of the pipeline system will be maintained. Phillips 66's Control Center in Bartlesville, Oklahoma is monitored by pipeline operators 24 hours a day. The Control Center also serves as an emergency center to receive calls from employees, the public, or public officials reporting unusual conditions of the pipeline, associated storage or pumping equipment, and/or pipeline failures.

The pipeline will also be designed to accommodate an instrumented internal inspection device to detect and record the type and location of corrosion or other defects for long-term monitoring of the pipeline integrity.

G.3 (b) Communications Capabilities

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

G.3 (c) Protection of the Pipe from Damage

Sacagawea has an aggressive program to educate excavators and the public about the presence of pipelines and to prevent damage from excavating equipment. Sacagawea participates in and supports the North Dakota One-Call system.

The pipeline will be protected from corrosion in a number of ways. The pipeline will be covered with a protective coating. In addition, the pipeline will be under a cathodic protection system, as required by PHMSA regulations.

G.3 (d) Inspections

Sacagawea will conduct routine inspections of the pipeline to determine that the system is operating properly and in compliance with PHMSA regulations. All inspections will be conducted on a timeline consistent with federal guidelines.

Rectifier readings for the cathodic protection system will be taken. The cathodic protection system will be monitored by taking pipe-to-soil readings. Additionally, each rectifier and anode ground bed used to impose cathodic protection on the pipeline will be inspected to ensure proper operation. Repairs and adjustments to the cathodic protection system are either made during the survey or during later maintenance activities.

Sacagawea will conduct aerial inspections. Road crossings will be inspected via foot/vehicle patrol. These inspections are to verify that no abnormal conditions or dangerous activities, e.g., unauthorized excavation, have taken place along the routes of the lines.

Block valves will be checked to ensure proper operation.

Sacagawea will periodically inspect the pipeline internally with a tool called a caliper pig. These devices travel through the inside of the pipeline and either mechanically, ultrasonically, or magnetically examine the condition of the pipe using on-board computers. Results of the inspection are analyzed, and the pipe is manually inspected to verify preliminary findings. Repairs will be conducted where necessary.

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

Periodically, government officials may inspect compliance with applicable government regulations. PHMSA routinely inspects written procedures, records, and facilities.

G.3 (e) Maintenance

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

G.3 (f) Training of Personnel

Training of personnel for the Project will conform with the policies and procedures put in place by Phillips 66. Phillips 66 has established a comprehensive orientation, technical, safety, emergency, and on-the-job training program that is in compliance with the Operator Qualification rules issued by PHMSA under 49 C.F.R. Part 195. As personnel progress in pipeline operation and maintenance positions, they receive hundreds of hours of formal and on-the-job training. Demonstrations of competence are shown through review of job performance, periodic pipeline control system simulators, emergency exercises, welding certification tests, and other functions required to continue safe pipeline operation and maintenance.

G.3 (g) Public Awareness Program

Sacagawea will conduct a public education program to ensure that the affected public (i.e., those who work and live near the Project), excavators, local public officials, and emergency responders can recognize and avoid or respond to a pipeline emergency. Sacagawea will also be active at the local, county, and state levels in emergency response planning and joint training to prepare all potential responders to deal with emergencies.

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

G.3 (h) Emergency Preparedness

Sacagawea's operating and maintenance practices are aimed at preventing emergencies. However, it is imperative that Sacagawea be prepared to respond to an emergency should one occur. In addition to the preventative activities described above, Sacagawea's emergency response program includes pre-planning, equipment staging, notifications, emergency and leak containment procedures, and procedures for engaging the services of area contract spill responders.