

Attachment F

## **Plan of Development**

### **Bison Pipeline Project**

FERC Docket No. CP09 -161-000  
Previously Docket No. PF08-23-000

### **Bureau of Land Management**

Authorization No. WYW177061

**May 2010**

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## THE PLAN OF DEVELOPMENT

This Plan of Development (POD) outlines the construction procedures, environmental requirements, site-specific and project plans, and mitigation measures that will be implemented during construction of the Bison Pipeline Project (Project) on Bureau of Land Management (BLM)-managed lands. In most cases, construction procedures along the entire right-of-way (ROW) will follow BLM guidelines. Any procedures on non-BLM lands that do not follow BLM guidelines reflect specific Project needs and were evaluated to ensure they provide an equivalent level of effectiveness and resource protection.

The POD was developed from the environmental analysis conducted as part of the National Environmental Policy Act (NEPA) compliance process. This analysis provided measures for avoidance, minimization, and mitigation of environmental impacts resulting from construction of the Project. The Federal Energy Regulatory Commission (FERC) was the lead Federal agency under NEPA responsible for the preparation of the Environmental Impact Statement (EIS) for the Project with the BLM as a cooperating agency. The BLM served as a cooperating agency in the NEPA process, providing comments, information, and analysis for the EIS, and has adopted the Final EIS per Title 40 Code of Federal Regulations (CFR) Part 1506.3.

Much of the information in this POD is summarized from the Final EIS and various Plans that have been completed during the NEPA analysis and are included as Appendices to the POD. The POD appendices incorporate plans, maps, and other information, as well as permits and other authorizations that include environmental requirements. The POD is intended to serve as the mechanism to implement the BLM requirements identified during agency review of lands under Federal jurisdiction.

Revisions of the POD and attachments are expected prior to the start of construction as a result of on-going agency meetings and consultations, on-going environmental surveys, and Project re-routes. If amendments and/or additions to the POD are requested by BLM, or appendices are recommended by regulatory agencies, including BLM, prior to or during construction of the Project, the POD will be consistently and accurately maintained as a reference document. All updated information will be tracked in the POD Revision Table on page v.

**POD Revision Table**

<b>Date of Revision</b>	<b>Description and Purpose of Revision</b>	<b>Revised Section(s):</b>
June 12, 2008	Draft Plan of Development submitted to the BLM. Consisted of basic Bison Project information and outline of POD.	All
June 18, 2009	Second Draft of the Plan of Development submitted to the BLM. POD updated to include information based on the Bison Rev Lv5 alignment.	All
January 2010	Third Draft of the POD. POD updated to include information based on the Bison Rev Lv17 alignment, updated procedures, and the Final EIS.	All
April 2010	Final version of the POD. POD updated to address BLM comments received in February 2010, the results of consultation with the BLM since February 2010, and Project changes since the FEIS analysis.	All
May 2010	POD updated to address BLM comments received in April 2010.	Sections 7.10, 7.13 and 8.1 Appendices B, F, G, O, P and S

Pipeline Plan of Development Outline		Found In:	
Purpose and Need	What will be constructed?	Section 1.1	
	Commodity to be transported and for what purpose?	Section 1.2	
	Is the Pipeline for a gathering system, trunk line, or distribution line?	Section 1.2	
	Will it be surface or subsurface?	Section 1.3	
	Length and Width of a right-of-way and the area needed for related facilities	Section 1.4	
	Is this an ancillary to an existing right-of-way?	Section 1.4	
	List alternative routes or locations	Section 1.4.2	
Right-of-way Location	Legal description	Section 2.0	
	Site specific engineering surveys for critical areas (note: in additional to normal centerline survey)	Section 2.1	
	Maps and drawings showing river crossings	Appendix A	
	Acre calculation of the right-of-way by land status	Section 1.4	
Facility Design Factors	Pipeline pressure standards (pipe wall thickness and pounds per square inch (psi) rating)	Section 3.0	
	Toxicity of the pipeline product	Section 3.0	
	Anticipated operating temperatures	Section 3.0	
	Depth of the pipeline	Section 6.3.6	
	Permanent width or size	Section 1.4	
	Temporary areas needed	Section 1.4	
Additional Components of the Right-of-way	Connection to an existing Right-of-way 1) Existing components on or off public land 2) Possible future components	Section 4.1 Section 4.4	
	Location of pumping and/or compressor stations	Section 4.2	
	Need for sand and gravel and where it will be obtained	Section 4.3	
	Location of equipment storage areas	Section 4.4	
Government Agencies Involved	FERC, USFWS	Section 5.1	
	Copy of FERC Sec. 7(c) Application and supplemental information	Section 5.1	
	State and local agencies that may be involved	Appendix G	
Construction of the Facilities	Construction (brief description)	Section 6.0 Section 6.3	
	Work Force (number of people and vehicles)	Section 6.2	
	Flagging or staking the right-of-way	Section 6.3.1	
	Clearing and grading	Section 6.3.3	
	Facility construction data (description of construction process)	Section 6.3	
	Access to, and along, right-of-way during construction	Section 1.4.1	
	Engineering drawings and specifications for site-specific problems relating to surface use or special mitigation	Appendix A	
	Diagrams, drawings, and cross sections to help visualize the scope of the Project.	Appendix B	
	Special Equipment that will be utilized	Section 6.3	
	Contingency planning 1) holder contacts 2) BLM contacts	Section 6.15	
	Safety requirements	Section 7.11	
	Industrial wastes and toxic substances		Section 6.12
			Section 6.13

Pipeline Plan of Development Outline		Found In:
Resource Values and Environmental Concerns	Address at level commensurate with anticipated impacts 1) Location with regard to existing corridors	-
	Anticipated conflicts with resources or public health and safety 1) air, noise, geologic hazards, mineral and energy resources, paleontological resources, soils, water, vegetation, wildlife, threatened and endangered species, cultural resources, visual resources, BLM projects, recreation activities, wilderness, etc.	Section 7.0
Stabilization and Rehabilitation	Soil replacement and stabilization	Section 8.1
	Disposal of vegetation removed during construction (i.e. trees, shrubs, etc.)	Section 8.2
	Seeding specifications	Section 8.3
	Fertilizer	Section 8.3
	Limiting access to the right-of-way	Section 1.4.1, Section 8.4
	Will roads built during construction be reclaimed?	Section 8.4
Operation and Maintenance	Will new or expanded access be needed for operation and maintenance?	Section 9.1
	Will there be hydrostatic testing and subsequent release of water and what is the anticipated volume?	Section 9.5, Appendix I
	Will removal and/or addition of pipe and/or pumps be required as part of the pipeline maintenance?	Section 9.1
	Will maintenance activities be confined within the right-of-way?	Section 9.4
	Safety	Section 9.6
	Will industrial wastes and toxic substances be generated or stored on right-of-way	Section 9.1
	Inspection and maintenance schedules 1) will these be conducted on-the-ground and/or by aircraft? 2) If by aircraft, will the aircraft require landing strips and/or heliports?	Section 9.3
	Work Schedules	Section 9.1
	Fire Control	Section 9.8
	Contingency planning	Section 9.9
Termination and Restoration	Removal of structures	Section 10.0
	Will pipe be removed or cleaned and left in ground?	Section 10.1, Section 10.2
	Obliteration of roads	Section 10.3
	Stabilization and re-vegetation of disturbed areas	Section 10.4

## 1.0 Purpose and Need

### 1.1 Bison Pipeline Project

Bison Pipeline LLC (Bison) proposes to construct and operate an interstate underground natural gas pipeline and related facilities extending from the Dead Horse region, Wyoming, through southeast Montana and southwest North Dakota to an interconnection with Northern Border Pipeline Company's (Northern Border) pipeline system near Northern Border's Compressor Station No. 6 (CS#6) in Morton County, North Dakota. The Bison Pipeline Project (Project) will be regulated by the FERC, which is the lead federal agency for the evaluation of the impacts of the Project pursuant to the NEPA. This NEPA review is being conducted in accordance with the FERC's Pre-Filing Process (18 CFR Part 157.21). The BLM is a cooperating agency as part of the NEPA review. The FERC Application was filed on April 20, 2009, with subsequent amendments in June, July, October, and December 2009. Following the Application filing, FERC issued Docket No. CP09-161 for the Project. On April 9, 2010, FERC issued the Certificate of Public Convenience and Necessity (Certificate) for the Project.

The Project consists of approximately 301 miles of 30-inch diameter pipeline (approximately 78 miles in Wyoming, 97 miles in Montana, and 126 miles in North Dakota) having an initial proposed capacity of 477 million cubic feet per day (MMcf/d), with potential expandability of up to approximately 1 billion cubic feet per day (Bcf/d) (**Table 1-1, Figure 1-1**). The targeted in-service date for the Project is November 2010. The associated facilities for the Project are provided in Section 1.3.

**Table 1-1 – Description of Bison Pipeline Project – Pipeline Length**

Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/2010

State	County	From MP <sup>a</sup>	To MP <sup>a</sup>	Total Length in Miles (BLM total)
WY	Campbell	-0.49	79.20	77.84 (3.04)
MT	Powder River	79.20	88.97	9.78 (0.43)
	Carter	88.97	169.44	80.42 (16.68)
	Fallon	169.44	175.83	6.40 (0.00)
ND	Bowman	175.83	217.56	42.20 (4.71)
	Slope	217.56	237.65	20.20 (0.00)
	Hettinger	237.65	274.60	37.15 (0.00)
	Stark	274.60	282.32	7.97 (0.00)
	Grant	282.32	286.30	4.04 (0.00)
	Morton	286.30	301.43	15.17 (0.00)
<b>Total</b>				<b>301.16 (24.86)</b>

<sup>a</sup> Mileposts shown in the "From MP" and "To MP" columns are based on RevLv18 calibrated mileposts. At locations where the pipeline has been rerouted post Rev L, the milepost units have been stretched or compressed in order to maintain mileposting along the rest of the line consistent with Rev L. Crossing lengths are based on the true linear crossing length along the Construction ROW. Because of this, the difference between the "From MP" and "To MP" values at reroute locations may not always equal the crossing distance value.

Figure 1-1 – Project Overview Map



## 1.2 Commodity and Purpose

The Project is designed to transport a minimum of approximately 477 MMcf/d of natural gas from the Powder River Basin, with a potential system expandability of up to approximately 1 Bcf/d, to serve markets in the Midwest. This entails the construction of an interstate natural gas pipeline, one compressor station, and associated facilities, which will interconnect with the existing interstate natural gas pipeline system owned by Northern Border at CS#6 (Morton County, North Dakota). The Project will provide Powder River Basin producers additional access to markets primarily in Iowa, Minnesota, Wisconsin, and Illinois (hereinafter referred to as the "Midwest market"). The Midwest market desires a new source of reliable, long-term, and competitively priced natural gas to meet needs resulting from increasing demand and declining Canadian supply. This Project will increase the options for both natural gas producers in the Powder River Basin and end users in the Midwest market.

The primary objectives of the Project are to:

1. Provide producers in the Powder River Basin with additional natural gas pipeline capacity to access and meet the increasing natural gas demand of the Midwest market;
2. Provide access to a source of natural gas to replace the declining Canadian supply and satisfy the growing demand for natural gas primarily in the Midwest market;
3. Provide the benefits of supply diversity and enhanced reliability to the Midwest market, thereby minimizing reliance on more costly sources of energy;
4. Efficiently meet the objectives of 1), 2) and 3) above with minimal pipeline construction and environmental impacts through the use of existing available pipeline capacity on the Northern Border pipeline system;
5. Provide an opportunity for a future expansion/extension to access the supply basins in Colorado, Utah, and Wyoming, including the Piceance, Uinta, and Greater Green River; and
6. Meet customers' desire to commence service in November 2010.

## 1.3 Pipeline Description

The Project consists of the following subsurface and aboveground facilities:

- Approximately 301 miles of 30-inch diameter subsurface pipe;
- A new 4,700 horsepower (hp) compressor station at milepost (MP) 257.16;
- Two meter stations, including one receipt meter station at approximate MP -0.49 and one delivery meter station at approximate MP 301.43; and
- Nineteen mainline valve sites (MLV).

The location of the various facilities and the routing of the proposed pipeline are provided in **Appendix A**.

## 1.4 Land Requirements for the ROW and Related Facilities

The proposed construction work area (the footprint of all disturbances during construction) for the pipeline facilities is estimated to be approximately 5,651.9 acres (463.34 acres on BLM land). This area is required for the construction of 301 miles of new 30-inch diameter natural gas interstate transmission pipeline for the Project. ROW will be acquired from landowners of the property where the Project facilities will be located.

Bison is proposing a construction ROW of 120 feet (Construction ROW). The 120-foot Construction ROW will include a 50-foot permanent ROW (Permanent ROW), 60-foot temporary work space and another 10-foot temporary work space (collectively, the TWS) on the working side of construction for the temporary storage of residual snow, if necessary, during construction activities. Typical drawings for the Project, including ROW configurations, pipeline design, construction methods, and erosion control measures, are provided in **Appendix B**.

Extra work space (EWS) outside of the 120-foot Construction ROW will also be required at the following locations to provide area for specialized equipment and operations:

- Mobilization and demobilization areas at each end of each construction spread;
- Truck turnaround areas;
- Where the pipeline crosses under buried features, such as utilities/pipelines, utility lines, drain tiles, irrigation systems, etc.;
- At road and waterbody crossings;
- Where spread “move-arounds” and “turnarounds” are required;
- Where the push/pull construction technique may be used to cross wetlands;
- Side slope areas to allow for grading and material storage;
- Other areas as determined by site-specific conditions required to provide extra space for spoil storage and construction activities; and
- At side bends in the pipeline.

EWS will be set back at least 50 feet from the edges of waterbodies and wetlands (exclusive of the Construction ROW), except as otherwise approved by the FERC in consultation with the BLM to accommodate constraints related to topographic or other site-specific factors.

If snow is encountered during construction, Bison will employ its Snow Removal Plan provided in **Appendix C**. The Snow Removal Plan describes the methods that will be used to remove snow from the Construction ROW and store it within the outermost 10-foot TWS reserved for storage of snow. Bison will use only 110 feet of the Construction ROW for surface disturbances associated with the construction of the Project. Bison’s contract documents and the construction alignment sheets will reflect only the 110-foot Construction ROW and EWS for construction activities. This Construction ROW represents the width necessary to facilitate construction in an efficient, safe, and environmentally responsible manner. All lands impacted by construction will be restored in accordance with Bison’s Upland Erosion Control, Revegetation, and Maintenance Plan (Bison’s Plan) (**Appendix D**), Bison’s Wetland and Waterbody Construction and Mitigation Procedure (Bison’s Procedures) (**Appendix E**), and Bison’s Reclamation Plan (**Appendix S**). Bison’s Plan and Procedures were derived from FERC’s Plan and Procedures to be Project-specific, and they offer a comparable level of resource protection as FERC’s Plan and Procedures.

**Table 1-2** shows the mileage and acreage impacts to be associated with the Project, including BLM land (in parentheses). The pipeline acreages are conservative, since they are based on a Construction ROW width of 120 feet, 10 feet of which will be used only for snow storage, if necessary. All disturbed acreage will be restored and returned to its previous condition to the extent practicable, except for approximately 22.00 acres that will be occupied by permanent aboveground facility sites.

**Table 1-2 – Project Land Requirements (Project ROW)**

Data contained within this table are based on the Rev Lv18 centerline shapefile issued on 2/12/2010

Project Component	Length in miles (BLM)	Land Temporarily Affected During Construction in acres (BLM)	Land Permanently Affected During Operation in acres (BLM)
Pipeline	301.16 (24.86)	4293.9 <sup>b</sup> (353.07)	1825.3 <sup>c</sup> (150.65)
Extra Workspace adjacent to Construction ROW	-	511.1 (41.62)	0.00 (0.00)
Temporary Access Roads <sup>a</sup>	-	350.0 <sup>e,f</sup> (68.65)	0.00 (0.00)
Permanent Access Roads <sup>a</sup>	-	0.00 (0.00)	33.48 (12.31 <sup>g</sup> )
Pipe Yards, Rail Yards, and Contractor Yards	-	472.2 (0.00)	0.00 (0.00)
Hettinger Compressor Station (includes MLV 257)	-	20.00 (0.00)	20.00 (0.00)
MLVs (MLV 161 includes launcher/receiver)	-	0.00 <sup>d</sup> (0.00)	0.00 <sup>d</sup> (0.00)
Meter Stations (includes launcher or receiver, MLV -0.49, and MLV 301)	-	2.00 (0.00)	2.00 (0.00)
<b>Total</b>	<b>301.16 (24.86)</b>	<b>5,649.2 (463.34)</b>	<b>1,847.3 (162.96)</b>

<sup>a</sup> Detailed information on Access Roads is included in Section 8.0. These mileages and acreages do not include public roads listed in Table 1-4. Road impacts calculated assuming a 25-foot road width.

<sup>b</sup> Acreage for the pipeline reflects a 120-foot-wide construction right-of-way along the pipeline. Actual acreage will vary since the construction right-of-way within wetlands would be 75 feet wide and 10 feet of the proposed 120-foot-wide right-of-way would be used only if snow was present at the time of construction unless EWSs are proposed on either side of the right-of-way (in which case, the snow storage area would be included in the perimeter of the EWS).

<sup>c</sup> Acreage impacts along the pipeline were calculated based on a 50-foot Permanent ROW.

<sup>d</sup> All MLVs are located within the Permanent ROW, meter stations, or the compressor station. The permanent impact acreages are included within these facilities and are therefore not added to the Total Aboveground Facility Acreage, or the Total Project Acreage.

<sup>e</sup> Access road impacts during construction include two access roads (CA-28 and CA-13-1) that will be used during operation. One additional road, BO-27-1 will be used during operation, but not during construction.

<sup>f</sup> This acreage represents the temporary impact by the Access Roads outside of any workspaces for which the land use acreages have already been accounted.

<sup>g</sup> These roads are already existing and will not be modified for use. This number indicates the total acreage of these roads assuming a 25-foot road width.

#### 1.4.1 Related Facilities

Permanent aboveground facilities will include a compressor station, two meter stations and related ancillary facilities such as launchers/receivers, MLVs, cathodic protection system instrumentation, blowdown valves, and communications equipment. With the exception of two MLVs, none of the permanent aboveground facilities will be located on BLM lands. In addition, all rail yards, pipe yards, and contractor yards are located on non-BLM land.

#### MLVs

MLVs (block valves) will be located along the pipeline at intervals prescribed by Department of Transportation (DOT) regulations and at locations related to specific conditions along the proposed route. MLVs will be installed within the Permanent ROW and at selected aboveground facilities. Similarly, launchers/receivers will be located within meter stations and at one MLV site (MLV 161). Two MLVs are located on BLM land (MLV-142 and MLV-180) (**Table 1-3**).

Valve No.	MP	County, State	Legal Description	Site Size
MLV-142	141.60	Carter County, Montana	T2S, R59E, Sec 20  UTM 1777444.308m E 16583823.603m N	50' x 75' (0.09 acre)
MLV-180	179.88	Bowman County, North Dakota	T130N, R107W, Sec 24  UTM 1895825.319m E 16738344.207m N	50' x 75' (0.09 acre)

### Other Facilities

Blowdown valves will be located within the fenced areas of the MLVs, meter stations, and the compressor station. Blowdowns are planned to be low profile and extend approximately six feet above grade, the minimum height required for safe operation. They are required to allow rapid evacuation of natural gas within the pipeline. All communications equipment on BLM land will be satellite-based with low profile receivers and transmitters.

### Access Roads

#### *Temporary Access Roads - Construction*

The Project intends to use existing roads on a temporary basis to transport materials, personnel, and equipment (including high clearance vehicles and heavy trucks) to the Project work areas during construction. These roads are referred to as temporary access roads. Entrance and exit points from existing public roads to the proposed Construction ROW are sufficient along many portions of the pipeline to allow for safe, efficient construction and movement of equipment and materials.

There are 140 existing temporary access roads proposed for use during construction. Twenty of these temporary access roads are located on BLM land. Seven are located in Wyoming, nine in Montana, and four in North Dakota. A listing of the access roads on BLM land, providing current status of each proposed access road and the recommended improvements to be made to certain proposed access roads, is provided in **Table 8-1**. Specific location data for these roads, listed by quarter-quarter section, lot or aliquot, are provided in **Appendix A**. Locations of the intersection of access roads and the pipeline route are shown on the maps in **Appendix A**.

#### *Permanent Access Roads - Operations*

Two of the temporary access roads (CA-13-1 and CA-28) in Carter County, Montana, will also be used during operation of the pipeline. These “permanent” access roads provide access to MLVs. In addition, one existing road that crosses BLM land in North Dakota will be used to provide access to a MLV during pipeline operation. This road will not be used during construction. This road currently provides access to a well pad. Bison will negotiate an agreement with the operator of this well and the BLM to use this road. Since the well pad is still located several hundred feet from the MLV, Bison proposes to park vehicles at the well pad site and traverse the remainder of the distance to the MLV across BLM land on foot. In the event that future developments require construction of a road across this currently unimproved land, Bison will consult with the BLM to obtain the necessary authorization and approvals.

#### *County Roads*

Six roads that are County roads that cross BLM lands were identified by BLM’s Miles City Field Office as roads that will require BLM authorization prior to use for portions of these roads on BLM lands. These public roads were not previously identified as access roads for the Project. These roads are listed below in

**Table 1-4.** Please refer to **Appendix A** for a breakdown of the impacts from these roads by quarter-quarter section/lot/aliquot. Maps that illustrate the locations where these roads are situated on BLM lands, and BLM has required BLM authorization, are also included in **Appendix A**. In accordance with BLM requests, Bison will request authorization from BLM [through a Temporary Use Permit (TUP)] to use these road segments.

<b>County</b>	<b>State</b>	<b>Road Name</b>	<b>Road Length on BLM Land (feet)</b>	<b>Total acreage (Based on 25-foot wide impact)</b>
Powder River	Montana	Ranch Creek Road	2,580	1.49
Powder River	Montana	Ridge Road West	1,327	0.76
Carter	Montana	Ridge Road North	1,540	0.88
Carter	Montana	Hammond Road	13,331	7.63
Carter	Montana	Ridge Road	22,665	13.01
Carter	Montana	Webster Road	12,597	7.21
<b>Totals</b>			<b>54,040</b>	<b>30.98</b>

Topographic maps showing all access roads also have been provided in **Appendix A**. Reports detailing the results of biological and cultural resource survey findings on BLM land have been developed and have been provided to BLM under separate cover.

Access to the Permanent ROW will be controlled by fences, gates and signage. Efforts to control unauthorized off-road vehicle use, in cooperation with the landowner or lessee, shall continue throughout the life of the Project.

Additional discussion about access roads is provided below in Section 8.4.

#### 1.4.2 Alternative Routes

The Project route was selected through desktop analysis of environmental impacts, yet provides a practical, cost-effective route to the proposed interconnection at Northern Border's CS#6. Collocation of the proposed route with existing linear infrastructure was a primary consideration during the routing exercise, along with, to the extent possible, avoidance of sensitive environmental areas. Minor route variations and re-routes along the entire Project route (including BLM, private, and state lands) are expected as remaining civil, environmental, and cultural surveys continue on lands with previously denied access. As of the date of this POD, more than 98% of the entire Project route has been surveyed, including all BLM lands. Although no route variations or re-routes are expected on BLM lands, remaining wildlife surveys to be conducted prior to construction may identify avoidance areas, resulting in additional minor route variations.

Initial route selection for the Project is discussed in detail in the Bison Route Selection Report and in the FERC Final EIS, Section 4. The Bison Route Selection Report contains an extensive desktop analysis of several route alternatives, supported by aerial reconnaissance conducted during the spring and summer of 2008. The final Route Selection Report was provided to the FERC and BLM on December 15, 2008, with the first draft of the Environmental Report (ER) for the Project.

An earlier version of the Project route (Project Route Revision B, June 22, 2008) routed through an existing BLM coal mine lease area and a future study area for coal mining. A re-route to avoid this area was proposed by the BLM Buffalo Field Office (FO). This re-route was considered an alternative and eventually incorporated into the current Project route (Project Route Revision Lv18, dated February 12, 2010).

### 1.5 BLM-Managed Areas

The Project crosses land within three BLM FOs, including the Buffalo FO in Wyoming, the Miles City FO in Montana, and the North Dakota FO in North Dakota. Each FO has jurisdiction over land impacts on BLM lands within their FO boundaries. **Table 1-5** lists the MPs and acreage impacts proposed within each FO.

<b>Table 1-5 - Acreages of BLM Lands Affected by the Pipeline Component of the Project</b>		
Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/2010		
<b>Public Land Type</b>	<b>Construction ROW (120') Acreage<sup>a, b</sup></b>	<b>Permanent ROW (50') Acreage<sup>a</sup></b>
<b>BLM Lands – Campbell County, Wyoming</b>	<b>43.68</b>	<b>18.43</b>
<b>BLM Lands – Powder River County, Montana</b>	<b>6.26</b>	<b>2.58</b>
<b>BLM Lands – Carter County, Montana</b>	<b>237.65</b>	<b>101.07</b>
<b>BLM Lands – Montana Total</b>	<b>243.91</b>	<b>103.65</b>
<b>BLM Lands – Bowman County, North Dakota</b>	<b>65.48</b>	<b>28.57</b>
<b>Total BLM Lands - All States</b>	<b>353.07</b>	<b>151.70</b>
<sup>a</sup> Actual numbers may vary due to rounding. <sup>b</sup> Construction ROW acreages include permanent ROW acreage. For specific acreages associated with each Section, please refer to the Legal Description table provided in <b>Appendix A</b> .		

BLM lands represent the only federal lands that are crossed by the Project. Locations of BLM lands crossed by the Project are illustrated below in **Figure 1-2**.

Figure 1-2 – Federal Lands Affected by the Project



## 2.0 ROW LOCATION

Maps of the Project ROW, including section, township, and range are provided in **Appendix A**. Federal lands (BLM) crossed by the proposed route in Wyoming are under the jurisdiction of the Buffalo FO. Federal lands crossed by the proposed route in Montana and North Dakota are under the jurisdiction of the Miles City FO and the North Dakota FO, respectively. In Section 1.5, **Table 1-5** provides the acreages of BLM lands affected by the Project. A tabulation of the total acreage of the Project ROW is provided in **Table 1-2** in Section 1.4.

### 2.1 Site-Specific Engineering Surveys for Critical Areas

Where appropriate, site-specific engineering surveys on BLM lands have been conducted on critical areas, including waterbody crossings, wetland crossings, road crossings, steep sloped areas, and BLM-identified areas of concern. As of April 2010, all environmental surveys and all heritage resource surveys were complete for BLM lands. Survey reports have been submitted to BLM under separate cover. Information obtained during these surveys has been incorporated into appropriate sections of this POD and Attachments. Additional information on environmental surveys to be completed on BLM lands in 2010 is provided below in Section 6.3.1.

### 2.2 Legal Descriptions

Legal descriptions for the BLM lands affected by the Project, by quarter-quarter section, lot or aliquot, are provided in **Appendix A**. For impacts on BLM lands that will be covered under a BLM ROW Grant, copies of signed and stamped plats are also included in **Appendix A**. Original signed and stamped copies of these plats have been provided to BLM under separate cover.

## 3.0 DESIGN FACTORS

The pipe specifications for the Project are identified in **Table 3-1**.

<b>Design Parameter<sup>a</sup></b>	<b>Line Pipe - 0.80 Design Factor</b>	<b>Line Pipe - 0.72 Design Factor</b>
Maximum Allowable Operating Pressure (MAOP) (psi)	1440	1440
Wall Thickness (in.)	0.386	0.438
Grade of Steel	X70 (70,000 psi)	X70 (70,000 psi)

<sup>a</sup>An external fusion bond epoxy coating and internal epoxy coating will be factory applied.

The entire route is in Class 1 areas, as defined in 49 CFR Part 192. Bison proposes to utilize a 0.80 Design Factor for approximately 80 percent of the Project and a 0.72 Design Factor for the remaining 20 percent, except where heavier wall pipe is required (e.g., crossings, stations, etc.). The use of 0.72 and 0.80 Design Factor pipe is in accordance with 49 CFR Part 192. Other wall thicknesses for these crossings are 0.617 and 0.514 inches, respectively, with the same MAOP and grade as the other pipe specifications. The product transported in the Bison Pipeline is natural gas. Natural gas is non-toxic.

The pipeline operating temperature is expected to be that of the ground temperature. Slight temperature variations may occur immediately downstream of compression, but the pipeline temperature will equilibrate with the surrounding soils within a relatively short distance.

Depth of cover requirements for the Project are provided in Section 6.3.7.

## 4.0 ADDITIONAL COMPONENTS OF THE RIGHT-OF-WAY

### 4.1 Connection to an Existing Right-of-way

Approximately 42.55 miles (14 percent) of the 301 miles of the Project route are intended to be located parallel to existing pipeline rights-of-way. Only segments of the proposed pipeline route that are at a maximum distance of 25 feet from adjacent pipeline right-of-ways are considered as collocated. Of the 42.55 miles, approximately 2.13 miles of the Project route are collocated on BLM land.

### 4.2 Compressor Station

The Project will require one 4,700-hp natural gas fired compressor located on non-BLM land in Hettinger County, North Dakota, at approximate MP 257.

### 4.3 Construction Materials

In the unlikely event that imported soil materials are needed for backfilling, they will be of similar composition to the existing soils at the level to be backfilled. For rock areas, sand will most likely be used to backfill and pad the pipe. For stream beds, gravel will most likely be used. The imported materials such as soil, rock, straw, and other materials used on BLM land will be obtained only from commercial sources or other areas approved by the BLM.

### 4.4 Storage Yards

There will be pipe yards, contractor yards, and rail yards in various locations near the Project route. The land used for pipe yards, rail yards, and contractor yards will be temporary and will not be required after construction. No pipe yards, rail yards, or contractor yards are located on BLM land.

### 4.5 Future Components

Depending on the development of commercial support, expansions of the Bison Pipeline may be proposed in the future to meet projected growth in the Rocky Mountain and Powder River Basin gas supply. Potential expansions envisioned at present would access additional volumes of natural gas from the Powder River, Piceance, Uinta, and Greater Green River Basins for transport to the Midwest market via Northern Border. Such expansions likely would be facilitated by additional compression at existing or new compressor stations, looping of the Bison Pipeline, and/or pipeline extensions into other areas. No expansions are anticipated to be supported by the market prior to 2012.

## 5.0 ENVIRONMENTAL COMPLIANCE

### 5.1 Federal and State Agency Involvement

The Project is under the jurisdiction of the FERC, the lead federal agency for developing the EIS. The FERC is responsible for the preparation of the EIS in compliance with the Council on Environmental Quality (CEQ) regulations for implementing procedural provisions of NEPA (40 CFR Parts 1500-1508) and FERC's regulations implementing NEPA (18 CFR Part 380). Federal, state, and local regulatory agencies that have permit or approval authority for portions of the Project are identified in **Appendix G**.

Bison filed an ER with FERC on April 20, 2009, which includes Resource Reports Nos. 1 through 12, and evaluates the environmental impacts that will be associated with the Project. The ER was prepared in accordance with 18 CFR Part 380, Regulations Implementing the NEPA, as amended by Order No. 603, FERC Stats. & Regs., Preambles 31,073 (April 29, 1999), No. 603-A, revision of existing regulations under Part 157 and related sections of the Commission's regulations under the Natural Gas Act (September 29, 1999), Nos. 609 and 609-A, Landowner Notification, Expanded Categorical Exclusions, and other Environmental Filing Requirements (March 16, 2000). This ER also was developed in accordance with

FERC Order No. 665 (October 2005), Pre filing Procedures for Review of LNG Terminals and Other Natural Gas Facilities. A copy of the FERC Section 7(c) Application was provided to the BLM on April 20, 2009. FERC published a Draft EIS in August 2009. Supplemental information, including updated survey progress reports, cultural reports, paleontological reports, correspondences, and responses to the Draft EIS, were submitted to FERC in June, July, October, and December 2009. The Final EIS was issued in late December 2009. On April 9, 2010, FERC issued the Certificate of Public Convenience and Necessity (Certificate) for the Project. Environmental Conditions provided in the Certificate that apply to BLM lands are addressed in this POD.

The BLM is a cooperating agency with jurisdictional authority over the Project on BLM land. As a cooperating agency, the BLM participated in the EIS development with the FERC to satisfy its responsibility under NEPA regarding the BLM ROW Grant. The BLM issues ROW Grants for natural gas pipelines under the authority of Section 185(f) of the Mineral Leasing Act of 1920 (MLA), as amended, through issuance of a Record of Decision (ROD). BLM ROW Grant applications are subject to standard approval procedures, as outlined in 43 CFR Part 2800 and 2880, and may include conditions of authorization, notices to proceed, or additional stipulations. The BLM is responsible for compliance on federally-managed land. This POD includes site-specific stipulations, plans, permit conditions, and agreements developed during the course of the NEPA review to be included as part of the BLM ROW Grant.

The U.S. Army Corps of Engineers (USACE), U.S. Fish & Wildlife Service (USFWS), the Wyoming, Montana, and North Dakota State Historic Preservation Officers (SHPO), and other state and local agencies also have regulatory authority. The USACE has the regulatory mechanism under Section 404 of the Clean Water Act (CWA) for the protection and management of waters and wetlands crossed by the Project. Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or excavation within Waters of the United States and authorizes the USACE to issue individual or nationwide permits (NWP) for proposed actions. Compliance with Sections 401 and 402 of the CWA will be made through the delegated authority of the state regulatory approval process. The FERC, in consultation with the USFWS, is the lead Federal agency responsible for compliance with the Endangered Species Act (ESA, Section 7). The FERC, in consultation with the SHPOs, is also responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA). Accordingly, the FERC is responsible for ensuring successful implementation of the Historic Properties Treatment Plan, if applicable, and the Unanticipated Discoveries Plan for Cultural Resources.

Bison will implement an environmental compliance program for the Project. Prior to commencement of construction activities, Bison personnel and Bison's chief inspector, construction contractor, and environmental inspectors will be provided copies of all conditions placed on construction by the FERC, the BLM ROW Grant, various permits, and agreements with landowners (including BLM) and other parties. These conditions will include all commitments made by Bison in its various filings related to the Project, including this POD, Bison's Plan (**Appendix D**), Bison's Procedures (**Appendix E**), and Bison's Reclamation Plan (**Appendix S**). Bison personnel and Bison's chief inspector, construction contractor, and environmental inspectors will be required to enforce these conditions for all Project activities. The construction contractor will be provided with detailed and specific environmental specifications and drawings to ensure compliance with the Project-specific conditions and commitments, including notification requirements and approved mitigation measures.

The Project scope, conditions, and requirements will be reviewed with the installation contractor, and procedures will be established to familiarize all construction and company personnel with pertinent construction-related documents and to ensure that all conditions will be adhered to during the construction and restoration process. Additionally, all personnel will undergo Project-specific environmental training, highlighting conditions imposed by federal, state, and local agencies, as well as landowner-imposed conditions, prior to commencement of work.

## 6.0 GENERAL PIPELINE CONSTRUCTION PROCEDURE FOR THE BISON PIPELINE PROJECT

### 6.1 Construction Schedule

Bison anticipates receiving approval to commence construction and to begin earth moving activities in June 2010. Bison will use multiple field construction crews and targets to complete all work required to accommodate an in-service date of November 2010. Bison plans to use three construction spreads to build the Project, as further detailed in the Project Construction Schedule attached in **Appendix H**. The approximate spread allocation is as follows:

- Spread 1-2 – MP -0.49 to MP 92.91
- Spread 3 – MP 92.91 to MP 182.61; and
- Spread 4 – MP 182.61 to MP 301.4

The schedule in **Appendix H** has been designed to accommodate the constraints of species- and regional-specific environmental timing restrictions and in response to local regulatory agency knowledge and concerns. During the pipeline installation, from clearing through final grading, construction at any given point along the route will normally last between eight and fourteen weeks and typically average twelve weeks.

As detailed in the full construction schedule, the length of time during which the construction trench will remain open may vary from two to five weeks, with the exception of waterbody crossings that will be completed according to Bison's Procedures (**Appendix E**). Bison will consult regularly with the BLM and will notify BLM and/or the FERC/BLM Compliance Monitor(s) as to when construction will begin on BLM lands.

### 6.2 Construction Work Force

Construction of the pipeline is planned to begin in June 2010. Staging for the Project will start in late April 2010 and is projected to end in December 2010. At peak construction, approximately 1,750 workers will be required for construction of the Project pipeline and related facilities. These workers will be distributed over three construction spreads and a crew for construction of the compressor station. Additional inspection/construction management personnel will be required during pipeline and facility construction, including at least one Environmental Inspector (EI) and one Agricultural Inspector (AI) per spread. It is anticipated that archaeological and/or tribal monitors may also be required in specific areas of the Project by federal, state, or tribal agencies. Although construction is set to begin in June 2010, Project personnel will begin to arrive earlier as preparation for construction begins. Likewise, although the pipeline is expected to be in service in November 2010, post-construction activities will take place until December 2010. Final clean-up and restoration activities likely will carry over into summer 2011.

### 6.3 Pipeline Construction

Construction of the proposed pipeline facilities will incorporate conventional overland construction techniques for large diameter pipelines. The construction of the proposed pipeline will follow a set of sequential operations unique to the pipeline industry, including marking or staking of the Construction ROW, fencing, clearing, topsoil stripping, grading, stringing, trenching, bending, welding, weld Non-Destructive Testing (NDT), weld coating, lowering-in, backfilling, hydrostatic testing, and cleanup and restoration. These operations are described in detail below. Areas that typically require special construction techniques include the following:

- agricultural areas with irrigated crops or drain tiles;
- crossings, including road, railroad, or foreign lines (utilities);
- waterbodies and wetlands;
- unusual topographies, such as steep slopes, unstable soils and unstable trench conditions; and

- areas requiring blasting and rock removal.

Typical drawings for the Project are provided in **Appendix B**.

### 6.3.1 Pre-Construction Surveys

Several surveys are scheduled to be conducted prior to construction in 2010. On BLM lands, these surveys include identification and documentation of the presence of large woody debris in waterbodies (on all BLM and non-BLM lands) and the identification and documentation of the extent of riparian areas on BLM lands in Montana. In addition, species-specific wildlife surveys are proposed on certain BLM lands (see below and Section 7.8). Additional surveys to be completed on non-BLM lands include noxious weed surveys (local/county) for areas that were not previously surveyed in 2008 and 2009; wildlife surveys; and pre-disturbance civil surveys at all stream crossings (construction).

Bison will perform two sets of preconstruction surveys related to large woody debris in 2010, reclamation/restoration surveys and waterbody surveys. Large woody debris is defined as logs, stumps, and large branches with a minimum diameter of 3 inches and a length of 6 feet. Large woody debris can occur either on the surface or imbedded in the river bed or bank and can occur as log-jams within the river course. Beginning in late-April to early-May 2010, and prior to construction, a Bison representative (EI, reclamation specialist, or other inspector) will document the existing condition of all areas of particular reclamation/restoration concern (including waterbodies) to be crossed by the Project. During these reclamation/restoration surveys, the Bison representative will identify all waterbodies that have large woody debris present, and this list will be provided to FERC prior to construction. This information will satisfy a condition of the Final EIS. These data will have limited applicability, as the presence, position, and location of large woody debris could change significantly between the time of the reclamation/restoration surveys and the actual waterbody crossings.

Immediately prior to (within one week of) each waterbody crossing, Bison's EI will photodocument the condition of the waterbody's bed and bank. The EI will establish (and demarcate, if necessary) a set of reproducible vantage points so that pre- and post-construction photographs may be taken from the same location. This will allow for an easy comparison of the pre- and post-construction condition of the waterbody and location/orientation of large woody debris, where present. Where large woody debris is present within the ROW, Bison's EI will take detailed digital photographs of the debris and make notes about the imbeddedness of such debris. Where it is not possible to avoid large woody debris, the photographs and notes will be used as a reference to restore the large woody debris as closely as possible to its original position. Large woody debris will be removed from authorized disturbance areas within and adjacent to the waterbody bed and bank and will be stored temporarily in EWS associated with the waterbody crossing.

Riparian areas on BLM lands in Montana will be surveyed by Bison personnel, accompanied by BLM personnel, using a protocol agreed upon by Bison and BLM. The location and extent of each riparian area will be determined and demarcated in the field. These surveys are proposed to take place the week of April 19, 2010. Results from the surveys will be forwarded to BLM as an addendum to the POD. Once the extent of riparian areas has been identified, Bison will avoid and minimize impacts to these areas as much as practicable, in accordance with Bison's Plan, Bison's Procedures, and Bison's Reclamation Plan (**Appendices D, E and S**, respectively), as well as in accordance with buffer requirements provided in Section 6.3.12 of this POD. Riparian areas on BLM lands in Montana will be reseeded with a seed mix provided by the BLM Miles City FO, as discussed below in Section 8.4.

Wildlife surveys to be performed prior to construction include aerial raptor surveys, prairie dog town surveys, and surveys for migratory bird species, if required by the USFWS as part of the Migratory Bird Treaty Act (MTBA) agreement. Raptor and migratory bird surveys will be conducted in accordance with the survey methodology approved by the USFWS and BLM for the 2009 surveys. Results will be submitted to the BLM FOs on a weekly basis to expedite identification of buffer areas. Prairie dog town surveys will be conducted at towns that were not fully mapped in 2009 due to restricted access, or reroutes. A prairie dog survey report will be submitted to the BLM following surveys.

Results from surveys for wildlife, riparian areas, and large woody debris on BLM lands will be submitted as addenda to this POD. Dates and general comments of these addenda will be captured in the POD Revision Table at the front of this document.

### 6.3.2 Marking the ROW

Prior to initiation of construction activities, land survey crews will mark the boundaries of the Construction ROW and EWS with flags and/or stakes to show the approved work areas. The centerline for the proposed pipeline will be continuously and clearly marked, as will known crossings of underground facilities, all road and rail crossings and points of horizontal deflection. Before construction starts, "one-call" systems for the states involved will be contacted in order to have buried utilities identified and flagged. Trenching near these foreign utilities will begin only after completing the appropriate procedures in conjunction with the third party operator. Pipeline locators and other methods will be used to identify foreign pipeline crossings.

Boundaries of avoidance areas such as wetlands, riparian areas, heritage resource sites, and sensitive species habitat will be marked with appropriate fencing or flagging based on environmental, archaeological and paleontological surveys. Cultural avoidance sites will be flagged or fenced prior to construction. Flagging or fencing of the cultural sites will take place when the civil survey crew stakes the Construction ROW and EWS. Bison intends to commence construction in June 2010. Flagging will be removed once construction activities are complete and there is no further need for Project-related activities along the Construction ROW.

EIs will ensure that sensitive resources to be avoided during construction have been properly flagged or fenced prior to construction and activities. The EIs will also monitor these areas during the construction process. In some locations, specific areas may also be spot-checked or continuously monitored by heritage resource specialists or Tribal monitors. In the unlikely event that an avoidance site is impacted during construction, the EI will call on appropriate required expertise, including archaeologists and agency personnel, to determine the extent of the impact and required follow-up and/or mitigation.

### 6.3.3 Fencing, Clearing, Topsoil Stripping, and Grading

Bison's land representatives will coordinate with the landowners or lessees to ensure their land use needs or requirements are identified (e.g., fencing, the location of livestock, and livestock access to water locations). A fencing crew will cut and brace existing fences along the proposed route. Temporary gates will be installed to enable the subsequent construction activities to access the Construction ROW and to control livestock. Bracing will be completed in accordance with BLM specifications for fences on BLM-managed lands.

The Construction ROW will first be cleared of brush, trees, large roots, large rocks and stumps. Wherever practicable, micro-routing or a restricted Construction ROW will be used to minimize tree removal. There are no areas of merchantable timber along the Project. Should the BLM request some of the timber, it will be limbed, cut, and piled on the edge of the Construction ROW. The remaining timber and other large vegetative debris may be chipped, burned, or disposed of according to applicable regulations and the BLM. Burning, if used, will be conducted in accordance with state and local burn permits and regulations. Burning will be performed in a manner to minimize fire hazards and prevent heat damage to surrounding vegetation. Disposal of materials taken off-site will be done at commercial facilities or at other locations approved by the BLM. Over the majority of the Project, Bison is planning to use an 85-foot topsoil stripping area, where practical, over the Project route. Topsoil will be bladed (using dozers or graders) to one side of the Construction ROW (usually the spoil side). Please refer to Bison's Plan (**Appendix D**) and Bison's Reclamation Plan (**Appendix S**) for more details about the topsoiling procedures.

Bison proposes to establish a brush beating demonstration area in Carter County, Montana. Brush beating is a technique that is typically applied to areas of scrub-shrub vegetation, particularly sagebrush-dominated terrain, and is not appropriate for grasslands or croplands. It involves mechanically removing aboveground vegetation. Brush beating (also known as brush hogging) involves manipulation of the existing vegetation (either crushing it down by driving over it, or mechanically cutting it above the ground surface), scattering of

the vegetative debris over the brush beaten area, and leaving the topsoil in place, except where it is absolutely necessary that it be stripped off (e.g., over the trench). Based on an analysis of the soil limitations, vegetation and topography, Bison identified an area in which to evaluate the brush beating technique. This area is located in Carter County, Montana, between MP 136.16 and 137.33, and extends approximately 6,200 feet. This interval includes about 61% private land and 39% BLM land, is dominated by scrub-shrub vegetation, and is entirely located on LRP soils. This interval has no slopes greater than 5%, and is slightly over one mile in length. A relatively long adjacent interval, located on BLM lands, is very similar in slope, soils, and vegetation and should provide a good comparison between brush beating and Bison's proposed 85-foot topsoil stripping technique. Please refer to Bison's Reclamation Plan (**Appendix S**) for more details about the brush beating technique.

Typical drawings located in **Appendix B** depict the layout of the 120-foot Construction ROW for topsoil segregation. Actual depth of topsoil, not to exceed 12 inches, will typically be stripped and segregated. The actual topsoil depth will be determined during construction by the EI. Typically, this will be done over approximately 85 feet of the Construction ROW (except in the brush beating demonstration discussed above). In unsaturated wetlands, one foot of topsoil will be stripped directly over the ditch line and segregated except in areas where standing water is present or soils are saturated or frozen (**Appendix E**). Bison will utilize the double-ditching technique to separate the top one foot of stream bottom substrate from deeper soil layers over the trench line for all waterbodies crossed by the Project.

The Construction ROW will undergo some grading to create a safe working area, accommodate pipe-bending and allow for the safe operation and travel of construction equipment. In areas of rolling hills and on side slopes, grading may be required across the Construction ROW and EWS. Topsoil will be stored on EWS outside the graded area.

Permanent survey and reference monuments within the Construction ROW will be protected during construction. If a survey monument must be removed, it will be replaced after construction by qualified surveyors. In the event of damage or disturbance of a permanent survey or reference monument on BLM land, the EI will immediately report the incident, in writing, to the appropriate BLM representative. All removed or damaged survey and reference monuments will be restored in accordance with BLM requirements, and using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. Bison will record such survey in the appropriate county and send a copy to the BLM Authorized Officer (AO).

During grading operations, access along the Construction ROW will be improved and/or constructed (with culverts if necessary). Activities will also include the installation of temporary bridging or matting at flowing waterbodies and saturated wetlands, and as necessary at other waterbodies or topographic features, so as to provide access along the Construction ROW for the equipment needed to construct the pipeline. Access roads and proposed improvements to access roads are discussed below in Section 8.4.

#### 6.3.4 Pipe Stringing

Prior to construction, pipe will be moved into the Project area by rail or truck and placed in pipe storage yards or placed (strung) directly onto the Construction ROW. The pipe stringing operation involves transporting pipe sections (joints) into position along the Construction ROW. Trucks will travel along the Construction ROW and string the individual joints parallel to the centerline of the trench so they are easily accessible to construction personnel. The joints will be strung in preparation for bending and welding. Materials (e.g., wooden timbers) will be used to keep the pipe off the ground and prevent coating damage.

#### 6.3.5 Trenching

Bison will employ Best Management Practices (BMPs) described in Bison's Plan (**Appendix D**) to minimize erosion during trenching operations and construction activities. Backhoes and/or wheel ditching machines will be used to excavate the trench. Typically, the ditch will be wider in side-bends to accommodate the pipe; in wetlands and waterbodies due to unstable ditch walls; and at tie-in location crossings of roads, pipes, etc. as required by applicable regulations.

Trenching potentially presents a danger to big game that can become trapped in an open trench. To decrease this impact, Bison will commit to the filling of trenches in a timely manner and installation of soft plugs (areas where the trench is excavated and replaced with minimal compaction) to allow livestock and wildlife to safely cross the open trench. Soft plugs will be constructed with a ramp on each side to enable animals that fell into the trench an avenue of escape. To allow for safe passage, soft plugs will be constructed at 0.25-mile intervals where the trench is intersected by known livestock or wildlife trails, and where BLM requests crossings. The EIs will be responsible for locating these areas according to game usage at the time of construction.

#### 6.3.6 Bending, Welding, Coating, and Lowering-In

Pipe will be delivered to the construction area in straight sections where it will then be bent to conform to changes required for pipeline alignment and to conform to natural ground contours. Bending of the sections will be performed by track mounted hydraulic pipe-bending machines.

After the pipe has been bent, it will be aligned and welded. The joints will be welded together with assistance of line-up clamps. As each weld is completed, the pipe will be placed on supports adjacent to the trench. Each weld will be tested for acceptance using NDT methods such as x-ray, gamma ray or ultrasound and inspected by qualified inspectors under the direction of Bison's Construction Manager. All bending, welding, NDT and coating in the field will comply with 49 CFR Part 192, and the latest edition of American Petroleum Institute (API) Standard 1104.

All buried piping will be protected with an epoxy coating designed to protect the pipe from corrosion. Except for a small area at the end of the pipe joint, this coating will be applied as fusion bond epoxy at the coating mill before shipment to the site. After welding and weld quality testing have been completed, the welds will be coated with compatible materials. Before lowering-in, the pipe coating will be inspected for defects. Defects will be repaired prior to lowering-in following construction specifications. From loading at the coating mill through to the lowering-in and backfill, measures will be employed to protect the coating.

The proposed epoxy coating to be used is chemically inert and will be installed per manufacturer's procedures prior to backfilling. Materials used to join the pipe sections are also inert, when cured. Because of the inert nature of the coating and joint materials, no contamination to soil or groundwater is expected.

Side boom tractors will be used to lower the welded pipe string into the trench. If the bottom of the trench is rocky, the pipe may be lowered onto sandbags or support pillows. Alternative sources of padding for pipe in rocky soil might be sand, gravel, or screened soil excluding topsoil. In areas where the excavated trench material could damage the pipe, the pipe will be protected with a protective wrap of rock shield or a layer of screened soil. The pipe will be placed in the ditch so as to conform to the alignment of the ditch and to not damage the coating. Trench dewatering may be required in certain locations in order to prevent the pipe from floating, to check the bottom of the ditch condition in rocky areas, and also to perform certain limited activities in the trench.

#### 6.3.7 Depth of Cover

The pipeline will be buried to meet or exceed the DOT standards in 49 CFR Part 192.327. Except for aboveground piping facilities, such as MLVs, and meter stations, the pipeline will be buried with:

- A minimum of 48 inches of top cover where it crosses lands that have been plowed, including cultivated hay fields;
- A minimum of 36 inches of top cover where it crosses scrub/shrub and open space lands;
- A minimum of 60 inches of cover over the top of the pipeline where it crosses surface drains (not including road/bar ditch), diversions, grassed waterways, open ditches, and streams; and

- A minimum of 60 inches of cover below public roads and railroads and 24 inches below in consolidated rock. Several road crossing permits have site-specific top cover conditions.

Notwithstanding the above, in those areas where either 1) rock in its natural formation, or 2) a continuous strata of gravel exceeding 200 feet in length is encountered at the graded surface, the minimum depth of cover will be 24 inches.

Typically, the pipeline will be at a greater depth when crossing a foreign pipeline, depending upon the depth of the foreign line. At least 12 inches of clearance will be maintained when crossing other lines. Bison will patrol the Permanent ROW with reasonable frequency to detect areas of erosion of the top cover following installation of the pipeline.

#### 6.3.8 Backfilling

After lowering the pipe in the trench, the trench will be backfilled using a bulldozer, backhoe, auger-type backfilling machine, or other suitable equipment. Backfill usually consists of the material originally excavated from the trench. However, in some cases additional backfill from other sources may be required. Any excess excavated materials will be spread over the Construction ROW in an upland location or disposed in accordance with applicable regulations. In areas where topsoil has been segregated, the subsoil will be placed in the trench first and then the topsoil will be placed over the subsoil. Similarly, the upper one foot of segregated waterbody substrate will be replaced in all waterbodies crossed by the Project, after subsoil is placed into the trench, in accordance with Bison's double-ditching technique

Initially, the backfill will be slightly mounded, except in wetlands. A single track of a D6 or D7 dozer or the wheels of a 14G grader may be run over the ditch to consolidate the soil. Adjacent material will then be pushed over the ditch line leaving a slight tapered mound of up to 6 inches to compensate for settlement.

Bison does not anticipate a need for significant amounts of additional backfill material. In those rare instances where special backfill is needed (i.e., to pad and protect the installed pipe in areas of blasted rock), Bison would first use acceptable material that was removed from the ditch. If additional padding material is needed, it will be obtained from local commercial pits or taken from nearby borrow areas that have been previously cleared for cultural and biological resources.

Bison proposes to decompact subsoils on the working side of the trench along the entire Project route, except in locations where the subsoils were not disturbed by grading (i.e. the spoil storage areas and the brush beating demonstration area) and in areas of deep cut and fill. Under normal conditions, compaction of subsoils due to construction traffic is expected to be in the order of 8 to 10 inches. As such, the Contractor shall conduct decompaction to a depth up to 18 inches where practical to account for extraordinary conditions. In some cases, such as where deep cut or fill activities are conducted, decompaction may not be required. Bison's EIs will identify areas where decompaction is not necessary. Decompaction of subsoil is proposed to be completed before replacement of topsoil. If decompaction of the subsoil is not performed prior to replacement of topsoil, decompaction shall be accomplished through use of a subsoiling tool that will not mix subsoil and topsoil

On BLM lands in Wyoming, Bison has agreed to perform compaction testing to determine the depth of compaction. Testing will occur after all construction activities have been completed, and will comprise a comparison of the soil density on the ROW to the in situ soil density at an undisturbed location off the ROW, as measured empirically in the field. Actual testing methods and intervals are described in Bison's Reclamation Plan (**Appendix S**). On BLM lands in Wyoming, Bison will complete soil decompaction to a depth of at least 4 inches below the measured depth of compaction.

In order to minimize the possibility of subsurface water flow on slopes along the pipeline, trench breakers will be used, as detailed in Bison's Plan (**Appendix D**) and Bison's Reclamation Plan (**Appendix S**). In other areas like the banks of waterbodies and ditch crossings, the trench backfill will be consolidated. When the trench crosses waterbodies, wetlands, or groundwater, trench plugs will be used, as necessary, to minimize the flow of water from the intersected waterbody to and from the upland trench.

Temporary and permanent erosion control measures will also be installed as necessary along the Construction ROW to reduce surface erosion. These measures will be installed per requirements of Bison's Plan (**Appendix D**) and Reclamation Plan (**Appendix S**) and guidance from the BLM. Surface water may enter the trench during rain events. Ditch plugs will be left in place on steep slopes to divert water out of the ditch into slope breakers. The slope breakers will channel water off the Construction ROW into vegetated areas or areas protected with gravel/rock, geotextile fabric and/or silt fence to control erosion and sediment loads. Construction ROW typical drawings depicting these construction techniques are provided in **Appendix B**.

### 6.3.9 Hydrostatic Testing

Hydrostatic testing of all newly-constructed natural gas pipelines is required by 49 CFR Part 192. Bison has developed a specific testing plan that identifies the end points of each test section within each spread. Sufficient water will be withdrawn from an approved source to fill one or more test sections. Water from the same source may be pushed along the pipeline to test additional sections. Test water will be discharged back to the same watershed from which it was withdrawn. Discharge operations are planned to take place from August 2010 to November 2010. Specific discharge dates being dependent upon the construction schedule of the Project. There are currently no planned intake locations for hydrostatic test water on BLM land. Two discharge locations are proposed on BLM lands. Discharge #7 (3,109,181 gallons) at MP 127.14 in Carter County, Montana and Discharge #4 (6,451,770 gallons) at MP 178.18 in Bowman County, North Dakota. Please refer to Bison's Hydrostatic Test Plan in **Appendix I**.

Prior to construction, Bison will obtain water withdrawal and discharge permits that may be required by local regulatory agencies. The Contractor will be required to follow all permit requirements for withdrawal and discharge of test waters. Upon completion of hydrostatic testing, the hydrostatic test water will be sampled, tested, and treated or filtered, as necessary to reduce pollutant levels or remove suspended particles from the water, as required by applicable discharge permit requirements. If required, additional water quality testing will be conducted throughout discharge operations in accordance with permit conditions.

After satisfactory sampling test results are confirmed, the water will be returned to the same watershed [3<sup>rd</sup>-level Hydrologic Unit Code (HUC)] from which it was originally withdrawn. Hydrostatic test water will be discharged through an energy dissipater (e.g., welded steel baffling device) in vegetated upland areas within the existing Construction ROW (please refer to the Typical Drawings in Bison's Hydrostatic Test Plan in **Appendix I**). The rate of discharge flow will be controlled to prevent erosion. Additional practices, such as the use of plastic sheeting or other material to prevent scour, will be used, as necessary, to prevent erosion during dewatering, in accordance with Bison's Plan and Procedures.

If overland flow is likely to occur at the point of discharge (due to frozen soils, etc.), the pathway of the water will be armored. This armoring will be removed along with the energy dissipation structure after discharge is completed. Overland flow will be dissipated at upland discharge locations. The discharge operations will be monitored throughout to ensure compliance with Project permit requirements. Bison will notify a BLM representative (FERC/BLM compliance monitor, AO, or other local BLM representative) at least one week in advance of any hydrostatic test water discharge event on BLM lands.

Water will be discharged to an upland area in the same watershed as the water was taken and at a sufficient distance to prevent the overland transport of any aquatic nuisance species into a water feature. For these reasons, no treatment of hydrostatic test water for aquatic nuisance species is proposed.

### 6.3.10 Special Construction Techniques

**Rock** – Bison may encounter bedrock or consolidated rock, and blasting may be required. Based on previous experience with other projects in the area, approximately 2 percent or less of the route is expected to require blasting due to subsurface rock. Approximately 0.35 miles of the Project's proposed route have been identified by visual observation as potentially requiring blasting (from approximate MP 72.45 to 72.80). When rock is encountered during construction of the Project, the technique used for removal will depend on

the quantity and hardness of the rock. Attempts will be made to use mechanical rippers or other mechanical means, such as conventional excavation with a track-mounted excavator or hammering with a jackhammer attached to an excavator, followed by excavation to remove rock encountered in the trench. As a contingency, Bison has developed a blasting plan that provides for blasting to be conducted according to guidelines designed to control energy propagation and protect persons and property in the area. Additional information on blasting is provided in Bison's Blasting Plan in **Appendix J**. The Construction ROW will be restored to pre-existing conditions to the extent practical. During cleanup and restoration activities, surface conditions will be restored to match existing non-disturbed areas (rock will not be windrowed).

Rugged Terrain – To the extent practical, the Project was routed to avoid wide or deep gullies and steep slopes. However, avoidance of all such areas was not possible, so the Project area includes some limited areas of moderate to severe slopes with rocky outcrops and side slopes with erodible soils, both of which will present difficult construction conditions. These types of terrain will be crossed using conventional open cut construction with overbends and sag bends to conform generally to land contours. Sloped areas will be recontoured to blend in with adjacent terrain, and reinforced with locally available materials. Slope breakers, ditch breakers, sand bags, geotextile fabrics, and silt fence will be used for stabilization, as described in Bison's Plan. Side slope grading techniques will require EWS in these locations to provide adequate spoil storage and construction equipment travel space. Rugged terrain on BLM land is discussed in Section 7.2.

During discussions with BLM, a number of areas were identified as "problem areas." These areas are typified by steep slopes/sideslopes and/or shallow bedrock/scoria, and represent difficult areas to stabilize and restore. In a few locations, problem areas were identified around local landscape features or areas of slope failure. Stabilization measures to be applied to particularly steep areas will be determined in the field at the discretion of the EI and FERC/BLM compliance monitors, and may include restoring the slope to a stable angle by localized regrading, and redirecting surface water flows above the feature, in addition to the standard measures listed in Bison's Plan. Please refer to Section 7.2 for additional discussion of these specific areas.

Agricultural Areas – Construction will be conducted in accordance with Bison's Plan in **Appendix D**. Agricultural areas are not anticipated on BLM land.

Unstable Soils – Portions of the proposed route may consist of unstable soils resulting from non cohesive material, either wet or dry. Unstable soils, for the purposes of this discussion, refer to soils that present instabilities during construction and not to long-term instabilities that would affect the integrity of the installed pipeline.

The impacts of unstable soil conditions will be mitigated by incorporating the following specialized construction procedures:

- Consideration for unstable soil conditions in the route selection process in order to minimize exposure to known or suspected unstable areas;
- Providing sufficient EWS to accommodate wider-than-typical trench and borepit excavations and to preserve worker safety; and
- Accommodating specialized excavation and dewatering equipment and utilizing the appropriate pipeline weighting and anchoring systems.

Where considered necessary, techniques will be included in the construction documents on a site-specific basis.

Buoyancy Control – Weighting of the pipe utilizing concrete coating, set-on weights, screw-type anchors, plate-type anchors, or pipe sacks, will be used for buoyancy control.

Road Crossings – Paved roads and high-use gravel roads will be crossed as determined in consultation with local regulatory authorities. Minor or rarely traveled gravel or dirt roads typically will be open cut, with the

approval of the appropriate agency. There are no railroad crossings on BLM land. A typical drawing for a horizontal bore is provided in **Appendix B**.

Pipe for these crossings will have a thicker wall and the bored crossing will also be coated with a special high abrasion resistant coating. If a horizontal bore is impractical or fails due to geotechnical conditions, a special application to the appropriate authority will be made to open cut (trench) the road crossing. A typical drawing for an open cut road crossing is provided in **Appendix B**. Road traffic may need to be temporarily routed around the road crossing as per permit requirements while the pipe is being installed by this method as per permit requirements.

During boring operations, the road will remain open to traffic. It will be necessary to excavate a site on one side of the road large enough to handle the boring equipment and a receiving pit on the opposite side of the road.

Where roads are open cut (trenched), barricades, lights, or warning signs will be in place. To minimize the time travel is restricted; roads will not be open cut until the pipeline is ready to be laid in the trench. Excavation depth will be determined by factors such as terrain, length of crossing and road crossing permit requirements. After backfilling, the roadbed will be compacted and restored in accordance with permit requirements.

The impact upon traffic and transportation facilities and public inconvenience at road crossings will be minimized to the extent practicable. Safety procedures which meet federal, state and local requirements will be implemented to protect workers and the public. Traffic warning signs, detour signs and other traffic control devices will be used as required by federal, state, and local DOT and other regulating bodies. All road crossings will be completed in accordance with the requirements of road crossing permits. Refer to Bison's Transportation and Traffic Plan (**Appendix R**) for additional information.

#### 6.3.11 Wetland Construction

Wetland construction on the Project will be conducted in accordance with Bison's Procedures, and where applicable, Bison's Plan. Bison has attempted to locate the route to minimize impacts to wetlands to the extent practical. Only those wetlands that could not be avoided will be impacted. Bison has minimized impacts to unavoidable wetlands by reducing the Construction ROW to 75 feet and locating all EWS a minimum of 50 feet from the edge of all wetlands.

The construction procedures used to cross unsaturated wetlands will be similar to those used in upland areas. In unsaturated wetlands, one foot of topsoil will be stripped directly over the ditch line and segregated except in areas where standing water is present or soils are saturated or frozen. If the trench contains water, temporary trench plugs will be left in the trench at its entrance to the wetland to minimize sediment discharges into the wetland from the open adjacent trench and to maintain the hydrologic integrity of the wetland. Silt fences and/or straw bales will be installed at edges of the Construction ROW in wetlands where there is a possibility for sediment to move into undisturbed areas of the wetlands. Excess backfill will be spread over previously disturbed upland areas and stabilized during cleanup. Original topographic conditions and contours will be restored, as near as practical, after completion of construction.

The methods of pipeline construction and the required EWS adjacent to wetlands will depend upon the soil stability and the existing condition of the wetland. In general, where soils are saturated, stable temporary work surfaces in the wetlands may be constructed. The use of timber mats is a possible method of stabilization. Typically, EWS are located a minimum of 50 feet from the edge of designated wetlands. If a wetland is located adjacent to a waterbody and has a width that would interfere with the waterbody crossing, additional EWS for the crossing may be requested and placed in the wetland if approved. Within wetlands, vegetation will be cut to ground level, and grading and stump removal will be performed only over the trench, except where safety conditions dictate additional stump removal on the working side of the Construction ROW.

Three possible crossing methods are available for crossing wetlands on BLM lands. A fourth possible crossing method (WL-CM-3: push-pull method) may be used in certain locations that are on non-BLM lands, and is not discussed in this POD. The crossing method used will depend on wetland characteristics and will be one of the following for each wetland:

Wetland Crossing Method 1, WL-CM-1: This method will be used in wetlands dry at the time of the crossing, where soils are stable enough to support equipment without sinking (e.g., mineral hydric soils), or in wetlands that have already been disturbed and can support equipment. A reduced Construction ROW width and upland construction techniques will be used. No matting will be used because soil conditions are relatively stable. A typical drawing of this method is provided in **Appendix B**.

Wetland Crossing Method 2, WL-CM-2: This method will be used in wetlands where the soils are too wet (e.g., permanently or semi-permanently saturated and/or histic epipedon) to support mainline construction equipment. A reduced Construction ROW width and timber mats will be used to minimize impacts. A typical drawing of this method is provided in **Appendix B**.

Wetland Crossing Method 4, WL-CM-4: Horizontal Directional Drill (HDD) methods may be used in specialized circumstances for crossing wetland areas such as wetlands associated with HDD waterbody crossings. This method is described below under the heading Waterbody Crossing Method 4 (WB-CM-4).

Wetland Restoration – Impacts from construction will be short-term and localized due to the nature of the Project (i.e., a linear underground utility). Construction techniques will be used to minimize workspace requirements, preserve the seed bank in areas where topsoil segregation will occur, preserve hydrologic integrity, and ensure germination (restore grades and avoid compaction), thus enhancing wetland recovery. Successful revegetation of wetlands is expected. Natural revegetation, in conjunction with exotic/nuisance weed monitoring and control, is the method of restoring wetlands in the Construction ROW approved by the USACE. Wetlands crossed by the Project will be restored in accordance with Bison's Procedures (**Appendix E**) and Bison's Wetland Restoration Plan (**Appendix U**). As requested by the Buffalo FO, impacted wetlands on BLM lands in Wyoming will be reseeded with the seed mix provided by the Buffalo FO, and included in Bison's Wetland Restoration Plan (**Appendix U**).

#### 6.3.12 Waterbody Crossing Construction

Bison has reviewed each waterbody that will be crossed by the Project to determine which crossing method is most appropriate for each location on a site-by-site basis. Bison also carefully reviewed crossings of riparian areas and sensitive waterbodies, which include those waterbodies identified through local agency consultation to be of regional importance. Waterbody construction on the Project will be conducted in accordance with Bison's Procedures (**Appendix E**). Additionally, Bison has prepared a Project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan (**Appendix K**). Bison will use appropriate BMPs, as addressed in its Procedures, to minimize the potential for impacts to waterbodies.

Perennial stream crossings were analyzed by a hydrologist/engineer to determine scour potential. Pipeline design includes burial depths such that scour will not reach the top of the pipe in a 100-year flood. Integrity of the pipeline will be enhanced by use of heavy wall pipe and additional protective coatings. If bedrock is encountered at some level above the required ditch bottom, the rock will need to be broken and removed in order to complete the ditch. Bison will ensure that stream crossings have minimum of five feet of cover; or two feet of cover in consolidated rock. Waterbodies that have a potential for significantly scouring were not identified on BLM land.

Typically, waterbody crossings will be perpendicular to the flow. Grading at approaches to waterbodies might be required to create a safe work surface and to allow the necessary area for pipe bending. This will be done only if absolutely necessary. Grading will be minimized, but will be completed to ensure safe working conditions and support the construction technique. If grading is required, all spoil from minor and intermediate waterbody crossings, and upland spoil from major waterbody crossings, will be placed in the Construction ROW at least 10 feet from the waterbody water's edge or in additional extra work areas with

appropriate controls to reduce the possibility of disturbed soils being transported into the waterbody by erosion or sedimentation. Large woody debris will be addressed as discussed above in Section 6.3.1.

At small waterbodies a backhoe, clam dredge, dragline, or other similar equipment might be used to excavate the trench. To permit safe equipment travel at the crossing, a 10-foot equipment travel path may be cleared in the buffer zone on either side of the waterbody prior to beginning the waterbody crossing. Where practical on waterbodies, material excavated from the trench will be stockpiled above the stream banks and used as backfill. The creek, stream, or river bottom will be returned as near as practical to its original contour. Containment structures for adjacent spoil storage typically will be silt fences and/or straw bales and will serve to minimize the potential for soil re-entering the waterbody.

The pipe will be welded together in the staging areas and then carried or floated in the ditch into position. Concrete weights or coatings on the pipeline might be required to provide negative buoyancy at stream crossings and in floodplains.

The proposed construction procedures have been established to ensure that potential impacts to all stream and river crossings are minimized. In order to limit the time required for construction of a stream crossing, the Construction ROW will be prepared on either side of the stream prior to the construction of the actual crossing. Typically, all in-stream construction activities at minor stream crossings (i.e., less than 10 feet wide) will be completed within 24 hours to 48 hours.

When crossing through wooded stream banks, care will be taken to preserve as many trees as possible. Wherever practicable, micro-routing or a restricted Construction ROW will be used to minimize tree removal. In addition, if a crossing location may be visible from a nearby thoroughfare, or if a waterbody has a high aesthetic value, mitigative measures, such screening, might be employed. No such waterbodies were identified on BLM lands.

Two possible crossing methods are available for crossing waterbodies on BLM lands as listed below. Two additional possible crossing methods (WB-CM-3: Modified Wet Crossing and WB-CM-4: HDD Crossing) may be used in certain locations that are on non-BLM lands, and are not discussed in this POD. Drawings illustrating construction layout/procedures associated with each of these methods are provided in **Appendix B**. Inherent in these methods is maintenance of water flow during waterbody crossings; no alterations to waterbody capacities are planned during or as a result of Project construction.

Waterbody Crossing Method 1 (“Wet Crossing”) WB-CM-1: This method will be applicable to small, dry perennial, ephemeral, or intermittent waterbodies, as well as field and roadside ditches. It will only be used when there is no water present at the time of crossing (the term “wet crossing” means Bison will utilize conventional (upland) trenching construction methods with adherence to the additional crossing measures provided in Section V.B.10 of Bison’s Procedures; no attempt will be made to isolate the stream bed where construction will occur). Where possible and the waterbody is small enough, equipment can work from the banks and minimize in-stream impacts. Typically, a backhoe will open the trench, the pipe will be carried in, and the trench will be backfilled. Trench plugs will be maintained on both sides of the crossing until immediately before the pipe is installed to isolate the upland trench from the waterbody. Once the pipe is installed, trench plugs will be restored and backfilling of the trench and bank restoration will follow. As a contingency, Bison will maintain pre-fabricated structures at each waterbody crossed using this method that will allow diversion of water across the excavation in the case of a freshet. A typical drawing of this method is provided in **Appendix B**.

Waterbody Crossing Method 2 (“Dry Crossing”) WB-CM-2: This method will be applicable to all waterbodies with perceptible flow at the time of crossing, with the exception of waterbodies to be crossed by HDD (see WB-CM-4 below). The expected stream flow at the time of crossing will be routed across or around the installation zone by either a dam and flume pipe, or a dam-and-pump arrangement. Depending on water flow, facilities will be planned and installed to adequately deal with site specific conditions. The trench will be excavated from under the flume pipe (or pump hoses), seepage into the trench will be pumped off to an environmentally acceptable upland area, the pipeline will be inserted into the trench, the trench will be

backfilled, and the flume pipe (or pump hoses) and dams will be removed to restore natural downstream flow. Typical drawings for flume and dam and pump construction methods are provided in **Appendix B**.

As indicated, the crossing method used will depend on waterbody characteristics at the time of construction. It is expected that many of the waterbody crossings will be dry (no perceptible flow, including inundated waterbodies with no perceptible flow) at the time of crossing. In these cases, where the preliminary specified waterbody crossing method is a “dry crossing” (WB-CM-2), a WB-CM-1 crossing method will be used as a contingency for these waterbodies, in accordance with Section V.B.10 of Bison’s Procedures.

**Equipment Bridges** - There are several different types of equipment bridges that may be used to provide construction equipment the means to travel across waterbodies. The bridge utilized at specific crossings will be independent of the type of crossing technique employed to install the pipe across the stream. Construction equipment will not be allowed to ford flowing waterbodies without the use of a bridge, unless specifically allowed by the stream crossing permit. The only crews that will be allowed to cross through waterbodies are the clearing and bridge installation crew (which would be allowed one pass through those waterbodies that are easily forded) and the pipe installation crew which carries the pipe into the waterbody for crossing types WB-CM-1 and WB-CM-2. All equipment or equipment components that come into contact with water will be cleaned as required by Bison’s Aquatic Nuisance Species Management Plan (**Appendix T**).

Bison intends to utilize a combination of bridging techniques on the Project.

1. **Span bridge:** This technique would involve the use of a timber construction mat (spans less than 20 feet wide) or rail car (spans less than 40 feet wide) and could be employed in conjunction with a number of pipeline crossing methods. An intermediate support (i.e. a pipe or other methods which would allow unimpeded flow) may be required for some spans. Minimal bank disruption is necessary to set the bridge into place, although some excavation may be necessary to “seat” the bridge within the upper reaches of the bank. This type of bridge would either require side rails or some method to prevent dirt/clods from entering the waterbody. The surface of the bridge would be covered with geotextile fabric and maintained to prevent the accumulation of dirt/sediment on its surface. Additional detail for these types of bridges is provided in **Appendix B**.
2. **Flume bridge:** Flume bridges can be used to cross relatively shallow waterbodies and are able to span short or long distances. The number of flumes installed will be dependent on stream flow and would be designed to carry more than the greatest stream flow expected during the period of installation. With this type of crossing, the flumes would be laid in the river bed, geotextile fabric installed and granular fill material or sandbags would be backfilled around the flume(s) to provide a travel surface for the construction equipment. The geotextile fabric would be used to maintain the interface between the onsite and fill materials. Additional detail for these types of bridges is provided in **Appendix B**. This type of bridge can be incorporated into a dry crossing method by using a longer flume and utilizing the equipment bridge in the overall design for the dry crossing.
3. **Site-specific bridge:** For wide or deep river crossings, an engineered bridge may be designed and permitted.
4. **Dry crossing bridge:** For shallow crossings that are dry at the time of construction, upland construction techniques would be used and no bridging would be installed. The banks would be graded down to the historic flowline of the stream for the full width of the Construction ROW. In some cases, a flume could be installed in order to minimize grading and to provide for a change in flow conditions. All grade and fill materials will be stored in the Construction ROW at least 10 feet from the waterbody’s edge or in EWS located at least 50 feet from the outer edge of the waterbody or associated wetland. Where possible, grade and fill materials will be stored out of riparian areas. As discussed in Section 6.3.1, riparian areas on BLM lands in Montana will be identified and demarcated prior to construction, and their management will be discussed with and approved by BLM prior to disturbance. If water becomes present in the channel, a flume bridge or matting would be installed, using a prefabricated flume retained at each waterbody crossing for this purpose.

The interface between the bridge and natural bank material will be covered with geotextile fabric. Earthwork will be minimized to that needed for temporary bridge installation. To allow access onto the bridge, ramp approaches may be constructed using earthen material gathered from the Construction ROW. Soil erosion and sediment control devices will be put into place during bridge installation to prevent spoil or silt-laden water from leaving the Project area or entering surface waters or drainage channels.

Bridges typically will be installed during clearing operations and will remain in place until the pipe has been installed and final clean-up and seeding have occurred. Once bridges are removed, all disturbed areas will be restored to pre-installation conditions. Re-installation of bridges will not be allowed without prior authorization.

Bison will establish a vegetated buffer zone around all waterbodies to be crossed by the Project. For waterbodies with no riparian strip, the vegetated buffer zone will begin at the top of the waterbody bank and will extend down-ROW 15 feet to the edge of the cleared Construction ROW. For waterbodies having a riparian strip, the buffer zone will begin at the top of the waterbody bank and include the riparian area, to a maximum of 50 feet from the waterbody's edge (dictated by and compatible with the 50-foot buffer for the EWS).

The only breach of the vegetative buffer prior to preparation for in-stream work (for those areas where buffers can be established) will be the establishment of a 10-foot working area across the buffer on each side of the waterbody that will be cleared to facilitate equipment travel at the crossing.

For "dry" waterbody crossings, the buffer zone will be graded to within 15 feet of the edge of water. Some grading closer to the water edge may be required to facilitate placement of the associated in-stream dams. These activities could begin up to three days before in-stream ditching and pipe installation begin, but in that case, the dams themselves will protect against local erosion. For crossings of waterbodies with no perceptible flow at the time of crossing, the buffer zone will be graded to within 15 feet of the edge of water immediately prior to the start of in-stream activities (typically the day before). Grading in the last 15-foot zone will occur on the day of the crossing.

The buffer area will only be graded within a narrowed 75-foot Construction ROW, where practicable, although the in-stream area (below the banks) may need to be affected slightly beyond the 75-foot narrowed workspace to install the materials necessary for a dam and flume or a dam and pump crossing. Additionally, in some instances topographic conditions may require additional workspace and additional grading may be performed up to the full 110-foot Construction ROW limit. However, additional clearing beyond the narrowed 75-foot Construction ROW will be minimized to the extent practicable.

The entire buffer area will be restored and maintained according to Bison's Plan, Bison's Procedures, and Bison's Reclamation Plan (**Appendices D, E and S**, respectively), depending on whether it is upland or wetland, respectively. As discussed below in Section 8.4, all riparian areas on BLM lands in Montana will be reseeded with a BLM-provided seed mix. Riparian areas in all other areas of the Project will be reseeded with an appropriate seed mix, as detailed in Bison's Reclamation Plan (**Appendix S**).

#### 6.4 Construction Inspection

Bison is committed to designing, building, and conducting its activities in ways that avoid or minimize impact on human health and the environment. Bison will ensure that all environmental conditions and requirements of the FERC Certificate and associated construction permits are incorporated in construction documents. It is the duty of all inspectors to monitor HSE aspects; however, Bison will assign qualified EIs to provide routine monitoring during construction, clean up, and restoration pursuant to Bison's Plan and Procedures (**Appendix D and Appendix E**) and Bison's Reclamation Plan (**Appendix S**).

Bison will develop a list of Project-specific environmental requirements based upon the terms and conditions of the FERC Certificate, Bison's Plan and Procedures, the terms and conditions of construction and other applicable permits, company policies and procedures, and other environmental requirements. These

environmental requirements will be incorporated into the construction contract documents, which will communicate the environmental requirements for the Project to the contractor. If, during construction, the contractor is in violation of an environmental construction requirement, as established above, the EI, under the authority of Bison, will require an immediate correction of the problem and, if necessary, issue a stop activity order, pending the resolution of any issue with the contractor.

Before any construction begins, Bison will conduct environmental training for the EIs to familiarize them with the specific conditions and issues associated with the Project. Separate training of the construction management teams and contractor personnel will also be undertaken to familiarize all personnel with the environmental requirements of the Project.

EIs will typically attend the daily spread meetings of the construction management team. The EIs will report, as appropriate, to Project personnel at the daily meetings on all environmental related activities of the construction contractor. Project personnel will maintain contact with the EI team at appropriate levels throughout the Project.

Bison will be responsible for the selection, training, employment, and guidance of the personnel on the EI team. The duties of the EIs are to monitor and report on the activities designated in Bison's Plan and Procedures and also those included in the construction contracts, such as: erosion control, revegetation, wetland and riparian signage, environmental permit compliance, threatened and endangered species protection, and fencing at environmentally sensitive sites.

Project personnel will review daily reports generated by the EIs. Any agency notifications required by permit conditions will be made by the Project personnel or the Lead EIs. The Lead EIs will complete field reports for submittal to agencies. Project personnel will review all agency notifications prior to submittal.

Bison will also fund third party Environmental Monitors that will work for the FERC and BLM (where applicable) and be present on-site to monitor compliance and address Project changes as they occur during construction of the Project.

#### 6.5 Fueling

On BLM land, fuels used during construction would be stored in upland areas at least 500 feet from wetlands, waterbodies, municipal watershed areas, and the edge of riparian areas. Contaminants from construction equipment, welding, and refueling could enter flows, pools, and sediments at waterbody crossings. To minimize the occurrence of such impacts, Bison has developed a SPCC Plan in accordance with state and federal permit requirements prior to construction. The draft SPCC Plan is provided in **Appendix K**. The SPCC plan will be updated with Project-specific information prior to construction, and a final copy will be provided to BLM.

#### 6.6 Noxious and Invasive Weed Control

Bison has conducted noxious weed surveys along the entire Construction ROW. Surveys identified those species currently listed as undesirable invasive species by federal, state, and local officials. Known weed populations, discovered and recorded during the 2008 and 2009 environmental studies will be pre-treated prior to construction to minimize the potential to spread. The pesticide applicator will be BLM-certified and will operate under an approved Pesticide Use Plan. Bison prepared a Noxious and Invasive Weed Control Plan (**Appendix L**), which will be followed during construction and during the site restoration and environmental monitoring period. The Noxious and Invasive Weed Control Plan includes BLM procedures on pesticide application. By September 15 of each year, Bison will submit Pesticide Applications Records with accompanying maps to each BLM Field Office.

#### 6.7 Wildfire Control

Bison is committed to preventing fires and ensuring that accidental fires/wildfires that occur are appropriately addressed. Specialized and sufficient equipment for fire prevention and control will be

maintained with each construction spread, and fire notification procedures will be provided to all contractors. Measures which will be implemented for fire prevention and suppression are described in detail in Bison's Wildfire Management Plan in **Appendix M**.

#### 6.8 **Unanticipated Discoveries of Cultural and Paleontological Resource Sites**

For instances of the discovery of unanticipated cultural and paleontological resources during construction, the appropriate specialist and/or state agency personnel will be contacted in accordance with the plans for protection of known and unanticipated discoveries of cultural and paleontological resources provided in **Appendices N** and **O**, respectively. Additional discussion of heritage resources related to the Project is provided below in Sections 7.4 and 7.9.

#### 6.9 **Areas Requiring Blasting**

The Blasting Plan, which Bison will implement in areas requiring blasting, is provided in **Appendix J**. Additional detail concerning areas that might require blasting is provided in Section 6.3.10.

#### 6.10 **Dust Control**

Dust suppression techniques may be used in construction zones near residential and commercial areas to mitigate the impacts of fugitive dust emissions in sensitive areas. In addition, local ordinances on open burning will be followed. Dust and smoke impacts will be temporary; therefore, impacts to local or regional air quality is expected to be minor.

Mitigating measures for dust control available for the construction activities may include:

- Proper maintenance of construction equipment;
- Covering open-bodied trucks while transporting materials likely to produce airborne dusts;
- Watering of the construction sites (or use of other biodegradable tackifier), including access roads for fugitive dust control, if necessary; and
- Minimizing soil disturbance to areas necessary for construction.

Where required by county or local authorities, fugitive dust permit applications/control plans will be submitted to the appropriate authority prior to land disturbance activities, which may further serve to mitigate construction emissions via site-specific fugitive dust permit conditions. Measures for dust control are provided in the Fugitive Dust Plan in **Appendix P**. These measures will be implemented at the discretion of the EI.

#### 6.11 **Waste Disposal**

All waste generated during construction will be properly disposed in accordance with local, state, and federal regulations. For vegetation disposal, at the request of the BLM, sagebrush will be mowed as close as possible to the ground surface, and the resulting sage cuttings will be stockpiled with the segregated topsoil and spread out with the topsoil during reclamation activities. Sagebrush may also be burned, chipped, or removed from the ROW for disposal. Mowing the sagebrush reduces the potential safety (tripping) hazard and fire hazard associated with other methods that do not result in complete, above-ground removal of sagebrush.

#### 6.12 **Hazardous Waste and Materials**

Contaminated soils or other, undocumented hazardous materials could be encountered during construction of the proposed Project. If such materials, as defined in applicable federal, state, and local regulations and guidelines, are encountered during the Project, Bison will implement the Plan for Unanticipated Discovery of Hazardous Materials (**Appendix Q**).

Hazardous materials used by the contractor must be approved by Bison prior to their use. Hazardous materials will be used in limited quantities in the construction areas. Bulk storage of hazardous materials will be located in the contractor yards. Oil and oil-based products (diesel fuel, kerosene, etc.) will be stored in accordance with the Bison SPCC Plan (**Appendix K**), and a minimum of 500 feet from wetlands, waterbodies, municipal watershed areas, and the edge of riparian areas on BLM lands.

### 6.13 Traffic Management

Bison developed a Traffic and Transportation Management Plan to outline and supplement measures required of the Project to mitigate for equipment access to and from the Construction ROW during construction. This plan addresses traffic concerns that may affect local communities and their associated roads and highways, as discussed above in Section 6.3.10 – Road Crossings. The Traffic and Transportation Management Plan is provided in **Appendix R**.

### 6.14 Contingency Planning

An Emergency Response Plan will be developed prior to construction once contractors are selected for the work. The Emergency Response Plan will include all applicable emergency contact information, event reporting, and response procedures and will be included in Bison's SPCC Plan (**Appendix K**).

## 7.0 RESOURCE VALUES AND ENVIRONMENTAL CONCERNS

### 7.1 Air and Noise Resources

Air quality impacts from the Project will be associated primarily with construction activities and the subsequent operation of the Hettinger Compressor Station. Construction and operational impacts on air quality are defined by magnitude and duration. Air quality may be impacted temporarily by dust from construction activity. The amount and duration will depend on the conditions of the construction area and the current weather conditions. Measures for dust control are provided in the Fugitive Dust Plan in **Appendix P**. Areas crossed by the Project (i.e., the pipeline) will not experience long-term adverse impacts on air quality. Pipeline-related construction emissions will be temporary, and there will be no emissions related to the operation of the pipeline, other than at the Hettinger Compressor Station.

Noise associated with conventional pipeline construction typically will occur only during daylight hours. One exception is the HDD process, which, once started, is run continuously until complete. Based on construction noise analyses conducted for other proposed pipeline projects, noise levels of 60 dBA or above could extend perpendicularly from the centerline of the pipeline up to 12,000 feet from the source. These levels could occur sporadically over the construction period, and the zone of impact will be limited to the local area of construction activities as the construction chain moves along the Construction ROW. The terrain along the pipeline route is diverse, and occasionally the route will pass through areas where the terrain enhances the noise levels during construction. Because of the short duration of construction (approximately six to seven months), anticipated daylight-only construction period, and generally rural alignment of the Construction ROW, noise levels should not be overly disruptive to other activities in the vicinity. There will be no noise-related impacts associated with the operation of the pipeline, other than at the Hettinger Compressor Station.

### 7.2 Geologic Hazards

Geologic hazards for the Project have been evaluated by reviewing various resources, including aerial photographs, topographic maps, United States Geological Survey (USGS) online database resources, and state geological survey documents. The majority of the Project components are located within areas of level or gently sloping or rolling terrain (less than 8 percent slopes) with low to moderate landslide susceptibility. Within the areas of high susceptibility (approximately 67 miles for the Project), specific locations may be encountered that are prone to landslides (e.g., steep slopes, loose soils).

During the period of February 2-4, 2010, site-specific reconnaissance and investigations of ten previously identified areas of high susceptibility to landslide along the proposed Project route, listed in Table 3.1.1-7 of the Final EIS, were completed. Based on detailed information collected during the investigations, four of the ten features were determined to not represent landslide features and therefore will not require landslide mitigation measures. For the remaining features and three additional features identified during the 2010 reconnaissance, site-specific mitigation plans were prepared. Three of these locations are located on BLM land. These locations are at approximate MPs 19.7-19.9, 96.6, and 131.6. Stabilization measures to be applied to these areas will be determined in the field at the discretion of the EI and Agency monitors and may include restoring the slope to a stable angle by localized regrading and redirecting surface water flows above the feature, in addition to the standard measures listed in Bison's Plan. The full report that summarizes the site geology, site reconnaissance observations, and mitigation plans for each area is provided in **Appendix V**. Bison has agreed to implement all of the necessary landslide mitigation recommendations that were provided in the report. Should additional high-susceptibility landslide conditions be identified during completion of pre-construction civil surveys, Bison will prepare sufficient plans or measures to address the identified conditions.

Finally, the Project area is not located within an area of active volcanism. It traverses areas that exhibit little to no seismic activity, and it is not located in known karst areas or in areas of known subsidence activity.

### 7.3 Mineral and Energy Resources

The USGS manages databases to identify mineral operations and coal fields within each state. According to the USGS National Atlas of the United States, there are no active mineral operations facilities within 0.25 mile of the Construction ROW; however, the atlas does not include coalbed natural gas well information. Currently, there are no BLM-managed active claim lands or future leases that have been identified as being impacted by the Project.

To minimize impacts to existing mineral resource production in the Project area, Bison has previously re-routed the pipeline around known and expected future leases identified from approximate MP 0 to MP 75 and MP 95 to MP 102.

The USGS Digital Data Series 69U (DDS-69U) currently provides coalbed methane (natural gas) well information as of 2003. According to DDS-69U, there are 115 coalbed methane well permits within 0.25 miles of the Construction ROW. Of these permits, there are 27 producing gas wells, 15 shut-in wells, 5 dormant wells, 1 abandoned well, 4 spudded wells, 26 permits to drill, 34 expired permits, and 3 undefined permits. None of these permits are located within the Construction ROW.

### 7.4 Paleontological Resources

The route of the Project crosses areas of Quaternary, Tertiary, and Cretaceous-aged deposits in the three contiguous states the Project crosses. A qualified and BLM-permitted paleontologist has conducted desktop research for the purpose of identifying geologic formations with the potential to contain sensitive paleontological resources and their locations along the Project route on federal and state lands. The paleontologist has prepared a detailed mitigation plan based on the results of the desktop research, and the detailed mitigation plan delineates areas that should be subject to a field survey under BLM and state guidelines. Surveys have also been conducted within these defined areas.

The results of the desktop survey, in combination with the results of the field survey, have been used to determine geologic units or geographic areas in Wyoming, Montana, and North Dakota that should be monitored during ditching activities (continuous monitoring versus spot-checking). In addition, the study has identified areas where both surface and subsurface paleontological clearance, without the need for monitoring, is recommended. The paleontological technical assessment report, including the Project-specific mitigation and unanticipated discoveries plan is included in **Appendix O**.

Paleontological resource protection measures have been developed to minimize the impacts to sensitive paleontological resources during construction. The paleontological sensitivity of each geologic unit within the Bison Study Corridor was evaluated using the Potential Fossil Yield Classification (PFYC) system, which was recently approved as policy by the BLM. Some areas in North Dakota were identified by the North Dakota Geological Survey to have extremely high sensitivity, and their PFYC ranking was upgraded accordingly. The State of North Dakota does not have other specific requirements regarding the performance of paleontological field surveys. The States of Wyoming and Montana do not specifically require field surveys. All three states require the protection of fossils found on state-owned lands. A table providing mapped geological units within the Project areas, including BLM lands, and their sensitivity using the PFYC system is provided in **Appendix O**. If additional paleontological resource surveys or monitoring are required, appropriate measures and monitoring plans will be prepared prior to construction.

### 7.5 Soil

Construction of the Project will result in short-term impacts to the soils along the Construction ROW. Potential impacts may include, but are not limited to, soil erosion on steep slopes by water, soil erosion by wind, mixing of topsoil and subsoil, soil compaction and rutting from construction equipment, blasting due to bedrock encountered at a shallow depth if conducted, and poor revegetation. Soils that are classified as having low reclamation potential (LRP) are of particular concern. Soils with LRP factors are discussed below in Section 8.0 and in Bison's Reclamation Plan (**Appendix S**). Impacts to soils in upland areas along the ROW will be mitigated using procedures outlined in Bison's Plan (**Appendix D**) and the Storm Water Pollution Prevention Plans (SWPPPs) for the Project. Bison plans to use slope breaker spacings provided in Bison's Reclamation Plan (**Appendix S**) in all areas during construction.

Impacts to soils in wetlands or along waterbodies on the ROW will be mitigated using methods outlined in Bison's Procedures (**Appendix E**) and Wetland Restoration Plan (**Appendix U**). Stabilization and restoration for the Project following construction are discussed in Section 8.0.

Bison will implement procedures to minimize impacts to soils, especially active cropland and range/pasture land soils. Topsoil will be stripped from the working side, the trench, and a portion of the spoil storage area (a width of approximately 85 feet of the Construction ROW), except in a brush beating demonstration area. The topsoil and subsoil will be stockpiled separately in a manner that minimizes mixing. In backfilling the trench, the stockpiled subsoil material will be placed back into the trench first. Segregated topsoil will not be used for padding the pipe. Bison's Plan, following standard FERC guidance, calls for stripping the actual depth of topsoil, not to exceed 12 inches, and storing the topsoil separately on the Construction ROW. To minimize erosion of the stored topsoil by wind, Bison may stabilize it using some combination of light compaction, water spray, or a biodegradable tackifier.

Bison will ensure that appropriate control measures (e.g., silt fences or straw bales) will be used to prevent soil and sediments from these stockpiles from entering waterbodies and roadways during construction. If the excavated materials are insufficient in quantity or otherwise unsuitable to meet backfill requirements, Bison will ensure that the stockpiled topsoil will not be used for backfill. In the unlikely event that imported soil materials are needed for backfilling, they will be of similar composition to the existing soils at the level to be backfilled, except when sand is needed to replace rock removed from the trench. The imported materials will be sourced from commercial suppliers or areas previously surveyed for biological and cultural resources as part of the Project.

### 7.6 Water

Construction and restoration activities located within or adjacent to an identified waterbody will be in accordance with Bison's Procedures (**Appendix E**). In addition, Bison will obtain the appropriate permits and approvals associated with stream and waterbody crossings and will adhere to all specific federal and state permit conditions associated with waterbody crossings.

Subsequent to construction, restoration of waterbodies will involve, at a minimum, restoring the stream to pre-construction contours to the maximum extent practical and revegetation of the stream banks in

accordance with Bison's Procedures (**Appendix E**). If, during the permitting process, additional measures for restoration are determined to be required, Bison will include these measures in its Implementation Plan that will be provided prior to construction.

### **Surface Water Runoff and Infiltration**

During construction, Bison expects that surface water may enter the trench as a result of rain events and groundwater flow. Trench breakers will be put in place on steep slopes to divert water out of the ditch and into slope breakers. The Project does not generally contain areas that are sufficiently vegetated to withstand erosive velocity of surface water run-off. Therefore, slope breakers will channel water off the Construction ROW and into vegetated areas at the discretion of the EI or into areas protected with gravel/rock, geotextile fabric, and/or silt fence in order to control erosion and sediment loads.

Bison will implement Bison's Plan and Procedures (**Appendices D and E**, respectively) to reduce the velocity of water run-off from the construction area and to promote nearby infiltration, with a goal of no net loss of infiltration within each impacted watershed. SWPPPs addressing storm water runoff and pollution prevention have been obtained from the respective agencies. Temporary and permanent erosion control measures will be implemented in accordance with Bison's Plan (**Appendix D**), Bison's Reclamation Plan (**Appendix S**), and guidance from the BLM.

### **Stream Bank Erosion**

During construction, clearing and grading of vegetative cover could increase erosion along stream banks, particularly in areas used for travel by construction equipment. Equipment bridges, mats, and pads will be used to minimize the potential for these impacts. Bison will also implement provisions contained in Bison's Plan and Bison's Procedures for protection against stream bank erosion (e.g., limit clearing, grading, and the size of work areas next to waterbodies to the greatest extent possible – please refer to Section 6.3.12). Pre-disturbance civil surveys will be completed at all stream crossings in order to record pre-construction conditions on a site-specific basis. Upon completion of construction, Bison will restore the stream banks to approximate pre-disturbance conditions, as practical, and will protect stream banks in order to prevent erosion and washouts and associated turbidity and sedimentation. In some areas, imported rock riprap may be added. Stream banks and riparian areas will be revegetated using approved seed mixes provided in Bison's Reclamation Plan (**Appendix S**) or the BLM along the Project route. Riparian areas on BLM lands in Wyoming and North Dakota that are currently grass-forb dominated will be sown with an appropriate grass-forb mix. Those that are scrub-shrub will be seeded with an appropriate grass-forb-shrub mix. Riparian areas on BLM lands in Montana will be sown with the appropriate seed mix provided by the BLM Miles City Field Office. Where already present, large woody debris located along waterbodies on BLM lands in Montana, will be replaced on the stream banks to approximate pre-construction conditions (refer to Section 6.3.12).

### **Turbidity and Sedimentation**

Turbidity and sedimentation could occur as a result of in-stream construction activities, trench dewatering, and/or storm water runoff. In slow moving waters, increases in suspended sediments could increase the biological oxygen demand and reduce levels of dissolved oxygen in localized areas during construction. Suspended sediments also could temporarily alter the chemical and physical characteristics of the water column. Any turbidity and sedimentation that may occur as a result of Project activities will be composed solely of on-site materials; no foreign sediments will be introduced.

To minimize sedimentation during pipeline construction across each minor or intermediate waterbody, as specified in Bison's Plan and Bison's Procedures, trench spoil will be placed at least 10 feet from the highest elevation of the water's edge. Silt fences and/or straw bales (weed-free) will be placed around the spoil piles to prevent spoil from flowing into the waterbody. The location of spoil storage and mitigation control measures for spoil also will be addressed in Bison's Procedures.

All material from the trench in waterbodies will be segregated from upland soils during excavation. Once the pipe is placed in the trench, the excavated material will be replaced immediately, the stream banks and streambed will be restored to their pre-construction contours, and all construction waste will be moved off-site. To further limit turbidity and sedimentation, Bison's Procedures specify that EWS will be established at a minimum distance of 50 feet from waterbodies. Where possible, Bison will attempt to minimize impacts to riparian areas. There are no EWS areas located within 50 feet of a waterbody or wetland.

### 7.7 Aquatic Nuisance Species

Based on consultation with the respective state agencies, Bison prepared an Aquatic Nuisance Species Management Plan (**Appendix T**) that provides cleaning measures to be applied to equipment or equipment components that come into contact with media that may transport these species. The Aquatic Nuisance Species Management Plan provides state-specific mitigation measures to minimize or limit the spread of invasive aquatic species. Bison will follow the procedures specified in its Aquatic Nuisance Species Management Plan when crossing waterbodies on BLM lands.

### 7.8 Vegetation

Construction and operation activities within the Project footprint will affect vegetation communities in several different ways, including compaction of soils by construction equipment; trampling/crushing of herbaceous plants; removal of herbaceous and woody plant cover; removal of root stock, and alteration of the overall plant community.

The vegetation impacts associated with the Project area can be classified as short-term temporary, long-term temporary, or permanent disturbances. Short-term temporary impacts will be associated primarily with the Construction ROW, EWS, and yards, where impacts will last for the duration of construction activities until the subsequent completion of successful reclamation. The short-term temporary disturbance areas will provide forage and habitat for wildlife within three years following successful reclamation. The long-term temporary disturbance areas will be associated primarily with the Construction ROW, in areas more difficult to restore or that involve slower growing vegetation. These areas may take more than three years after successful reclamation to provide forage and habitat for wildlife. The length of recovery time will depend on the existing soil conditions, sensitivity of the plant communities, the timing and extent of the disturbance precipitation in the years following construction, and the geographic and topographic locations.

Long-term vegetation impacts associated with operational and maintenance activities typically occur primarily within the forested wetland and upland forested vegetation types within the Permanent ROW. In upland areas, the removal of trees will be minimized during construction by micro-routing. Bison evaluated a variety of potential routes for the pipeline. The selected route balances many criteria, including overall length, effect on the environment, land-use compatibility, engineering constraints, economic efficiencies, and access to markets. Approximately 0.6 acre of upland forest will be crossed by the Project on BLM lands. Removal of trees will be considered an incremental long-term reduction of vegetation types for wildlife resources. No forested wetlands are crossed by the Project on BLM lands.

Bison has agreed to limit vegetative maintenance along the right-of-way to only that required for compliance with agency obligations. Except in an emergency, Bison will not perform any maintenance, including mowing, without notifying FERC of its intent and also making a reasonable attempt to provide the owner/tenant with prior notice. If and when areas need to be mowed or trees need to be cut for these surveys, FERC will be notified before such mowing or tree cutting takes place.

Permanent vegetation loss as a result of facility construction includes crops (compressor station), scrub-shrub, and open space (meter stations, launchers and receivers, mainline valves). Other impacts on vegetation can include species composition changes or cover reductions, which could lead to reduced productivity. These impacts would add to the mosaic of vegetative patchiness and create opportunities for early successional sere to reclaim openings in dominant plant communities. These patches will be reseeded to reduce the chance of noxious weed introduction. Eventually, these patches will stabilize in a

higher successional state, but wildlife and livestock may experience a reduction in habitat productivity until the area is fully reclaimed. Special habitat vegetation along the Project route is discussed in Section 7.8.

### 7.9 Fish and Wildlife of Concern

Biological resource protection measures have been developed to minimize impacts to biological resources during construction. These measures include consultation with the USFWS, BLM, Wyoming Game and Fish Department (WGFD), Montana Fish, Wildlife, and Parks Department (MTFWP), and North Dakota Game and Fish Department (NDGF) to avoid disturbance to raptors and other species. Surveys that have been conducted prior to construction include a helicopter survey of nesting raptors; avian nest searches along the proposed ROW; burrowing owl surveys of prairie dog "towns"; and an invasive plant survey of the ROW. Surveys will be done in the season before construction begins in areas that were not previously surveyed or areas that require additional survey (Section 6.3.1). Measures which Bison will implement to protect fish and wildlife species of special concern have been developed in consultation with the agencies listed above. Species-specific surveys were proposed through correspondence with the BLM and state wildlife agencies and have been conducted in the spring and summer of 2009. Bison currently is finalizing a Conservation Plan that will address Bison's responsibilities under the MBTA. It will include management of the ROW in high quality habitat before the migratory bird season in order to avoid impacts to nesting migratory birds by making the ROW unattractive for nesting. This plan is being developed with the input of the USFWS, and the final version will be provided to BLM for review prior to construction, along with other species-specific consultation information.

#### Fisheries

As specified in Bison's Procedures (**Appendix E**), for streams containing designated fisheries, all in-stream work will be performed between June 1 and September 30 for cold water streams and between June 1 and November 30 for cool water and warm water streams, unless the timing restriction is waived. Bison intends to comply with all waterbody crossing windows assigned in state permits, in lieu of the FERC-designated generic crossing windows.

#### Wildlife

General construction-related impacts to big game, small game, and non-game species will be related to temporary habitat disturbance and human activity (primarily trash and noise) in the Project area. Noise impacts, specifically, will be localized and temporary. Noise likely will result in the temporary displacement of or stress to animals in areas adjacent to construction. Human activity impacts will temporarily stress wildlife and could cause movement of some wildlife away from the Project area. Stress on wildlife could affect general health, reproduction, and viability of young, depending on the sensitivity of a particular species, season of the year, and other factors. These impacts will be temporary, however, since construction activity will occur in a given area for only a few weeks, at most, and habitat recovery will occur by adherence to Bison's Plan (**Appendix D**) and Procedures (**Appendix E**), as well as Bison's Reclamation Plan (**Appendix S**). The acreage of upland forest trees that will be cleared for the Project is relatively small, approximately 0.6 acre on BLM lands. All the Construction ROW, except a portion of the Permanent ROW, will be allowed to return to pre-construction conditions.

Blasting will occur in limited areas and is anticipated for less than two percent of the Project (all on non-BLM land). The primary impacts to wildlife will be noise generated for a limited time and dust thrown off by the explosion. Noise impacts will be limited by their temporary nature and short duration, resulting in limited stress on any wildlife in the area. Dust abatement, as well as noise mitigation and fly rock prevention, are discussed in Bison's Blasting Plan (**Appendix K**).

An important component of any development and its impact to wildlife is habitat fragmentation. Habitat fragmentation occurs as larger areas of habitat are reduced and separated by development and can alter or disrupt migration, reduce available habitat, and otherwise render habitat unsuitable for foraging or reproduction. Habitat fragmentation is especially problematic for species that require large tracts of unfragmented habitat, such as the sage grouse. Habitat fragmentation can also present areas where

noxious and invasive weeds can invade. To minimize the impacts of habitat fragmentation, Bison has maximized the portion of the Project that is located adjacent to existing disturbance. To minimize impact to sage grouse, Bison is utilizing a 0.6-mile no occupancy buffer around sage grouse leks rather than the smaller 0.25 mile buffer required by the BLM. This larger buffer will prevent direct impacts to sage grouse leks and protect larger areas of habitat around the lek for nesting and brood rearing. Bison will restore the Construction ROW using construction methods outlined in Bison's Plan and Reclamation Plan (**Appendix D** and **Appendix S**, respectively) to preexisting conditions to the extent practical upon completion of construction, which will serve to minimize habitat fragmentation.

### **Riparian and Sage Brush Habitat**

As part of a larger arid landscape, riparian habitats provide shelter and sustenance for a large array of wildlife, including big game mammals, birds, and amphibians. They also provide predators with increased prey availability and movement corridors. Bison recognizes the importance of riparian habitats to the ecosystem as a whole and has planned the Project to cross as few riparian habitats as possible. In addition, in areas where impacts are unavoidable, Bison will neck down the Construction ROW, utilize appropriate crossing methods, and schedule construction to minimize impacts to wetlands and waterbodies. Where possible, Bison will minimize impacts to riparian areas. Potential impacts include removal of vegetation and limited direct mortality of less mobile amphibians, reptiles, or small mammals. Bison's Plan (**Appendix D**) describes applicable mitigation measures. Bison will avoid placing aboveground facilities within riparian habitats to avoid permanent impacts to these sensitive areas. Bison will also place all extra workspace 50 feet from the outer edge of waterbodies or associated wetlands.

Sagebrush provides habitat to a wide range of species, including sagebrush obligates like greater-sage grouse, sage thrashers, and pygmy rabbit, but also provides important forage for big game and non-game animals. Sagebrush conservation is important for the management of many species. Important sites in sagebrush, such as grouse leks and crucial winter ranges, are already protected by timing stipulations to avoid direct impacts to these species. To protect sagebrush habitat, Bison's Plan includes reseeding and restoration measures to mitigate for a temporary loss of habitat. Additionally, the utilization of 0.6-mile no occupancy buffers around sage grouse leks will protect areas of sage brush around the leks from disturbance. Aboveground facilities, such as compressor stations, will be placed in areas of existing disturbance as much as practicable, but small amounts of sagebrush habitat may be lost as a result. This will create new edge habitat opportunities for species that are adaptable, but has the potential to further fragment habitat. The majority of aboveground facilities, however, are centered upon the Permanent ROW or situated along an existing ROW to minimize habitat fragmentation.

It is anticipated that there will be minimal disturbance to species that utilize existing sagebrush and riparian habitats throughout the Project area. The disruption of these habitats is anticipated to have little or no impact on big game species, due to their temporary nature and limited extent. However, for some smaller species, the displacement of certain species and the removal of sagebrush and riparian habitats within the construction area may temporarily create local competition for space and increase the presence of predatory species, thus increasing local stress among some species. However, once construction has passed and the disturbed areas have been restored, new habitat will be available to be re-colonized by remaining populations. Fossorial species such as prairie dogs will also benefit as the loosening of soil in the Permanent ROW creates preferred habitat. Overall, the impact on sagebrush and riparian habitats is expected to be minimal as a result of construction.

### **Threatened & Endangered Species**

During clearing and grading activities, larger and more mobile wildlife, such as mammals, birds, reptiles, and some amphibians, will be able to avoid the construction area. Impacts will be short-term displacement and some temporary reduction in habitat. Certain individuals with limited mobility, such as small mammals, amphibians, and reptiles, may not survive, but other members of the population are expected to re-colonize the area after construction. Local wildlife populations in the construction corridor and other temporary disturbance areas, including big game species, upland game birds, and some passerines, are expected to avoid the Project area for a short time following construction, but will subsequently re-inhabit the area.

Construction during the spring may impact breeding individuals in or adjacent to the Project area, from either direct loss of the animals or indirect displacement from increased noise and human presence. Impacted species would be expected to re-inhabit the area in subsequent years.

**Table 7-1** describes species with BLM-sensitive and state-designated species and their habitats that have potential to be located in the Project area. Field survey crews have been instructed to identify and delineate possible habitat and any species observations. Species-specific surveys have been conducted in accordance with BLM approved protocols.

<b>Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project</b>						
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Counties</b>	<b>Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b,c,d</sup></b>	<b>Vegetation Type</b>
<b>Birds<sup>c</sup></b>						
Greater sage-grouse	<i>Centrocercus urophasianus</i>	WY, MT, ND	Campbell, Carter, Fallon, Powder River, Bowman, Grant, Hettinger, Morton, Stark, Slope	FP; BLM-SS; NSS2; MT-S2; ND-II	This species uses a wide variety of sagebrush mosaic habitats, including tall, low and a mixture of sagebrush types. Riparian and upland meadows, irrigated and non-irrigated croplands and pasturelands are also used.	Scrub-Shrub
Piping plover	<i>Charadrius melodus</i>	ND	Morton	FT; ND-II	This species inhabits open sandy areas and saline flats with little vegetation along rivers, lakes, ponds, and marshlands. It nests on sandbars and sand and gravel beaches with short, sparse vegetation along inland lakes, on natural and dredge islands in rivers, on gravel pits along rivers, and on salt-encrusted bare areas on interior alkali ponds and lakes. Sparse clumps of grass or herbaceous vegetation are important habitat components. The nesting season is April 15 to September 15.	Open Water
Interior least tern	<i>Sterna antillarum athalassos</i>	ND	Morton	FE; ND-II	Nesting habitat consists of sparsely vegetated sandy, gravelly, and silty beaches and sandbars within wide, unobstructed river channels or salt flats along lake shorelines and irrigation reservoirs. Nest locations are generally away from the water's edge since nesting typically begins while river flows are high and relatively small amounts of sandy habitat is exposed.	Open Water
Mountain plover	<i>Charadrius montanus</i>	WY, ND	Campbell, Carter, Fallon, Powder River	FP; BLM-SS; NSS4; MT-S2	Migratory bird that breeds from April 1 to July 31. Breeds in heavily grazed prairie, preferentially in prairie dog colonies. The Mountain plover has recently been proposed for listing by the USFWS.	Open Space
Whooping crane	<i>Grus americana</i>	ND	Bowman, Grant, Hettinger, Morton, Stark, Slope	FE; MT-S1; ND-III	During migration, this species feeds and roosts in a variety of habitats including croplands, large and small freshwater marshes, the margins of lakes and reservoirs, and submerged sandbars in rivers. Spring and Fall migration through the Project regions generally occurs from April 15 through May 15 and September 15 through October 30, respectively.	Emergent Wetland, Open Water
<b>Fish</b>						
Sauger	<i>Sander canadensis</i>	MT	Powder River, Carter, Fallon	BLM-SS MT-S2	Inhabits sand and gravel runs, sandy and muddy pools and backwaters, of small to large rivers; less often in lakes and impoundments.	Open Water, Perennial, Intermittent

Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project						
Common Name	Scientific Name	State	Counties	Designations <sup>a</sup>	Habitat / Impact <sup>b,c,d</sup>	Vegetation Type
Pallid sturgeon	<i>Scaphirhynchus albus</i>	ND	Morton	FE; ND-II	This species is distributed from the headwaters of the Missouri River (Fort Benton-Great Falls, MT) through the Mississippi River to New Orleans, Louisiana. It inhabits bottom areas of large turbid rivers that have strong current and a firm sandy substrate. They also may be found along sandbars and behind wing dikes.	Open Water
<b>Mammals</b>						
Town-send's big-eared bat	<i>Corynorhinus townsendii</i>	WY, MT, ND	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS2; MT-S2	This species utilizes caves and abandoned mines for maternity roosts and hibernacula. Roost sites are associated with Douglas-fir and lodgepole pine forests, ponderosa pine woodlands, Utah juniper-sagebrush scrub, and cottonwood bottomland.	Upland Forest, Forested Wetland
Fringed myotis	<i>Myotis thysanodes</i>	WY	Campbell	BLM-SS; NSS2	Primarily at middle elevations of 1,200-2,150 m in desert, grassland, and woodland habitats. Roosts in caves, mines, rock crevices, buildings, and other protected sites. Nursery colonies occur in caves, mines, and sometimes buildings. Known to be active April-September. During winter, hibernation may be periodically interrupted.	Upland Forest, Forested Wetland, Scrub Shrub
Long-eared myotis	<i>Myotis evotis</i>	WY	Campbell	BLM-SS; NSS2	Primarily inhabits coniferous woodland and forests while foraging over ponds, rivers and streams contained within.	Upland Forest
Meadow jumping mouse	<i>Zapus hudsonius</i>	MT	Carter, Fallon, Powder River	BLM-SS; MT-S2	In Montana, have been found in dense, tall and lush grass and forbs in marshy areas (sometimes with standing water), riparian areas, woody draws, and grassy upland slopes, although is primarily restricted to riparian sites.	Emergent Wetland, Intermittent and Perennial Streams
Merriam's shrew	<i>Sorex merriami</i>	MT	Carter, Fallon, Powder River	BLM-SS; MT-S3	Merriam's shrews in Montana have been captured mostly in arid sagebrush-grassland habitats, but also in non-native grasses and forbs, such as timothy and sweet clover.	Open Space
Spotted bat	<i>Euderma maculatum</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; MT-S2; NSS2	This species utilizes a wide range of habitats but is most often found in rough, rocky, semi-arid, and arid terrain, varying from ponderosa pine forest to scrub country and open desert. This species roosts in high cliffs and forages over open forests and fields in ponderosa pine forests.	Upland Forest
White-tailed prairie dog	<i>Cynomys leucurus</i>	WY	Campbell	FP; BLM-SS; NSS4; MT-S1	Prairie dog towns are found on flat, open grasslands and shrub/grasslands with low, relatively sparse vegetation. White tailed prairie dogs are typically found between 5,000 and 10,000 ft in elevation.	Open Space, Scrub Shrub

<b>Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project</b>						
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Counties</b>	<b>Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b,c,d</sup></b>	<b>Vegetation Type</b>
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	WY, MT, ND	Campbell, Carter, Fallon, Powder River, Bowman, Grant, Hettinger, Morton, Stark, Slope	FP; BLM-SS; NSS3; MT-S3, ND-I	Prairie dog towns are found on flat, open grasslands and shrub/grasslands with low, relatively sparse vegetation. Black-tailed prairie dogs are easily separated from the similar white-tailed prairie dogs by the black color of the distal one-third of the tail tip. This species inhabits lower elevation shortgrass prairies of the great plains.	Open Space, Scrub Shrub
Black-footed ferret	<i>Mustela nigripes</i>	WY, MT, ND	Campbell, Carter,	FE; MT-S1; ND-II; NSS1	Suitable habitat consists of prairie dog colonies or complexes (79 acres or greater) with towns no further than three miles apart to sustain a viable population of 120 ferrets.	Open Space, Scrub Shrub
Gray wolf	<i>Canis lupis</i>	ND	Bowman, Grant, Hettinger, Morton, Stark, Slope	FE; ND-III	This species can inhabit a variety of habitats but prefers wild areas with few roads. It is a migratory/territorial animal with packs that consist of one or more family groups (generally 2-8 members, up to 21) with dominance hierarchy. Primary prey include ungulates but will hunt livestock.	All
Swift fox	<i>Vulpes velox</i>	WY, MT, ND		BLM-SS; MT-S3; ND-II	This species is found in short-, mid-, and mixed grass prairies with gently rolling hills. Den sites are typically located on flat areas or along slopes or ridges that provide a good view. Dens are typically on sites dominated by blue grama or buffalo grass.	Open Space
<b>Amphibians</b>						
Plains spadefoot	<i>Spea bombifrons</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S3; ND-I	This species is usually found in areas with soft sandy/gravelly soils near permanent or temporary bodies of water. For much of each year it lives largely inactively in burrows of its own construction or occupies rodent burrows, and enters water only to breed.	Open Water, Ephemeral streams, Open Space
Great plains toad	<i>Bufo cognatus</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S2	Utilizes grasslands, sandhills and agricultural areas below 6,000 feet in elevation. Breeds only after rain storms in spring and summer when the temperature exceeds 12 C. Breeding sites are restricted to relatively clear shallow water, which include wallows, flooded fields, and the edges of extensive temporary pools.	Open Water, Ephemeral streams, Open Space
Northern leopard frog	<i>Rana pipens</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S1	This species is found in low elevation and valley bottom ponds, spillway ponds, beaver ponds, stock reservoirs, lakes, creeks, pools in intermittent streams, warm water springs, potholes, and marshes. Eggs are laid in April.	Open Water, Ephemeral Intermittent and Perennial streams

<b>Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project</b>						
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Counties</b>	<b>Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b,c,d</sup></b>	<b>Vegetation Type</b>
<b>Reptiles</b>						
Greater Short-Horned Lizard	<i>Phrynosoma hernandesi</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S3; ND-II	Typically found in open areas along limestone outcrops, canyon bottoms or within sparse sagebrush.	Open Space, Scrub Shrub
Milksnake	<i>Lampropeltis triangulum</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS2; MT-S2	Milk snakes have been reported in areas of open sagebrush-grassland habitat and ponderosa pine savannah with sandy soils most often in or near areas of rocky outcrops and hillsides or badland scarps, sometimes within city limits.	Upland Forest, Scrub Shrub, Developed, Open Space
Spiny softshell	<i>Apalone spinifera</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S3	This is primarily a riverine species, occupying large rivers and river impoundments, but also occurs in lakes, ponds along rivers, pools along intermittent streams, bayous, irrigation canals, and oxbows. It usually is found in areas with open sandy or mud banks, a soft bottom, and submerged brush and other debris.	Open Water, Perennial Streams
Snapping turtle	<i>Chelydra serpentina</i>	WY, MT	Campbell, Carter, Fallon, Powder River	BLM-SS; NSS4; MT-S3; ND-II	This species occurs in backwaters along major rivers, at smaller reservoirs, and in smaller streams and creeks with permanent flowing water and sandy or muddy bottoms.	Open Water, Perennial Streams
Western hog-nosed snake	<i>Heterodon nasicus</i>	MT	Carter, Fallon, Powder River	BLM-SS; MT-S2; ND-I	This species has been found in areas of sagebrush-grassland habitat and near pine savannah in grassland underlain by sandy soil.	Scrub-Shrub, Open Space
<b>Plants</b>						
Lead plant	<i>Amorpha canescens</i>	WT, MT	Campbell, Carter	BLM-SS; NSS4; MT-SH	Lead plant is a shrub with few to several, erect or ascending, simple or sparingly branched stems, which are 3-8 dm high. It is found in dry well-drained prairies throughout the great plains. Its flowering period is from May through July.	Open Space
Porter's sagebrush	<i>Artemisia porteri</i>	WY	Campbell	BLM-SS; NSS2	Occurs in sparsely vegetated badlands in semi-barren low shrub communities on ash, tuffaceous or clay substrates.	Open Space
Narrowleaf milkweed	<i>Asclepias stemphylla</i>	MT	Carter	BLM-SS; MT-S1	Sandy soils of prairies and open pine woodland. Common associated species include <i>Stipa comata</i> , <i>Carex filifolia</i> , <i>Pinus ponderosa</i> , and <i>Schizachyrium scoparium</i> .	Open Space, Upland Forest

Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project						
Common Name	Scientific Name	State	Counties	Designations <sup>a</sup>	Habitat / Impact <sup>b,c,d</sup>	Vegetation Type
Barr's milkvetch	<i>Astragalus barrii</i>	MT	Carter, Powder River	BLM-SS; MT-S3	In southeastern Montana, is restricted to heavy clay knobs, buttes, and barren hilltops. Populations of this plant are associated with the harsh edaphic and environmental conditions of badlands areas, buttes, bluffs, clay hills or sandstone, open barren ground.	Open Space
William's wafer parsnip	<i>Cymopterus williamsii</i>	WY	Campbell	BLM-SS; NSS3	A tufted perennial herb that occurs on open, south or east facing ridgetops and upper slopes with exposed limestone outcrops or talus from 6000-8300 feet.	Open Space
Schweinitz's flatsedge	<i>Cyperus schweinitzii</i>	MT	Carter, Powder River	BLM-SS; MT-S2	Sparsely-vegetated, sandy-soiled, prairie grasslands on ridges and slopes often near sandstone outcrops or on sandy blowouts. Commonly associated species include <i>Oryzopsis hymenoides</i> , <i>Stipa comata</i> , <i>Andropogon scoparius</i> , <i>Tradescantia occidentalis</i> , <i>Pinus ponderosa</i> and <i>Yucca glauca</i> .	Open Space, Upland Forest
Visher's buckwheat	<i>Eriogonum visherii</i>	MT	Carter	BLM-SS; MT-S1	It is most often found on the unvegetated clay outwash at the base of slopes, on the unvegetated eroding edge of tables, benches, terraces, and buttes, and on more level patches of soil exposed by wind or water erosion on barren, sedimentary rock outcrops, the alluvium from those outcrops, and small exposures of soil substrates in badlands topography.	Open Space
Narrow-leaf penstemon	<i>Penstemon angustifolius</i>	MT	Carter, Fallon	BLM-SS; MT-S1	This species grows in sandy-soiled, prairie grasslands on hills and slopes. Plants are often most abundant on sandy blowouts and other sparsely-vegetated areas. Common associated species include <i>Andropogon scoparius</i> , <i>Bouteloua gracilis</i> , <i>Carex filifolia</i> , <i>Stipa comata</i> , <i>Calamovilfa longifolia</i> , <i>Tradescantia occidentalis</i> , <i>Artemisia campestris</i> , <i>Artemisia frigida</i> , <i>Heterotheca villosa</i> , <i>Helianthus rigidus</i> and <i>Yucca glauca</i> .	Open Space
Blowout penstemon	<i>Penstemon haydenii</i>	WY	Campbell	FE; NSS1	This species is an invader of sand dune blowouts and requires early to mid-successional sere to compete. Can be crowded out by later successional species. Commonly associated as in the same habitat as <i>Psoralea lanceolata</i> , <i>Andropogon hallii</i> , <i>Artemisia campestris</i> , <i>Asclepias arenari</i> and others. Flowers alternate years mid may to late June	Open Space
Plains phlox	<i>Phlox andicola</i>	MT	Carter, Powder River	BLM-SS; MT-S2	This species grows in sandy soils in grasslands and ponderosa pine woodland, often associated with sparsely vegetated erosional blowouts and loose sand below sandstone outcrops. Dominants in this habitat include <i>Stipa comata</i> , <i>Bouteloua gracilis</i> , <i>Agropyron smithii</i> , and <i>Carex heliophila</i> .	Open Space, Upland Forest
Double bladder-pod	<i>Physaria brassicoides</i>	MT	Carter	BLM-SS; MT-S2	Occurs on sparsely vegetated, steep, eroding, south-facing slopes of highly dissected breaklands and badlands	Open Space

<b>Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project</b>						
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Counties</b>	<b>Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b,c,d</sup></b>	<b>Vegetation Type</b>
Bur oak	<i>Quercus macrocarpa</i>	MT	Carter	BLM-SS; MT-S1	Known to occur on one site in Carter County, MT but is relatively dominant there. It is close to the Thompson Creek tributary of the Little Missouri River in the riparian forest and also on bentonitic shale ridges trending WNW to ESE and extending into WY.	Upland Forest
Ute-ladies'-tresses	<i>Spiranthes diluvialis</i>	WY	Campbell	FT; NSS1	This species is a perennial orchid that grows in riparian edges, oxbow lakes and moist to wet meadows as well as spring seeps and flood plains. Typically grows in open areas but has been found in high quality woodlands. Flowers July-August.	Perennial Wetland, Perennial Stream

<sup>a</sup> FT – USFWS Threatened  
 FE - USFWS Endangered  
 FC – USFWS Candidate  
 FP – USFWS Petitioned  
 BLM-SS – BLM Sensitive Species  
 NSS1 – Wyoming, populations greatly restricted or declining, extirpation possible or ongoing significant loss of habitat  
 NSS2 – Wyoming populations declining or restricted in numbers or distribution, extirpation not imminent; ongoing significant loss of habitat.  
 NSS3 – Wyoming populations declining or restricted in numbers or distribution, extirpation not imminent; habitat restricted or vulnerable but no recent or ongoing significant loss; species likely sensitive to human disturbance.  
 NSS4 – Wyoming populations declining or restricted in numbers or distribution, extirpation not imminent; habitat not restricted, vulnerable but no loss; species not sensitive to human disturbance.  
 MT-S1 – At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state  
 MT-S2 - At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state  
 MT-S3 - Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas  
 MT-S4 - Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern  
 MT-S5 - Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.  
 MT-SH - Possibly Extinct or Extirpated - Species is known only from historical records, but may nevertheless still be extant; additional surveys are needed  
 ND-I – North Dakota Species in greatest need of conservation  
 ND-II – North Dakota Species in need of conservation, but that have had support from other wildlife programs  
 ND-III – North Dakota Species in moderate need of conservation, but that are on the edge of their range in North Dakota

<sup>b</sup> Some species with special survey requirements or other impact mitigation will be discussed in Section 7.8.  
<sup>c</sup> Habitat descriptions are provided by the Montana Field Guide and NatureServe.org

<b>Table 7-1 - Potential Federal and State-listed Sensitive Species that may Occur in the Vicinity of the Project</b>						
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Counties</b>	<b>Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b,c,d</sup></b>	<b>Vegetation Type</b>
<sup>d</sup> Migratory bird species are covered in Section 7.8 for the Migratory Bird Treaty Act Sources: Aggregate of lists provided by the USFWS, BLM FOs, WYGF, WY Natural Diversity Database, MTFWP, and NDGF						

## Listed Aquatic Species

Direct impacts of WB-CM-1 and WB-CM-2 construction techniques to biological aquatic resources at stream crossings could include increased sedimentation, potentially resulting in harm or alteration of biologically suitable habitat and the alteration of in stream flow. Bison's Procedures (**Appendix E**) provide stringent erosion control measures that are expected to minimize sedimentation. These impacts are therefore expected to be temporary and will not likely reduce fish populations.

Other construction activities, such as hydrostatic testing and equipment fueling, is not expected to affect special status and special concern species, if present. All surface water withdrawals will be in accordance with permits and Bison's Hydrostatic Test Plan (**Appendix I**). Equipment fueling is restricted to a minimum of 500 feet from wetlands and waterbodies. No hydrostatic test water withdrawals are currently planned on BLM land. Any hydrostatic test water withdrawals made from waterbodies located upstream from BLM lands will be made in accordance with Bison's Hydrostatic Test Plan (**Appendix I**), which requires maintaining adequate flow rates in the waterbody (no more than a ten percent reduction in flow rate), in order to protect aquatic life and provide for downstream uses in compliance with regulatory and permit requirements. In the event that primary test water sources do not contain adequate flow rates to support the hydrostatic test water withdrawal without affecting downstream uses and resources, alternative water sources will be used. Hydrostatic test water discharges on BLM lands will be accomplished as described in Section 6.3.9.

Operation and maintenance activities will not affect special status or special concern fish species. In addition, the Project will not impact the Pallid Sturgeon, because the Project is outside of the known range of the species, according to the USFWS Director for Pallid Sturgeon.

## Listed Terrestrial Species

### *Mammals*

Along the Project route, impacts were evaluated for federally listed mammal species that may occur in the Project area. Impacts to the gray wolf are not expected, based on correspondence with the USFWS and because no suitable habitat was observed during surveys. The Project is not located in an area where wolf packs are located or are likely to form and thus is in a non-essential area for management of the species. Individual wolves in the area will be transient and will avoid the Project area during construction. Species-specific surveys are not proposed for this species.

Impacts to meadow jumping mouse will be similar to those for other small mammals and non-game species. These impacts will be mitigated by necking down in wetland areas and perennial streams, which are areas of potential habitat for this species.

Impacts to bat species will be related to the removal of roost trees in riparian drainages. Bat impacts can also result from disturbing rocky outcrops with small caves or day roosts bats may inhabit, as well as disturbing ground foliage and litter in forested areas. Impacts would be minimal and temporary, because bats would move to other areas away from the Project. To reduce impacts by damage to rocky outcrops, Bison has avoided steep areas with this habitat to the extent possible. Acoustic surveys for bats were conducted in June and July, 2009. Thompson's big-eared bat was observed at one of the survey sites on non-BLM land, along with several other bat species. To mitigate for potential impacts to this species, Bison will reduce the ROW width, microroute around as many trees as practicable, and restore the stream and riparian area according to Bison's Plan (**Appendix D**), Procedures (**Appendix E**), and Reclamation Plan (**Appendix S**). The Acoustic Bat Survey Report was filed on October 1, 2009.

Surveys were conducted in prairie dog towns in April and May of 2009 in order to survey for prairie dog town obligate species, as well as assess the activity, quality, and extent of prairie dog towns impacted by the Project. Prairie dog towns that were not able to be surveyed in 2009 will be surveyed before construction in the spring of 2010. As mitigation for potential impacts to black-tailed prairie dog towns crossed by the route, Bison will reduce the Construction ROW in these areas. Direct impacts to the prairie dog could include the

direct loss of individuals, which could be crushed or otherwise taken by construction activities, vehicles, and equipment. However, it is not anticipated that construction activities will permanently alter prairie dog towns that will be crossed by the Project, and installation of the pipeline will not restrict the colonization of the Construction ROW by prairie dogs. Although it is likely that some prairie dogs will be lost from the population, no significant population-level effects are anticipated, based on plans to minimize the extent of Construction ROW through active colonies, the temporary nature of the Project, and the reproductive potential of this species.

A prairie dog town obligate species, the black-footed ferret also has the potential to be located along the Project route. Wild populations of black-footed ferrets are not known to exist outside of the reintroduced populations in the western U.S. Consequently, the probability of black-footed ferrets occupying an active prairie dog colony within the Project area is extremely low. In Wyoming, only prairie dog towns in areas that have not been block-cleared for surveys by the USFWS need to have additional ferret surveys. In Wyoming, the Project is located entirely in areas that have been block-cleared. Also, based on areas open to survey in 2009, the prairie dog towns that would be impacted by the Project were either too small to be considered for black-footed ferret surveys or were located in block-cleared areas. The need for additional surveys in Montana and North Dakota will be determined in consultation with the BLM and USFWS, if the spring 2010 field surveys discover prairie dog towns of appropriate size. If the spring 2010 surveys reveal qualified prairie dog towns, additional surveys will be conducted in those locations in accordance with USFWS recommendations, and impacts to these areas will be minimized.

Impacts to the swift fox will be the same for those listed for small game species. Surveys for swift fox dens took place in open space habitat in Montana and Wyoming in the spring of 2009. All BLM lands in Wyoming and identified potential habitat along the Project in Montana were surveyed in accordance with approved survey protocols. No active dens were located, although an inactive den was located in Wyoming on BLM land that is no longer impacted by the Project. The swift fox survey report has been provided to the BLM.

### ***Reptiles and Amphibians***

Impacts to listed species of reptiles and amphibians will be similar to those for small non-game and game animals. The amphibians and many of the reptiles potentially impacted by the Project experience a majority of their lifecycle in streams and wetlands and will also face many of the impacts associated with fish. The majority of impacts to these sensitive species will be avoided by reducing the ROW width in wetlands and utilizing Bison's Procedures for all waterbody and wetland crossings. Additionally, Bison will not impact coldwater fisheries from October 1 through May 31 and coolwater/warmwater fisheries from December 1 through May 31. These restrictions will prevent impacts to reptiles and amphibians during sensitive periods.

### ***Birds***

Impacts to ground nesting listed species (such as piping plover, interior least tern, and mountain plover) will be similar to those listed for non-game birds. It is unlikely that the interior least tern or piping plover will be impacted directly by construction activities, since their preferred habitat is to the east of the Project area. Pedestrian surveys have not identified any habitat for these species along the Project route, including on BLM land. Surveys in prairie dog towns (prime mountain plover habitat) did not locate any mountain plovers and identified poor quality plover habitat. Bison proposes to resurvey all prairie dog towns impacted by the Project for mountain plover in the spring of 2010. Impacts to mountain plovers will be avoided by implementing a 0.25 mile buffer from March 15 through July 31, centered on any nests that are located either during pre-construction surveys or by the EIs.

Impacts to migratory birds will include potential disturbance to breeding individuals during the nesting season, particularly if nests occur in or adjacent to the Project area. Impacts could include direct loss of eggs or nestlings; indirect displacement from increased noise and human presence in the vicinity of the Project area; and an incremental reduction in foraging habitat. Loss of nests or young as a result of construction activities could be in violation of the Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711).

Species of special concern by BLM or individual states are included in **Table 7-2**. The USFWS maintains a list of migratory bird species that represent the highest conservation priorities under the MBTA. These Birds of Conservation Concern are selected by examining population trends, threats, distribution, abundance and area importance. The Project falls within Unit 17, Badlands and Prairies, from the 2008 Birds of Conservation Concern Report. No areas of importance for bird conservation identified by the USFWS, Great Plains Joint Venture, Intermountain West Joint Venture, or the Audubon Society are impacted by the Project.

<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Additional Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b</sup></b>
Northern Goshawk	<i>Accipiter gentilis</i>	WY, MT	BLM-SS; MT-S3	Can nest in a wide variety of forest types including deciduous, coniferous, and mixed forests. Nests are generally constructed in the largest trees of dense, old or mature stands near water or dry openings. Requires a nesting area of approximately 30 acres of mixed successional forest.
Baird's Sparrow	<i>Ammodramus bairdii</i>	WY, MT, ND	BCC; BLM-SS; MT-S3; ND-I	This species prefers native prairie but will utilize idle, tame grasslands, and lightly to moderately grazed pastures. Stands of grasses with narrow leaves are readily used.
Le-Conte's sparrow	<i>Ammodramus leconteii</i>	WY, MT, ND	BCC; BLM-SS; MT-S3; ND-II	Montana is at the periphery of the Le Conte's sparrow's range. They breed in wet meadows within peatlands, often with a strong sedge component.
Nelson's Sharp-tailed Sparrow	<i>Ammodramus nelsoni</i>	WY, MT, ND	BLM-SS; MT-S3; ND-I	This species prefers freshwater wetlands with dense, emergent vegetation or damp areas with dense grasses. In North Dakota, Nelson's sharp-tailed sparrows were common in prairie cordgrass stands, occurred at the edges of common reed stands, and nested in sprangletop.
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	WY, MT, ND	BCC, MT-S3; ND-I	This species prefers grasslands of intermediate height and are often associated with clumped vegetation interspersed with patches of bare ground. Other habitat requirements include moderately deep litter and sparse coverage of woody vegetation.
Sage Sparrow	<i>Amphispiza belli</i>	WY, MT, ND	BLM-SS; NSS4; MT-S3	The sage sparrow inhabits prairie and foothill habitat where sagebrush is present. Prefers areas of taller shrubs and low herbaceous vegetation. Considered a sagebrush obligate.
Golden Eagle	<i>Aquila chrysaetos</i>	WY, MT, ND	BGEPA; BCC; BLM-SS; MT-S3; ND-II;	Golden eagles nest on cliffs and in large trees (occasionally on power poles), and hunt over prairie and open woodlands. The majority of cliff nests are selected for south or east facing aspects and availability of sagebrush/grassland hunting areas.
Sprague's Pipit	<i>Anthus spragueii</i>	WY, MT, ND	BCC; BLM-SS; MT-S3; ND-I	An endemic grassland bird, the Sprague's pipit prefers native, medium to intermediate height prairie and in a short grass prairie landscape, can often be found in areas with taller grasses. The Sprague's pipit is significantly more abundant in native prairie than in exotic vegetation.
Short-eared Owl	<i>Asio flammeus</i>	WY, MT, ND	BCC; MT-S4, ND-II, NSS4	Open grasslands, plains, and agricultural areas with suitable vegetation and food. Nests on the ground in a small depression, often with grasses placed around the depression; nest resembles a small bowl.
Burrowing Owl	<i>Athene cunicularia</i>	WY, MT, ND	BCC; BLM-SS; NSS4; MT-SC; ND-II	Migratory species inhabits open grasslands with short vegetation and bare ground. Relies exclusively on burrowing mammals to create burrows for nest sites.
Upland Sandpiper	<i>Bartramia longicauda</i>	WY, MT, ND	BCC; NSS4; ND-I	In general, uses dry grasslands with low to moderate forb cover, low woody cover, moderate grass cover, moderate to high litter cover, and little bare ground.

Table 7-2 - Potential Species Under the Migratory Bird Treaty Act that May Occur in the Vicinity of the Project				
Common Name	Scientific Name	State	Additional Designations <sup>a</sup>	Habitat / Impact <sup>b</sup>
Great-horned Owl	<i>Bubo virginianus</i>	WY, MT, ND		Great horned owls are a generalist species inhabiting most habitat types along the Project route except for large expanses of prairie or large tracts of contiguous upland forest.
Red-tailed Hawk	<i>Buteo jamaicensis</i>	WY, MT, ND		Red-tailed hawks are a generalist and able to adapt to most habitat types found in the Project including developed areas. They nest in trees or cliffs and may reuse nests year to year.
Ferruginous Hawk	<i>Buteo regalis</i>	WY, MT, ND	BCC; BLM-SS; NSS3; MT-S3; ND-I	This species inhabits a variety of open country and shrubland. Usually avoids cultivated fields, heavily grazed pastures, high elevations, and forest interiors.
Swainson's Hawk	<i>Buteo swainsoni</i>	MT, ND	BLM-SS; NSS4; MT-S4; ND-I	Swainson's hawks nest in river bottom forests, brushy coulees, and shelterbelts. They hunt in grasslands and agricultural land, especially along river bottoms. Flimsy nests are built in trees and shrubs, often as low as four feet from the ground.
McCown's longspur	<i>Calcarius mccownii</i>	WY, MT, ND	BCC; BLM-SS; MT-S3; ND-III	This species utilizes shortgrass prairie but has been observed outside of MT in overgrazed pastures.
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	MT, WY, ND	BCC; BLM-SS; NSS4; MT-S2; ND-I;	This species is described as a native prairie specialist. Level to rolling, open, arid, mixed-grass and shortgrass prairie are utilized.
Turkey Vulture	<i>Cathartes aura</i>	MT, WY, ND		Turkey vultures can be found foraging over many types of habitats including grasslands, badlands, pastures and shrublands. This species does not construct nests, rather lays its eggs on ledges, caves, hollow trees or abandoned buildings. Will occasionally nest on the ground.
Yellow Rail	<i>Coturnicops noveboracensis</i>	WY, MT, ND	BCC; MT-S3; ND-I	Breeding habitat consists of wet sedge meadows and other wetlands. Presence of the Yellow Rail is most commonly dictated by water depth, specifically one that fluctuates throughout the breeding season, i.e. wet in the early part of the breeding season and relatively dry (no standing water) by July or September.
Horned Grebe	<i>Podiceps auritus</i>	WY, MT, ND	BCC; MT-S3; ND-I	Breeding Range is on shallow freshwater ponds and marshes with beds of emergent vegetation, especially sedges, rushes and cattails. In spring and fall the Horned Grebe is mainly on large sized bodies of water, including rivers and small lakes.
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	WY, MT, ND	NSS2; MT-S3	This species requires riparian drainages, especially willow and cottonwood habitat. Has been found sporadically in drainages colonized by the invasive tamarisk. The western distinct population of this species is listed as a candidate species under the Endangered Species Act. The entire Project area is east of the continental divide thus this species is not listed as a federal candidate species.
Mountain Plover	<i>Charadrius montanus</i>	WY, MT, ND	BCC; BLM-SS; NSS2; MT-S2	Migratory bird that breeds from April- September. Breeds in heavily grazed prairie, preferentially in prairie dog colonies. Was proposed as a candidate species for the USFWS but was delisted in 2003. Any Mountain plover nests identified by pre-construction surveys or the EI will have a 0.25 mile buffer.

<b>Table 7-2 - Potential Species Under the Migratory Bird Treaty Act that May Occur in the Vicinity of the Project</b>				
<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Additional Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b</sup></b>
Black Tern	<i>Chlidonias niger</i>	WY, MT, ND	BLM-SS; MT-S3; ND-I; NSS3	Black Tern breeding habitat in MT is mostly wetlands, marshes, prairie potholes, and small ponds. However, several locations are on man-made islands or islands in man-made reservoirs.
Sedge Wren	<i>Cistothorus platensis</i>	WY, MT, ND	BLM-SS; MT-S3; ND-II	This species prefers grasslands and savannahs. It nests close to wet meadows but avoids cattail marshes.
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	WY, MT, ND	BCC; MT-S3; ND-I	This species prefers thick forested areas, usually near water.
Merlin	<i>Falco columbarius</i>	MT, ND, WY		Breeding pairs usually use sparse conifer stands adjacent to prairie habitats, but sometimes use windbreaks and river bottom forests. Merlins sometimes nest in urban areas
Prairie Falcon	<i>Falco mexicanus</i>	WY, MT, ND	BCC; ND-II	Prairie falcons use cliffs for nesting, and grassland and prairie habitats for hunting. Most nests are found in a large hole or sheltered ledge but sometimes a larger stick nest built by another raptor may be used.
Peregrine Falcon	<i>Falco peregrinus</i>	WY, MT, ND	BCC; BLM-SS; NSS3, MT-S3; ND-III	This species is found over a wide variety of habitats, but are generally located near open water or marshes that support high concentration of shorebirds or waterfowl. Nest sites occur on tall steep-walled cliffs, bridges, or buildings. Preferred foraging habitat includes lakes, rivers, and wet meadows. Breeding season: April 15 to July 15.
Common Loon	<i>Gavia immer</i>	WY, MT, ND	BLM-SS; NSS1; MT-S3	In MT, common loons will not generally nest on lakes less than about 13 acres in size or over 5,000 feet in elevation. Successful nesting requires both nesting sites and nursery areas. Small islands are preferred for nesting, but herbaceous shoreline areas, especially promontories, are also selected. Nursery areas are very often sheltered, shallow coves with abundant small fish and insects. Most Montana lakes inhabited by common loons are relatively oligotrophic and have not experienced significant siltation or other hydrological changes.
Whooping Crane	<i>Grus Americana</i>	MT, ND	FE; MT-S1; ND-III	During migration, this species feeds and roosts in a variety of habitats including croplands, large and small freshwater marshes, the margins of lakes and reservoirs, and submerged sandbars in rivers. Spring and Fall migration through the Project regions generally occurs April 15 through May 15 and September 15 through October 30, respectively.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	WY, MT, ND	BGEPA; BLM-SS; NSS2; MT-S3;	The bald eagle is primarily a species of riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and open water areas. Wintering habitat may include upland sites. Nesting site selection is dependent upon maximum local food availability and minimum disturbance from human activity.
Logger-head Shrike	<i>Lanius ludovicianus</i>	WY, MT, ND	BLM-SS; MT-S3; ND-II	This species is found in open areas with mixed shrub/brush hedgerows and scattered thorny trees. Thorny plant species (osage orange, honey locust, multiflora rose, wild crabapple) are important for impaling prey.

<b>Common Name</b>	<b>Scientific Name</b>	<b>State</b>	<b>Additional Designations<sup>a</sup></b>	<b>Habitat / Impact<sup>b</sup></b>
Franklin's Gull	<i>Larus pipixcan</i>	WY, MT, ND	BLM-SS; NSS3; MT-S3; ND-I	Preferring large, relatively permanent prairie marsh complexes, the Franklin's gull builds its nests over water on a supporting structure of emergent vegetation.
Marbled Godwit	<i>Limosa fedoa</i>	WY, MT, ND	BCC; BLM-SS; ND-I	Breeds in short, sparsely to moderately vegetated landscapes that include native grassland and wetlands. Individuals in ND prefer ephemeral ponds and alkali wetlands.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	WY, MT, ND	BLM-SS; MT-S3; ND-II	This species is usually found along major rivers having riparian forest associated with them or open savannah country, as long as adequate ground cover, snags, and canopy cover can be found. Individuals typically nest in the same tree or cavity in successive years.
Lewis's Woodpecker	<i>Melanerpes lewis</i>	WY, MT, ND	BCC; NSS3; MT-S2	Lewis's woodpeckers are known to occur in river bottom woods and forest edge habitats. Important habitat features include an open tree canopy, a brushy understory with ground cover, dead trees for nest cavities, dead or downed woody debris, perch sites, and abundant insects.
Long-billed Curlew	<i>Numenius americanus</i>	WY, MT, ND	BCC; BLM-SS; NSS3; MT-S3; ND-I	This species uses expansive, open, level to gently rolling or sloping grasslands of short vegetation such as short-grass and grazed mixed-grass prairie for breeding. Proximity to water is an important factor in habitat selection. Nests in dry uplands next to wet meadows.
Sage Thrasher	<i>Oreoscoptes montanus</i>	WY, MT, ND	BLM-SS; NSS4; MT-S3	This species is associated with sagebrush plains, primarily in arid or semi-arid situations. It breeds and forages in tall sagebrush/bunchgrass, juniper/sagebrush/bunchgrass, mountain mahogany/shrub, and aspen/sagebrush/bunchgrass communities.
Osprey	<i>Pandion haliaetus</i>	WY, MT, ND		These raptors nest mainly near large lakes, reservoirs, and rivers. Nest tree height can be variable but is almost always as tall or taller than other trees in the area. Presence of a flat, stable surface for nesting is more important than tree species.
Wilson's Phalarope	<i>Phalaropus tricolor</i>	WY, MT, ND	BLM-SS; ND-I	During spring, the species is widespread in the valley in lakes, ponds and flooded fields. Summer birds are restricted to marshy borders of lakes and ponds.
Black-backed Woodpecker	<i>Picoides arcticus</i>	WY, MT, ND	BLM-SS; NSS4; MT-S3	A medium sized woodpecker that inhabits boreal and montane coniferous forests, especially in areas with standing dead trees such as burns, bogs, and windfalls; less frequently in mixed forest and rarely in winter in deciduous woodland. Closely associated with recently burned forests and other areas with high densities of boring insects.
White-faced Ibis	<i>Plegadis chihi</i>	WY, MT, ND	BLM-SS; NSS3; MT-S3	This species utilizes freshwater wetlands, including ponds, swamps and marshes with pockets of emergent vegetation for breeding habitat. Flooded hay meadows and agricultural fields are used as feeding locations.
American Bittern	<i>Botaurus lentiginosus</i>	WY, MT, ND	BCC; NSS3; MT-S3; ND-I	Breeding habitat is chiefly freshwater wetlands with tall, emergent vegetation. Sparsely vegetated wetlands occasionally, tidal marshes rarely. Winter range include areas where temperatures stay above freezing and waters remain open.

**Table 7-2 - Potential Species Under the Migratory Bird Treaty Act that May Occur in the Vicinity of the Project**

Common Name	Scientific Name	State	Additional Designations <sup>a</sup>	Habitat / Impact <sup>b</sup>
Pinyon Jay	<i>Gymnorhinus cyanocephalus</i>	WY, MT, ND	BCC; MT-S3	Breeding habitat consists of pinyon juniper woodlands but may also include larger pine trees. Can be found in sagebrush or scrub oak in the non breeding season.
Dickcissel	<i>Spiza americana</i>	WY, MT, ND	BCC; BLM-SS; NSS4; MT-S4; ND-II	Breeding habitat consists of grasslands, meadows, savanna, cultivated lands, and brushy fields. They nest on the ground in grass or rank herbage, or raised a little above ground, in grass tufts or tall weeds, or in low shrubs or trees, up to about 2 meters above the ground but usually lower.
Brewer's Sparrow	<i>Spizella breweri</i>	WY, MT, ND	BCC; BLM-SS; NSS4; MT-S3; ND-III	This species inhabits shrubland communities dominated by sagebrush and juniper woodlands.
Willet	<i>Tringa semipalmata</i>	WY, MT, ND	BLM-SS; ND-I	Western breeding range on the prairies, uses short, sparse cover in wetlands and grasslands; on semiarid plains near bodies of water; in grasslands associated with shallow wetlands; to a lesser extent croplands.
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	WY, MT, ND	BLM-SS; ND-II	Their habitat is primarily grasslands interspersed with shrub and brush-filled coulees. They prefer stands of inter-mixed tree and shrub grasslands. Sharp-tailed Grouse persist only on native bunchgrass-shrub stands.

<sup>a</sup>FT - USFWS Threatened, FE - USFWS Endangered, FC – USFWS Candidate, FP – USFWS Petitioned

BCC – USFWS Birds of Conservation Concern for region 17 Badlands and Prairies

BLM-SS – BLM Sensitive Species

BGEPA – Bald and Golden Eagle Protection Act

NSS1 – WY populations greatly restricted or declining, extirpation possible or ongoing significant loss of habitat

NSS2 – WY populations declining or restricted in numbers or distribution, extirpation not imminent; ongoing significant loss of habitat.

NSS3 – WY populations declining or restricted in numbers or distribution, extirpation not imminent; habitat restricted or vulnerable but no recent or ongoing significant loss; species likely sensitive to human disturbance.

NSS4 – WY populations declining or restricted in numbers or distribution, extirpation not imminent; habitat not restricted, vulnerable but no loss; species not sensitive to human disturbance.

MT-S1 – At high risk because of extremely limited and potentially declining numbers, extent and/or habitat, making it highly vulnerable to global extinction or extirpation in the state

MT-S2 - At risk because of very limited and potentially declining numbers, extent and/or habitat, making it vulnerable to global extinction or extirpation in the state

MT-S3 - Potentially at risk because of limited and potentially declining numbers, extent and/or habitat, even though it may be abundant in some areas

MT-S4 - Uncommon but not rare (although it may be rare in parts of its range), and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern

MT-S5 - Common, widespread, and abundant (although it may be rare in parts of its range). Not vulnerable in most of its range.

ND- I – North Dakota Species in greatest need of conservation

ND-II – North Dakota Species in need of conservation, but that have had support from other wildlife programs

ND-III – North Dakota Species in moderate need of conservation, but that are on the edge of their range in North Dakota

<sup>b</sup>Habitat descriptions are provided by the Montana Field Guide and NatureServe.org

Sources: Aggregate of lists provided by the USFWS, BLM FOs, WYGF; WY Natural Diversity Database MTFWP, and the NDGF

In order to minimize impacts to migratory birds, Bison is in the process of negotiating a migratory bird conservation agreement with the USFWS. In this agreement, Bison plans to avoid impacts to migratory birds by protecting prime nesting habitat. Bison has identified areas of high quality habitat through field surveys, analysis of sagebrush mapping data provided by the Buffalo BLM field office, and use of the National Interagency Fire Center's LANDFIRE database. High quality habitat is expected to contain the greatest diversity and density of migratory birds along the Project route. These areas include native prairies, ponderosa pine savannah, and high quality sage/bunchgrass. Generally, high quality habitat areas were lightly to moderately grazed, contained high native plant diversity and cover, and contained few if any non-native invasive species.

Bison will protect high quality habitat in a number of ways. The first is through prohibiting construction (timing restrictions or windows) during the nesting season for raptors, sage grouse, and sharp-tailed grouse. These timing restrictions will protect areas of high quality habitat during the migratory bird nesting season, as well as protect grouse and raptors. The second is through performing certain ROW activities before the migratory bird season starts. In areas of high quality habitat that will not be protected by a timing restriction, Bison proposes to make the ROW less attractive to migratory birds by trampling or mowing the ROW. Bison will use a brush hog or other method approved by the landowner or land manager (on BLM land), to reduce the structural diversity of the ROW and to remove preferred nesting habitat. In areas where brush hogging is not allowed, Bison will utilize off-road vehicles to trample the ROW. These methods are preferred by the USFWS to discourage birds from nesting in the ROW, making them less likely to be impacted by construction activities. The final migratory bird conservation agreement has yet to be agreed upon with the USFWS, but will be filed with the BLM when complete.

Construction impacts on nesting raptors, if present in or adjacent to the Project area, could include abandonment of a breeding territory or nest site, or the potential loss of eggs or young. Impacts to nesting raptors will be reduced by the identification of raptor nests during pre-construction aerial and/or pedestrian surveys and through the establishment of protection zones for active nest sites. Helicopter surveys for raptor nests were conducted in the spring of 2009. Additional surveys to determine the existence of nests in the BLM database that were not located in the spring of 2009 were conducted in December of 2009. Surveys to assess the occupancy of nests will be performed in the spring of 2010 before construction. Occupied raptor nests and identified grouse leks that have construction timing restrictions are presented in **Table 7-3**.

<b>Table 7-3 - Raptor Nest and Grouse Lek Timing Stipulations</b>		
<b>Species</b>	<b>Distance (miles)</b>	<b>Timing</b>
<b>Wyoming</b>		
All raptors	0.5	February 1 - July 31
Burrowing owl	0.25	April 15 – August 31
Ferruginous hawk	1	February 1 - July 31
Bald eagle	0.5	Year round
Bald eagle	1	February 1 – August 15
Bald eagle winter roost	1	November 1 - April 1
Sage grouse lek	3	March 1 – June 30
Sage grouse lek	0.6	Year round
Sharp-tailed grouse lek	2	March 1 – June 15
Sharp-tailed grouse lek	0.25	Year round
<b>Montana</b>		
All raptors	0.5	March 1 - August 1
Burrowing owl	0.5	April 15 – August 31
Ferruginous hawk	1	March 1 - August 1
Bald eagle	0.5	Year round
Bald eagle	1	February 1 - August 15
Bald eagle winter roost	1	November 1 - April 1
Sage grouse lek	3	March 1 – June 30
Sage grouse lek	0.6	Year round
Sharp-tailed grouse lek	2	March 1 – June 15
Sharp-tailed grouse lek	0.25	Year round
<b>North Dakota</b>		
All raptors	0.5	March 15- July 15
Ferruginous hawk	1	March 15- July 15
Bald eagle	0.5	Year round
Bald eagle	1	February 1 - August 15
Bald eagle winter roost	1	November 1 - April 1
Golden eagle	0.5	February 1 – August 1
Sage grouse lek	3	March 1 – June 30
Sage grouse lek	0.6	Year round
Sharp-tailed grouse lek	2	March 1 – June 15
Sharp-tailed grouse lek	0.25	Year round

The burrowing owl is a BLM and state sensitive species. Burrowing owl habitat has been found in the proximity of the Project area, but Bison re-routed the Project to avoid these areas. It is presumed that this species breeds within the Project area due to its common association with prairie dog colonies. Active nesting occurs from April 1 to August 15. The prairie dog town survey identified one burrowing owl burrow (not on BLM land) which was active in 2009 in Wyoming. To mitigate any impacts to burrowing owl burrows, Bison will observe a 0.25-mile construction buffer during the nesting season (April 15 – August 31) around identified active burrows in Wyoming and a 0.5-mile buffer in Montana on BLM land. Surveys have not identified any burrowing owls on BLM lands in Montana.

Whooping crane migration occurs in the spring (April 15 - May 15) and fall (September 15 - October 30) through the Project area in North Dakota and Montana. Impacts to whooping crane during these periods

would be similar as those for other game and non-game wading birds. Surveys conducted in 2008 and 2009 identified wetlands with potential roosting and foraging habitat. FERC Certificate Environmental Condition 22 requires Bison to file a list of locations of potential foraging and roosting habitat for whooping cranes within 1 mile of the proposed Project and “implement a 1-mile buffer zone around any identified potential roosting or foraging habitat during the spring and fall migration periods (April 15 through May 15 and September 15 through October 30). If a whooping crane is encountered during construction, Bison shall stop all construction activity within a 1-mile buffer around the sighting, and notify the applicable FWS Ecological Service Office.” Bison will comply with this Environmental Condition unless additional consultation with USFWS results in different protection measures for this species.

Greater sage grouse is a sagebrush obligate species that is known to occur along the Project route. Lek sites are generally located in open areas such as broad ridges, grassy areas, and disturbed sites, adjacent to suitable nesting habitat. In general, important breeding nesting and wintering habitat will be centered around the lek site. Nesting occurs within sagebrush stands with adequate height, canopy cover, and food source. Maintaining a 0.6-mile no surface occupancy (NSO) buffer will reduce habitat loss in the winter, and maintaining the 3-mile construction buffer exceeds current requirements of a 0.25-mile NSO and 2-mile construction buffer. These increased buffers will assist in preventing impacts to nesting and breeding birds. Bison has also planned the route to remain adjacent to existing disturbances to the maximum extent practical. At the crossing of the Little Missouri River, in Bowman County, North Dakota, BLM and the North Dakota State Land Department agreed to move the route within a 0.6-mile lek buffer to avoid a soil type that is particularly difficult to restore/revegetate. The revised route does not encroach on the 0.25-mile lek buffer.

Impacts to greater sage grouse include disturbing leks and lekking activities by pipeline construction activities (specifically, noise generation and habitat removal). Noise from equipment and compressor stations is especially disruptive during the mating season, because it can interfere with drumming that the males use to attract mates. To mitigate these impacts, Bison will avoid construction during the recommended windows provided by the USFWS, BLM, and state wildlife agencies (e.g., working hour restrictions during lekking and/or seasonal restrictions). Bison is aware of leks that occur along the Project route and has designed the Project with these construction and occupancy stipulations in mind. Bison will honor a 3-mile construction buffer during the lekking season (with one exception, noted above), which will prevent construction and operation noise within 3 miles to prevent noise impacts. Bison conducted aerial surveys in the spring of 2009 for new leks and to determine the status of existing leks.

### ***Vascular Plants***

Impacts to sensitive plant species will be similar to the impacts on other vegetative communities (Section 3.2), including dust blanketing, increased erosion, habitat disturbance and individual plant removal. For Ute ladies'-tresses, a species-specific survey protocol was submitted to the USFWS, which included surveys in perennial wetlands and waterbodies that are not scheduled to be bored or have not been ruled out as potential habitat. Surveys conducted in August of 2009 using this protocol did not identify any Ute ladies'-tresses or any potential habitat. Surveys for blowout penstemon habitat were conducted concurrently with wetland and waterbody surveys. One active sand dune feature was found on the Project route on BLM land and was surveyed in July 2009. No blowout penstemon plants were observed in this feature. To date, no sensitive plant species have been found. If found, mitigation options for BLM sensitive species will include reducing the construction ROW width, avoidance, or transplanting, as negotiated with the BLM.

#### **7.10 Cultural Resources**

In order to minimize the potential for the accidental disturbance of cultural resources, Bison conducted a detailed intensive cultural resources survey all lands affected by the Project. Currently, more than 99% of the total Project route (including BLM, private and state lands) has been surveyed for cultural resources. As of the date of this POD, all BLM lands have been surveyed.

Cultural Resource reports for all BLM lands, with the exception of access road CA12-2, have been previously submitted to BLM. Access Road CA12-2, located in Carter County, Montana was surveyed on

March 31, 2010. Results of the survey will be provided in the report supplement titled: “*Addendum 3 to the Class III Cultural Resources Survey of the Montana Portion of the Bison Pipeline Project, in Fallon, Carter, and Powder River Counties, Montana*”, which will be submitted to BLM by May 15, 2010. No cultural resources were found during surveys of this access road.

As a result of the cultural resources surveys, 67 cultural resources sites were identified or reconfirmed/relocated within the Project’s Area of Potential Effect (APE). In addition, 121 isolated resources were recorded during the surveys. Additional sites were recorded as a result of the overall Project; however, due to changes in the Project route, they are no longer in the APE and are therefore not included in this total number. Of the 67 cultural resources sites, five sites are eligible for inclusion in the National Register of Historic Places (NRHP). In addition, one site is potentially eligible, and two are unevaluated. The potentially eligible site, one unevaluated site, and four of the five eligible sites have been avoided by the Project via route variations, temporary construction workspace adjustments (“neckdowns” to avoid), or boring underneath the site (historic linear site); therefore, there will be no impacts on these sites. All of these sites are located on private land.

All other sites recorded or revisited on the Project pipeline route are not eligible for inclusion in the NRHP. Bison plans to conduct additional testing at one of these ineligible sites in Carter County, Montana, at the request of the Montana State Historic Preservation Office (MT SHPO). This site is located on privately-owned land. Lastly, at the request of a Native American tribe, four recommended ineligible sites located on private land within Campbell County, Wyoming, will be avoided.

The remaining eligible site will be impacted by the Project, but in a non-contributing portion of this site. The site (Site 48CA5212) is the historic Echeta Reservoir located in Campbell County, Wyoming. The BLM determined the site eligible for the NRHP under Criteria A, C, and D for its association with the settlement and economic development of northeastern Wyoming, its distinctive features as an earthen water reservoir, and its ability to provide information on railroad-built water reservoirs. An existing road crosses the eastern leg of the reservoir. This road has been improved (graveled and a culvert placed in the reservoir), and a pipeline parallels the road. Therefore, Bison recommends the corridor consisting of the road and pipeline crossing the reservoir as a non-contributing component of the site. The recorded segment is to be used as an access road for the Project (Access Road CM-94). Bison has no plans to upgrade the road beyond the existing disturbed corridor; therefore, no further investigation is recommended.

The remaining unevaluated site (Site 24CT0803) is located on BLM land adjacent to an existing crowned and ditched road in Carter County, Montana. The site was previously recorded as a small lithic scatter (NRHP recommendation was unevaluated). As part of Bison surveys, the site was revisited; however, the survey team did not relocate any lithic artifacts. The only artifacts found in the site area were modern glass fragments, likely from roadside dumping from the nearby gravel road. The existing road is to be used as Access Road CA-28. Bison has no improvements planned for this road other than the potential to apply additional gravel to the road. Since no additional improvements are planned for this road, no further investigation is warranted.

To ensure that Bison 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. This plan has been reviewed and approved by the FERC, the BLM, and the Wyoming, Montana, and North Dakota SHPOs. The Unanticipated Discovery Plan for Cultural Resources is presented in **Appendix N**.

#### 7.11 Visual Resource Management

BLM’s general management objectives for public lands provide design standards on projects to protect or enhance the four defined Visual Resource Management (VRM) classes. These VRM classes (Classes I, II, III, and IV) are typically developed through the Resource Management Plan (RMP) process for all BLM lands. The classes are determined through an inventory process and are used to provide guidance to management staff and industry when contemplating proposed surface-disturbing activities. Projects within all VRM classes would require mitigation where appropriate.

Bison conducted a visual assessment survey in August 2009. Based on the analysis performed, the Project route contains VRM Class III and Class IV area, with approximately 3% of the land designated Class III and 97% of the land designated as Class IV.

#### 7.12 Public Safety

The Project will be designed, constructed, operated, and maintained in accordance with standards which meet or exceed the DOT Minimum Federal Safety Standards (49 CFR Part 192). The DOT regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Material selection and qualification requirements, design, construction, testing, operating, and maintenance requirements, including requirements that protect the pipeline from corrosion, are specified in 49 CFR Part 192.

49 CFR Part 192 establishes pipeline design classification standards, based on population density in the vicinity of an existing or proposed pipeline. These class standards provide increasingly more conservative design requirements as population density increases. The class location unit area extends 220 yards (660 feet) on either side of the centerline of any continuous 1-mile length of pipeline. The entire Project route crosses Class 1 locations only. Class 1 is defined as a location with 10 or fewer buildings intended for human occupancy. No Class 2, 3, or 4 locations are expected to be crossed by the Project route. Prior to construction of the Project, the class location along the pipeline route will be reassessed to ensure that the pipeline is designed and constructed for the current class location as well as for any foreseeable future changes in class location. Bison will design, construct, operate, and maintain the Project in accordance with the DOT requirements.

Currently, there are no high consequence areas (HCAs) as defined in 49 CFR Part 192.903 along the proposed Project route. The pipeline route will be reviewed again prior to construction for identification of HCAs. To maintain compliance with the pipeline classification and pipeline integrity management regulations defined in 49 CFR Part 192, a program of continuous monitoring of class location changes and HCAs will be employed. Field operations personnel, through periodic aerial patrols, ground patrols, and surveillance conducted during other operational tasks will monitor the pipeline route every six months or less for any changes that would impact the class locations and pipeline integrity management program. In addition, imagery will be procured to support the identification of structures along the pipeline route. Once such changes are identified, appropriate steps necessary to keep the pipeline in compliance with the regulations defined in 49 CFR Part 192 will be taken.

49 CFR Part 192.179 establishes the spacing between MLVs and requires that the MLVs be located no more than 20 miles apart in Class 1 locations. MLV have automatic closures incorporated into their design." Operating personnel can close the MLVs to isolate the natural gas within segments of the pipeline.

The outside of the steel pipe will be coated with fusion bonded epoxy coating, while joints will be coated with two-part epoxy. Cathodic protection test stations will be installed at approximately one-mile intervals. Cathodic Protection System (CPS) facilities such as ground beds, rectifiers, and anodes (where required) will be placed within the Permanent ROW and at MLV, meter stations and the compressor station, as needed. The CPS function is to work in conjunction with the external pipe coating to minimize the risk of corrosion. Routine inspections and cathodic protection surveys will be performed to identify and correct potential problems with the CPS.

In-line inspection of the pipeline will be performed periodically using computerized electro-mechanical devices that travel inside the pipeline checking for deformities, pipe-wall metal loss or other factors that could impact the integrity of the pipeline. These devices, often called "smart pigs", are inserted and removed from the pipeline at the launcher and receiver stations located along the pipeline. If potential problems are identified, then necessary repairs will be made to the affected pipe.

The pipeline route will be marked clearly with identification that includes safety warnings and telephone numbers to report suspected problems. In addition, Bison will be a member of the "One Call" and related pre-excitation notification organizations in the states in which it will operate. Through "One Call,"

contractors, highway workers, farmers, and anyone digging along the Permanent ROW will have the ability to call a single phone number to have all underground facilities located prior to excavation activities. If the Project facilities are located in the area of proposed excavation, the company will identify the location of the facilities in accordance with the applicable “One Call” program. Under American Petroleum Institute Recommended Practice (API RP) 1162, Bison will prepare and implement a written public awareness program for use during operations of the pipeline.

The toughness and strength of the X70 steel pipe and its metallurgical properties will protect against loss of integrity due to dents and other external damage. In addition, 49 CFR Part 192 requires the proper installation of pipeline markers and signage as well as a Permanent ROW monitoring program thereby mitigating the possibility of third-party and other outside force damage to the pipeline. Pipeline markers and warning signs will not be higher than normal fence posts in the proximity of the pipeline. As such, raptor deterrents are not necessary, as the posts will not occur in numbers or in heights any greater than surrounding typical fence posts. The Permanent ROW monitoring program will monitor, record, and investigate activities near the Permanent ROW and adjoining facilities.

Finally, Bison developed a Traffic and Transportation Management Plan to address traffic concerns including safety that may affect local communities and their associated roads and highways during construction of the Project (**Appendix R**).

### 7.13 BLM Management Plans

The BLM creates land use plans, known as Resource Management Plans (RMPs), to maximize resource values for present and future generations. RMPs are kept current by continuous updates to correct errors and update supporting data by amending decisions when needed and through periodic revisions that incorporate management changes and amendments. **Table 7-4** provides details on the BLM RMP status within each FO. When needed, implementation plans are prepared. At this time, RMPs for two out of three of the BLM FOs are in various stages of being revised. For the purposes of the POD, only current RMPs were reviewed for each FO. If any of the RMP revisions affect the Project and are finalized with a Record of Decision (ROD), Bison will address the issue with the appropriate authority.

State	Field Office	RMP Title	Date of Current RMP	Status of RMP
WY	Buffalo	Buffalo Resource Management Plan ROD	Oct. 1985	Under Revision
WY	Buffalo	Buffalo Resource Management Plan Revision	2001	Current
MT	Miles City	ROD and Approved Powder River Resource Area Management Plan	March 15, 1985	Under Revision. Currently managed under two RMPs, which will be combined into a single RMP
		Big Dry Resource Management Plan/Environmental Impact Statement	April 1996	
ND	North Dakota	ND Resource Management Plan and Environmental Impact Statement	Dec. 1986	Current

Discussion of RMP conditions related to ROW corridors and land resources/land use is provided for each FO in the following sections:

**Buffalo RMP** – The Buffalo Resource Area is managed under the Buffalo RMP (BLM, 1985), which was updated in 2001. While the first Lands and Realty Management decision (LR-1) of the 1985 RMP requires BLM to locate transmission and transportation facilities within designated corridor areas illustrated on RMP map 6, this management decision was revoked in the 2001 RMP Update, due to the “scattered public surface” (BLM, 2001). The 2001 RMP Update requires that transmission lines and transportation facilities are located to the extent feasible within identified corridor areas. Bison has collocated the proposed Project

with other pipelines to the extent feasible, resulting in approximately 42.55 miles (2.13 miles on BLM land) of collocation, which represents about 14% collocation. Approximately 1.43 miles of the Project is collocated on BLM land in Wyoming. The 2001 RMP Update also limits communication sites on North Middle Butte, but leaves the remainder of the planning area open for ROW development. The Project is in conformance with the RMP Update, as it is collocated with existing disturbance (pipeline) where feasible, and avoids North Middle Butte, the only site within the Buffalo Resource Area with a limitation for ROWs.

**Miles City RMP** – Resources in the Miles City FO area are currently managed under two separate RMPs: the Big Dry RMP and the Powder River RMP. Of the counties affected by the Project, the Big Dry RMP includes all of Fallon County and a very small section of Carter County. The remainder of Carter County and Powder River County are addressed in the Powder River RMP. One Area of Critical Environmental Concern (ACEC), Reynold's Battlefield, is located in Powder River County. Reynold's Battlefield ACEC will not be affected by the Project. The Finger Buttes ACEC, located in Carter County, will not be affected by the Project.

The Big Dry RMP (BLM, 1996) states that “Establishment of right-of-way corridors was considered, but not carried forward due to the fragmented federal ownership pattern in the planning area. Establishment of corridors would not be effective because most of the land is controlled by other landowners and may interfere with private property”. Although no corridors were established, the RMP defines certain avoidance and exclusion areas associated with Alternative D (Preferred Alternative). Cultural and wildlife Areas of Critical Environmental Concern (ACEC), Makoshika State Park, and the special recreation management areas are designated as avoidance areas. The Smoky Butte ACEC is excluded from ROW development. As none of these areas are crossed by the Project, the Project is in conformance with the Big Dry RMP.

The Powder River Resource Area RMP (BLM, 1985) states that right-of way applications “will continue to be approved on a case-by-case basis. Most of the present rights-of-way applications are for maintenance or upgrading of existing rights-of-way. Applicants are encouraged to locate new facilities within existing rights-of-way.” Where practical and feasible, Bison has collocated the Project with existing pipelines. Approximately 1,848 feet (0.35 mile) of collocation was achieved in Powder River County and approximately 1,848 feet (0.35 mile) of collocation was attained in Carter County, resulting in a total of 3,696 feet (0.70 mile) or approximately 4% of collocation on BLM lands in Montana. Bison's Alternatives Analysis considered collocation with other linear disturbances (overhead electrical transmission lines and roads), but such utilities were generally non-existent, not located in the appropriate orientation, not economical, or would result in larger environmental impacts. The Project is in conformance with the Powder River Resource Area RMP.

**North Dakota RMP** - The North Dakota Resource Area is managed under the North Dakota RMP and EIS (BLM, 1987), which specifies that ROW applications will be considered on a “case-by-case basis. Areas containing resources or uses that would be impacted and difficult or impossible to mitigate will be avoided, unless it is shown there is no reasonable alternative”. These areas include: areas having potential for recreational development; environmentally sensitive areas, such as crucial wildlife habitats, wetlands, slump areas, and extensive wooded areas; areas containing significant archeological, historical, or paleontological values; areas with specific visual objectives (e.g., adjacent to established parks, adjacent to the Little Missouri Scenic River); and areas with high potential for coal mining.

Bison's biological and cultural research and surveys have documented the absence of wetlands, slump areas, extensive wooded areas, cultural resources, and established parks on BLM lands in the immediate vicinity of the Project. Where paleontological resources were identified during Bison's research or surveys, Bison routed around/avoided them, unless there was no reasonable alternative. As provided in the Final EIS, five paleontological sites were identified on Federal lands in North Dakota. Four of these sites were deemed “significant” and were collected and recommended for monitoring during construction. Any additional paleontological resources discovered during Project construction will be addressed in accordance with Bison's Paleontological Resources Anticipated and Unanticipated Discovery Plan (**Appendix O**). The remaining site was not considered to be significant.

Similarly, impacts to sage grouse and sharp-tailed grouse habitat will be minimized by adhering to BLM-requested timing stipulations. Other crucial wildlife habitats were not identified on BLM lands in North Dakota. Though Bison will cross the Little Missouri River, the crossing will be completed using the HDD technique, which will minimize impacts to this State Scenic River. The crossing is not on BLM land. Further, the installation of an underground pipeline is expected to have minimal, long-term impacts on the viewshed from this waterbody. No other areas of suitable land for recreational development that would be affected by the Project were identified by Bison on BLM lands in Bowman County, North Dakota. Bison's geological research has identified one, approximate 0.4-mile portion of BLM land that is underlain by lignite deposits. Based on minimum criteria established by coal mining companies operating surface mines in North Dakota (Murphy, 2005a; 2005b; 2006a; 2006b), these deposits were not classified as "strippable". These deposits are therefore not considered to be "high potential" areas for coal mining.

The 1987 North Dakota RMP and EIS also states that "future facilities will be located within or adjacent to existing ROWs when possible and when environmental conditions permit. The designation of utility corridors across public land is not practical because of the relatively small areas of control or influence designation would have. Official corridors will be established if changes in conditions such as public land pattern or right-of-way uses warrant". Due to the lack of linear disturbances in appropriate locations and orientations, Bison was unable to collocate the Project with any utilities on BLM lands in North Dakota. Since no collocation options were available, it was not possible to locate the Project within or adjacent to existing ROWs, and this RMP criterion was satisfied.

Using a combination of rerouting/avoidance and mitigative measures recommended by the BLM, Bison has minimized impacts to cultural, biological and visual resources, and avoided impacts to other sensitive resources. The Project is in conformance with the North Dakota RMP and EIS.

This RMP also references the North Dakota Energy Conversion and Transmission Siting Act. Locations of projects that fall within the scope of this Act (including pipelines) require adherence to the "corridor and route criteria set forth in the Act in addition to considering other resource values and uses BLM considers to be important to the public." However, since the Project is under FERC (federal) jurisdiction, it is not subject to the requirements of the Transmission Siting Act.

### **Consistency with RMPs**

Each RMP contains information related to management of specific resources, ranging from coal to grazing rights. The management strategy for these resources usually consists of a set of restrictions and conditions necessary to allow such a land use in a particular area. In the course of numerous discussions with the BLM, many of the requirements of each FO's RMP have been considered and have directly affected the Project route. Notably, the Project route has been moved to the extent practicable to avoid federally endangered and threatened species habitat, sensitive species habitat, mining claim lands, cultural resources, and paleontological resources. In accordance with the RMPs, the Project route has been moved to collocate with existing utility corridors as much as practical. Locating the Project along these previously disturbed areas will minimize impacts to various ecological and cultural resources.

Many of the RMPs provide discussion of management actions related to ROWs and utility corridors. Typically, these sections define: "avoidance areas", which are defined as unsuitable for major ROWs; "exclusion areas", those areas in which ROWs are sometimes allowed, but only under specific circumstances; and "potential or existing utility corridors," those areas that have been designated or are proposed to be designated as utility corridors. As noted above, discussions with the BLM have resulted in Project reroutes to entirely avoid "avoidance areas" and "exclusion areas." In addition, the Project will be constructed in general accordance with the requirements of each relevant RMP.

## **8.0 STABILIZATION AND REHABILITATION**

All lands impacted by construction of the Project will be restored in accordance with Bison's Plan and Procedures (**Appendices D and E**) and Bison's Reclamation Plan (**Appendix S**) developed specifically for the Project. Bison's Plan documents the erosion control, revegetation, and maintenance actions that will be

undertaken in upland areas of the Project. Bison's Procedures detail the construction and restoration methods that will be used in areas of the Project that are located in wetlands and waterbodies. Bison's Reclamation Plan (**Appendix S**) addresses the short-term stabilization and long-term reclamation of Project areas, including those that have Low Reclamation Potential (LRP). LRP areas include soils that are highly susceptible to wind erosion, water erosion, and drought; soils that restrict rooting depth; soils that do not support vegetation (badlands, rock outcrops, etc.); and soils that may have high sodium or salt contents.

In general, after the completion of backfilling, all disturbed areas will be finish-graded, and any remaining trash and debris will be disposed in compliance with federal, state, and local regulations. Contouring will be accomplished using acceptable excess subsoil from construction or other suitable and approved materials. During backfilling, special care will be taken to minimize erosion, restore the natural contour of the ground and restore surface drainage patterns as close to preconstruction conditions as practicable. After cleanup is completed, the disturbed areas will be protected by the implementation of erosion control measures, including site specific contouring or permanent slope breakers, using BLM-provided spacings, as detailed in Bison's Reclamation Plan (**Appendix S**). The erosion control measures used will be in accordance with Bison's Plan and other measures approved by the local soil conservation districts and appropriate state agencies. All fences impacted by construction will be rebuilt to pre-existing or better condition using new materials. Temporary access gates will be replaced with new posts and new bracing, access improvements will be removed, and access areas will be restored.

#### 8.1 Restoration Cost

Bison prepared an estimated per-acre restoration cost, based on consultation with reclamation specialists with local experience. For the purpose of this estimate it was assumed that top soil was stripped from the full construction corridor, and the trench was excavated along the full BLM-width of the construction corridor: backfill of the ditch would be required prior to beginning reclamation efforts. Costs for backfilling the open ditch and returning grade to pre-construction condition are included in this estimate.

The final reclamation work would begin with decompaction of the subsoils followed by spreading of the stripped top soil. The seed bed would be prepared and ROW seeded. Mulch or other soil stabilization fabrics would also be applied at this time. All labor and equipment costs are estimated at rates provided by a local contractor (Magna Energy Services, Reclamation Division) and escalated to union scale, or were taken from Bison's pipeline contractor bids.

It is presumed that monitoring of the ROW for successful revegetation would be performed by BLM representatives or a contract entity. Costs for such inspection are included below. A breakdown of this cost is provided in **Table 8-1**.

<b>Table 8.1 - Bison's Estimated Restoration Cost</b>				
<b>Restoration Component</b>	<b>Quantity</b>	<b>Unit</b>	<b>Cost per Unit</b>	<b>Total cost per acre</b>
Move In/Move Out	2	each	\$25.00	<b>\$50.00</b>
D-6 Dozer (earthmoving)	1	hour	\$90.00	<b>\$90.00</b>
JD-7630 w/tiller (decompaction)	0.5	hour	\$60.00	<b>\$30.00</b>
Seed	10	lbs	\$25.00	<b>\$250.00</b>
Mileage/other cost	1	each	\$15.00	<b>\$15.00</b>
Personnel	4	each	\$47.75	<b>\$191.00</b>
Contract Preparation/Administration	1	each	\$10.00	<b>\$10.00</b>
Procurement Specifications	0.5	hour	\$50.00	<b>\$25.00</b>
Engineer/Inspection	0.5	hour	\$150.00	<b>\$75.00</b>
<b>Sub Total</b>				<b>\$736.00</b>
BLM Cost			17.10%	<b>\$125.86</b>
<b>Total per acre cost</b>				<b>\$861.86</b>
<b>Total BLM Acreage</b>				<b>463.34</b>
<b>Total Reclamation Cost for BLM Land Crossed by the Bison Pipeline</b>				<b>\$399,332.36</b>

## 8.2 Soil Replacement and Stabilization

### *Upland Areas*

In all upland areas (including LRP areas), following cleanup of debris, soil will be returned to the trench in the order in which it was removed (subsoil first followed by segregated topsoil). Topsoil will not be used to pad the pipe. Rock excavated from the trench may be used to backfill the trench only to the top of the existing bedrock profile. The size, density, and distribution of rock remaining on the construction work area will be similar to adjacent areas not disturbed by construction. BLM may approve other provisions in writing. Permanent erosion control devices, such as slope breakers, on BLM uplands will be placed using spacing recommendations obtained from the local BLM FO, and provided in Bison's Reclamation Plan. Subsequent to compaction testing of subsoil and topsoil (as required only on BLM lands in Wyoming), the ROW will be tilled, plowed, scarified, or decompacted, as requested as detailed in Bison's Reclamation Plan. Backfilled soil will be mounded over the trench after construction is completed. This mounding is a typical post-construction procedure to allow for settlement in the trench area and will consist of up to a 6-inch rise over the trench that is gradually feathered to meet existing grade on both sides of the disturbed area.

### *Wetlands*

Wetland crossings on BLM land will be restored in accordance with Bison's Procedures (**Appendix E**) and Bison's Wetland Restoration Plan (**Appendix U**). The trench will be filled with excavated material, as close as possible to preconstruction contours, and will be designed to not affect the surface hydrology. A permanent slope breaker will be installed across the Construction ROW at the base of slopes greater than 5 percent where the base of the slope is less than 50 feet from any wetland, or as needed to prevent sediment transport into the wetland. No fertilizer, lime or mulch will be distributed without the express consent of BLM.

### *Waterbodies*

Waterbody crossings will be restored in accordance with Bison's Procedures. The trench will be filled with excavated material as close as possible to preconstruction contours. Bison will utilize the double-ditching technique to separate the top one foot of stream bottom substrate from deeper soil layers over the trench line for all waterbodies crossed by the Project, including coldwater fisheries. The original layers will be reconstructed by replacing deeper substrate first. Waterbody banks will be stabilized and temporary sediment barriers installed within 24 hours of completing in-stream construction activities. For waterbodies

crossed using a dry crossing technique, the streambed and bank stabilization will be completed before returning flow to the waterbody channel. Riprap will be limited to areas where flow conditions preclude effective vegetative stabilization techniques, such as seeding and erosion control fabric. A permanent slope breaker will be installed across the Construction ROW at the base of slopes greater than 5 percent that are less than 50 feet from the waterbody, or as needed to prevent sediment transport into the waterbody.

#### *Miscellaneous Areas*

The Project crosses numerous areas that are classified by the NRCS as "miscellaneous areas". These areas typically will not be vegetated, and revegetation will not be practical. Miscellaneous areas will be restored to preconstruction conditions to the extent practical. Stabilization measures to be employed may include geotextile fabric or other measures, as determined by the EI and/or Bison's reclamation specialist. No seeding or vegetative stabilization measures are proposed for these areas.

### 8.3 **Vegetation Disposal**

Sagebrush will be mowed as close as possible to the ground surface, and the resulting sage cuttings will be stockpiled with the segregated topsoil and spread out with the topsoil during reclamation activities. Mowing the sagebrush reduces the potential safety (tripping) hazard and fire hazard associated with other methods that do not result in complete, above-ground removal of sagebrush. Further, this method of retaining the sagebrush plant materials is expected to enhance restoration efforts. Note that a similar technique will be applied to the brush beating demonstration area in Carter County, Montana, in that sage brush will be mowed as close as possible to the ground surface with the cutting left in place; however, top soil will not be stripped except over the trench.

All other woody material (trees, shrubs, etc.) removed during clearing of the Construction ROW will be removed from the ROW and properly disposed or used for erosion control. Vegetative debris may be chipped, burned, or disposed of according to applicable regulations and landowner/land-manager agreement. Burning, if used, will be conducted in accordance with state and local burn permits and regulations. Burning will be performed in a manner to minimize fire hazards and prevent heat damage to surrounding vegetation. Disposal of materials taken off-site will be done at commercial facilities or at other locations approved by the appropriate regulating agencies. Due to the very limited amount of forested land crossed by the Project, very few trees are expected to be removed during the Project.

### 8.4 **Revegetation**

#### *Upland Areas*

After sub-soil decompaction procedures are complete (as described in Section 6.3.8), topsoil re-spreading will be performed by wide track D-6 dozer or equivalent over the areas along the contours. After the topsoil is in place, and on slopes greater than 15 percent, the D6 dozer will travel up and down the fall-line (a line perpendicular to an elevation contour) such that the tracks leave a dimpling effect that will produce a slightly roughened surface that approximates the pre-construction topography. This roughened surface provides desirable micro-topography, including depressions and mounds, which provide a better substrate for seed application and growth. In cases where the soil surface must be smoothed, it will be completed in a fashion that will minimize compaction. In general, areas with slopes of 15 percent or less will be seeded using drill seeding methods, and all other areas will be seeded using broadcast methods.

Areas will be seeded in accordance with written recommendations for seed mixes, rates, and dates obtained from the NRCS and approved by the BLM. If seeding cannot be completed within the requested dates, appropriate temporary erosion control measures will be installed per Bison's Plan and Reclamation Plan, and the seeding of permanent vegetation will be performed at the beginning of the next recommended seeding season. All seeding will be completed using Pure Live Seed within 12 months of the seed testing. All legume seed will be treated with an inoculant specific to the species, using the manufacturer's recommended rate of inoculant appropriate for the seeding method (broadcast, drill, or hydroseeding).

Broadcast or hydroseeding at double the recommended seeding rates will be used in lieu of drilling, if necessary and appropriate and approved by the BLM. Where seed is broadcast, the seedbed will be firmed with a cultipacker or roller after seeding. In rocky soils or where site conditions may limit the effectiveness of this equipment, other alternatives may be appropriate (e.g., use of a chain drag) to lightly cover seed after application, as approved by the EI. Please refer to Bison's Reclamation Plan (**Appendix S**) for additional details.

Badlands, rock outcrops, and, to a minor extent, blown-out land, alluvial land, gullied land, slickspots, and water and channel areas comprise land that does not currently support vegetation. Revegetation of these areas will not be practical, and Bison does not propose to apply seed to these areas. These areas will be physically stabilized as necessary, and will be restored to their preconstruction conditions to the extent practical. Please refer to Bison's Reclamation Plan (**Appendix S**) for additional details.

#### *Wetland Areas*

Wetland areas will be restored in accordance with Bison's Wetland Restoration Plan (**Appendix U**) and Bison's Procedures (**Appendix E**). The Project-specific Wetland Restoration Plan includes measures for re-establishing herbaceous and/or woody species, controlling the invasion and spread of undesirable exotic species, and monitoring the success of the revegetation and weed control efforts. The plan will also ensure that all disturbed areas are successfully revegetated. On BLM lands in Montana, the Construction ROW will be temporarily revegetated with annual ryegrass at a rate of 40 pounds/acre (unless standing water is present) and will be allowed to naturally revegetate. On BLM lands in Wyoming, impacted wetlands will be reseeded with the BLM-provided seed mix provided in Bison's Wetland Restoration Plan (**Appendix U**). No wetlands will be affected by the Project on BLM lands in North Dakota. No fertilizer, lime, or mulch will be applied in any wetland areas unless required in writing by the BLM.

#### *Waterbodies and Riparian Areas*

Stream banks and riparian areas along the Project route will be revegetated using approved seed mixes specified in Bison's Reclamation Plan (**Appendix S**) or by the BLM. Riparian areas on BLM lands in Wyoming and North Dakota that are currently grass-forb dominated will be sown with an appropriate grass-forb mix. Those that are scrub-shrub will be seeded with an appropriate grass-forb-shrub mix. Riparian areas on BLM lands in Montana will be sown with the appropriate seed mix specified by the BLM Miles City Field Office. No fertilizer, lime, or mulch will be applied near any waterbody unless required in writing by the BLM.

### 8.5 Access Roads

As discussed above in Section 1.4.1, twenty temporary access roads will provide limited access to the ROW during construction, and three "permanent" access roads will be utilized during operations. The access roads on BLM lands are provided in **Table 8-2**.

All of the temporary and permanent access roads currently exist, ranging in quality from "two-tracks" to "graveled – limited use when wet". In general, access roads will be improved only as necessary to make them suitable for construction traffic and only with BLM approval. Access roads in the MCFO and NDFO areas will be improved using standard BLM road construction guidance, including *BLM Roads Manual 9113*, *BLM Manual Handbook H-9113-1 (Guidelines for Determination of Curve Widening)*, *BLM Manual 9112 (Bridges and Major Culverts)*, and the *Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, Fourth Edition-2007 (Gold Book)*. Following construction, all temporary access roads that were improved will be restored to their pre-construction conditions/size/location, unless the BLM requests otherwise.

Bison's Plan (**Appendix D**) and Bison's Reclamation Plan (**Appendix S**) require Bison to restore all areas used by the Project, including access roads, as close as possible to their pre-construction condition. Bison has or will collect videographic and photographic documentation of the pre-construction conditions of all non-asphalt-surfaced (and some asphalt-surfaced) roads to be used during the Project. Upon completion of

the Project, Bison's contractor will restore all roads in accordance with Bison's Plan and Reclamation Plan to their pre-construction condition or better, using the videographic and photographic documentation as a reference. After all roads have been restored, FERC/BLM monitors will inspect the roads to verify that road restoration has been completed satisfactorily.

Many roads on BLM lands that Bison proposes to use during the Project may be already covered under another user's BLM ROW Grant or TUP. Bison will identify all other authorized users of any roads on BLM lands and make Bison's road use plans known to these authorized users of the road. Bison will provide BLM's Authorized Officer (AO), within 30 days from the date of the grant, with the names and addresses of all parties notified, dates of notification, and method of notification. Failure of the holder to share proportionate maintenance costs on the common use access road in dollars, equipment, materials, or manpower with other authorized users may be adequate grounds to terminate the right-of-way grant. The determination as to whether this has occurred and the decision to terminate will rest with the AO. Bison will provide BLM's AO with copies of any maintenance agreement entered into, if requested.

#### *Temporary Access Roads - Construction*

Eight temporary access roads, located partially or wholly on BLM land, are proposed for improvement during the Project. In general, road improvements proposed include grading, limited to one pass of a 16-foot bulldozer blade, and gravel, as needed (please refer to **Table 8-2**). At the specific request of BLM Buffalo FO, a guardrail will be constructed at a sharp curve located on access road #CM-26. The guardrail will be constructed prior to Bison's construction use of the road and will be removed upon completion of construction. Also at the request of BLM Buffalo FO, approximately four inches of gravel will be applied to access road CM-94. Bison proposes to remove the gravel on completion of construction of the Project, unless specifically requested otherwise by BLM. Bison will request authorization for use of temporary access roads in the TUP.

In some cases, Bison's construction contractor may place wooden mats in wet or muddy sections of roads to reduce rutting and allow the safe use of these roads. Mats will be removed on completion, and the roads will be restored, as discussed in this Section. Bison understands that written permission from BLM will not be required prior to use of these mats, but that notification of the FERC/BLM monitor may be required. Any additional road improvements needed, but not proposed in this POD, will be discussed with the FERC/BLM monitor, and appropriate permission/authorization will be obtained before any such improvements are completed.

A listing of the access roads on BLM land, providing the current status of each proposed access road and the recommended improvements to be made to certain proposed access roads, is provided in **Table 8-2**.

#### *Permanent Access Roads - Operations*

Two of the temporary access roads (CA-13-1 and CA-28) in Carter County, Montana, will also be used during operation of the pipeline. Bison will request authorization for use of these roads in the BLM ROW Grant. These "permanent" access roads provide access to MLVs. In addition, one existing road that crosses BLM land in North Dakota will be used to provide access to a MLV during pipeline operation. This road will not be used during construction. This road currently provides access to a well pad. Bison will negotiate an agreement to use this road with the operator of this well, in addition to the BLM. Since the well pad is still located several hundred feet from the MLV, Bison proposes to park vehicles at the well pad site and traverse the remainder of the distance to the MLV across BLM land on foot. In the event that future developments require construction of a road across this currently unimproved land, Bison will consult with the BLM to obtain the necessary authorization and approvals.

#### *County Roads*

Prior to use of any "public" roads, including county, state, or federal highways, Bison will obtain written permission from the relevant agency. Generally speaking, written permission will be obtained by Bison's construction contractor, and the agreement will be held between the relevant agency and Bison's

construction contractor. Each written agreement will require Bison's construction contractor, upon completion of use of the road, to repair/restore the road to its pre-construction condition, or better. In most cases, the written agreement will include posting a restoration bond that would provide sufficient funds for the agency to complete the road restoration, if necessary.

Six roads that are County roads that cross BLM lands were identified by BLM's Miles City FO as roads that will require BLM authorization prior to use for the portions of these roads on BLM lands. These public roads were not previously identified as access roads for the Project. These roads are listed above in **Table 1-4**. In accordance with BLM requests, Bison will request authorization from BLM to use these road segments through a TUP. At this time, no improvements are proposed for these roads. In the event that improvements are subsequently determined to be necessary, Bison will consult with the BLM to obtain the necessary authorization and approvals. Bison anticipates that no biological or heritage surveys would be required for any of these roads that are currently crowned and ditched.

<b>Table 8-2 - Access Roads on BLM lands with Land Impacts, Land Use and Improvements</b>								
Data contained within this table are based on the REV Lv18 centerline shapefile issued on 2/12/2010								
Access Roads	State	County	MP	Length on BLM Land (ft)	Acres on BLM Land	Current Landuse <sup>a</sup>	Current Condition <sup>b</sup>	Planned Improvements <sup>c</sup>
<b>Temporary Access Roads</b>								
#CM-26	WY	Campbell	14.73	479.88	0.28	L-4	C-4	None <sup>d</sup>
#CM-30-1	WY	Campbell	19.23	1479.87	0.85	L-1, 4	C-4	None
#CM-96-1	WY	Campbell	19.94	1428.98	0.82	L-1	C-6, C-4	None
#CM-94	WY	Campbell	21.76	3936.18	2.26	L-1, L-4	C-4, C-5	I-2, I-3
#CM-30	WY	Campbell	21.76	1851.24	1.06	L-1, 4	C-3	None
#CM-88	WY	Campbell	31.81	419.96	0.24	L-1, 4	C-4 OR C-5	None
#CM-88-1	WY	Campbell	31.66	132.80	0.08	L-1, 4	C-4 OR C-5	None
<b>Wyoming Total</b>				<b>9728.91</b>	<b>5.58</b>			
#PR-01	MT	Powder River	79.41	1584.13	0.91	L-2	C-4 OR C-5	I-3
#CA-29	MT	Carter	91.06	1236.40	0.71	L-1	C-5	None
#CA-02-1	MT	Carter	96.12	8386.35	4.83	L-1	C-6	I-3
#CA-02-2	MT	Carter	96.85	478.02	0.27	L-1	C-6	I-2, I-3
#CA-10	MT	Carter	120.30	1999.86	1.15	L-1	C-6	I-2, I-3, I-4
#CA-12	MT	Carter	127.12	15025.21	8.62	L-1	C-6	I-3
#CA-12-2	MT	Carter	133.57	13856.49	7.96	L-1	C-5	I-3
<b>Montana Total</b>				<b>42566.46</b>	<b>24.45</b>			
#BO-01	ND	Bowman	178.14	6706.57	3.83	L-1	C-6	I-2
#BO-02	ND	Bowman	179.12	4196.53	2.41	L-4	C-4	None
#BO-36	ND	Bowman	181.68	2436.13	1.40	L-4	C-3	None
<b>North Dakota Total</b>				<b>13339.23</b>	<b>7.64</b>			
<b>Temporary Access Roads - Project Total</b>				<b>65634.6</b>	<b>37.67</b>			
<b>Permanent Access Roads</b>								
#CA-28 (Hopkins Road)	MT	Carter	123.27	15256.84	8.76	L-1	C-5	I-3
#CA-13-1 (Lone Tree Road)	MT	Carter	141.63	5076.52	2.92	L-1	C-6	I-2, I-3
#BO-27-1	ND	Bowman	179.87	1107.92	0.63	L-1,4	C-3	None <sup>e</sup>
<b>Permanent Access Roads - Project Total</b>				<b>21441.28</b>	<b>12.31</b>			
<b>All Access Roads - Project Total</b>				<b>87075.88</b>	<b>49.98</b>			
<sup>a</sup> L-1=Open Pasture/Range Land, L-2=Hay Meadows, L-3=ROW Crop Field, L-4=Industrial Use (i.e. methane, gas, oil field), L-5=Timbered								
<sup>b</sup> C-1=Paved 4 Lane, C-2=Paved 2 Lane, C-3=Graveled all-weather 2 land, C-4=Graveled limited-use when wet, C-5=Graded soil road, C-6=Unimproved 2 track/field road								
<sup>c</sup> I-1=Widening, only if necessary and will be limited to 16-foot dozer blade width, I-2=Grade, limited to one pass of a 16-foot dozer blade width, I-3=Gravel, will only be used if necessary.								
<sup>d</sup> BLM has requested that Bison install a guardrail on this road. The guardrail will be installed in accordance with BLM specifications and will be removed when construction of the Project is complete.								
<sup>e</sup> Approximately 750 feet of this road is currently extant and provides access to a well pad. Bison proposes to park vehicles at this well pad and walk the remaining 350 feet to the ROW. This road/access will not be used during construction, but will be used to provide access to a MLV during operations.								

## 9.0 PIPELINE OPERATION AND MAINTENANCE FOR THE BISON PIPELINE PROJECT

### 9.1 General Operations and Maintenance

The Project will transport natural gas 24 hours per day, 365 days per year. It will be operated and maintained in a manner that meets or exceeds the minimum federal safety requirements of 49 CFR Part 192. The operating policies and procedures for the facilities associated with the Project will be reviewed once each calendar year by company personnel and periodically by the DOT. All operating personnel will be trained to perform their activities in accordance with these policies and procedures. These policies provide specific directions during preventive maintenance and monitoring of facilities, as well as emergency procedures that will be followed in the event of an accident or natural catastrophe. Bison will develop an Integrity Management Program (IMP) for the operation and maintenance of the Project prior to commencing operations. The IMP will be developed prior to operation.

Operational activity on the pipeline will be limited primarily to required maintenance of the Permanent ROW (Section 7.7) and inspection, repair, and cleaning of the pipeline itself. Periodic aerial and ground inspections by pipeline personnel will identify: soil erosion that may expose the pipe; dead vegetation that may indicate a leak in the line; conditions of the vegetative cover and erosion control measures; unauthorized encroachment on the Permanent ROW, such as building and other substantial structures; and other conditions that could present a safety hazard or require preventative maintenance or repairs. Also, the pipeline CPS will be monitored and inspected periodically to ensure proper and adequate corrosion protection. Appropriate responses to conditions observed during inspection will be taken as necessary. Personnel will perform routine checks of the above ground facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment and facility grounds. Corrective actions would be taken for any identified problem. No facilities are proposed for abandonment or removal at this time. No industrial wastes and toxic substances will be stored on the Permanent ROW.

No additional infrastructure (pipes, pumps, valves, meters, runways, heliports, etc.) is expected to be required or installed during routine inspection/maintenance of the Project. All maintenance is expected to be conducted entirely within the permanent ROW, typically during daylight hours. If additional infrastructure is required, the POD will be revised as necessary.

### 9.2 Training and Emergency Management Plan

Periodic training sessions and review of operating and emergency procedures will be conducted for affected operations employees. This training includes safe operation of MLVs and equipment; safe operation of aboveground facilities including the compressor station and the meter stations; hazardous material handling procedures; public liaison programs; and general operating procedures. The Project facilities will be operated and maintained in accordance with these procedures. 49 CFR Part 192.605 requires each pipeline operator to establish an operation and maintenance plan and an emergency management plan that include procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the emergency plan include procedures for:

- Reporting, identifying, and classifying emergency events (i.e., gas leakage, fires, explosions, and natural disasters);
- Establishing and maintaining communication with local fire, police, and public officials and coordinating emergency response;
- Prompt and effective response to emergencies;
- Ensuring that properly trained personnel, as well as necessary equipment, tools, and materials are available at the scene of an emergency;
- Protecting lives first and then property;

- Eliminating actual or potential hazard to life or property; and
- Emergency shutdown of system and safe restoration of service.

### 9.3 Pipeline Inspections, Marking and Surveillance

In addition, pipeline operating regulations contained in Subparts L and M, 49 CFR Part 192 require operators to establish public awareness and damage prevention programs and to perform regular pipeline patrols, leak surveys, pipeline marking and other surveillance activities to promote pipeline safety. Aerial and on-the-ground patrols of all facilities will be performed on a regular-basis in addition to scheduled preventive maintenance. Any unusual situation or condition observed will be reported and investigated immediately. Leak detection surveys of the pipeline facilities will be performed according to 49 CFR Part 192. These surveys are instrumental in the early detection of leaks and can reduce the likelihood of pipeline failure. No landings strips or heliports will be required as part of this Project.

The outside of the steel pipe will be coated with fusion bonded epoxy coating, while joints will be coated with compatible materials. CPS will be installed with monitoring points at less than one mile intervals. CPS facilities such as ground beds and rectifiers will be placed within the Permanent ROW and at MLV, meter stations and the compressor station, as needed. The CPS function is to work in conjunction with the pipe coating to minimize the risk of corrosion. Routine inspections and cathodic protection surveys will be performed to identify and correct potential problems with the cathodic protection system.

In-line inspection of the pipeline will be performed periodically using computerized electromechanical devices that travel inside the pipeline checking for deformities, any pipe-wall metal loss or other factors that could impact the integrity of the pipeline. If potential problems are identified, then necessary repairs will be made to the affected pipe.

The pipeline route will be marked clearly with identification that includes safety warnings and telephone numbers to report suspected problems. In addition, Bison will be a member of the "One Call" and related pre-excitation notification organizations in the states in which it will operate. Through "One Call," contractors, highway workers, farmers, and anyone digging along the Permanent ROW will have the ability to call a single phone number to have all underground facilities located prior to excavation activities. If the Project facilities are located in the area of proposed excavation, the company will identify the location of the facilities in accordance with the applicable "One Call" program.

The toughness and strength of the X70 steel pipe and its metallurgical properties will protect against loss of integrity due to dents and other external damage. In addition, 49 CFR Part 192 requires the proper installation of pipeline markers and signage, as well as a Permanent ROW monitoring program, thereby mitigating the possibility of third-party and other outside force damage to the pipeline. Activities near the Permanent ROW and adjoining facilities will be monitored, recorded, and investigated in accordance with the Permanent ROW monitoring program.

### 9.4 Vegetation Maintenance

Bison has agreed to limit vegetative maintenance along the right-of-way to only that required for compliance with agency obligations. Except in an emergency, Bison will not perform any maintenance, including mowing, without notifying FERC of its intent and also making a reasonable attempt to provide the owner/tenant with prior notice. If and when areas need to be mowed or trees need to be cut for these surveys, FERC will be notified before such mowing or tree cutting takes place.

### 9.5 Hydrostatic Testing during operation

Hydrostatic testing is discussed in the Bison's Hydrostatic Test Plan for the Project and is provided in **Appendix I**. This plan may be updated during operation to address site-specific testing.

## 9.6 Safety During Operation

The Project will be designed, constructed, operated, and maintained in accordance with standards which meet or exceed the DOT Minimum Federal Safety Standards (49 CFR Part 192). The DOT regulations are intended to ensure adequate protection for the public from natural gas pipeline failures. Material selection and qualification requirements, design, construction, testing, operating, and maintenance requirements, including requirements that protect the pipeline from corrosion, are specified in 49 CFR Part 192. These minimum safety standards, together with recent advances in pipeline manufacture, construction and inspection techniques, and more detailed and comprehensive integrity management programs minimize the potential for natural gas transmission pipeline system failure.

The Project will be operated and maintained in a manner that meets or exceeds the requirements of 49 CFR Part 192. The operating policies and procedures for the facilities associated with the Project will be reviewed once each calendar year by company personnel and periodically by the DOT. All operating personnel will be trained to perform their activities in accordance with these policies and procedures. These policies provide specific directions during preventive maintenance and monitoring of facilities, as well as emergency procedures that will be followed in the event of an accident or natural catastrophe.

Periodic training sessions and review of operating and emergency procedures will be conducted for affected operations employees. This training includes safe operation of MLVs and equipment; safe operation of aboveground facilities including the compressor station and the meter stations; hazardous material handling procedures; public liaison programs; and general operating procedures. The Project facilities will be operated and maintained in accordance with these procedures. 49 CFR Part 192.605 requires each pipeline operator to establish an operation and maintenance plan and an emergency management plan that include procedures to minimize the hazards in a natural gas pipeline emergency.

In addition, pipeline operating regulations contained in Subparts L and M, 49 CFR Part 192 require operators to establish public awareness and damage prevention programs and to perform regular pipeline patrols, leak surveys, pipeline marking and other surveillance activities to promote pipeline safety. Aerial and on-the-ground patrols of all facilities will be performed in addition to scheduled preventive maintenance. Any unusual situation or condition observed will be reported and investigated immediately. Leak detection surveys of the pipeline facilities will be performed according to 49 CFR Part 192. These surveys are instrumental in the early detection of leaks and can reduce the likelihood of pipeline failure.

The Hettinger Compressor Station will be designed, constructed, and operated to meet or exceed applicable specifications set forth in 49 CFR Part 192. The Hettinger Compressor Station will be built with gas and fire detection equipment inside the compressor buildings that will have the ability to automatically shut down the compressor station, close the valves isolating the station from the pipeline, and vent the gas from the compressor station. Individual pieces of equipment such as the compressor will be equipped with sensors and control systems that will shut down the equipment if necessary. Additionally, 49 CFR Part 192.731 through Part 192.736 establish standards for inspection and testing of relief valves and remote shutdown devices, storage of combustible materials and gas monitoring and alarm systems in the compressor station.

## 9.7 Waste Management

All wastes generated by the Project during operation (general debris, septic, vegetation, and hazardous wastes) will be appropriately collected, stored, and disposed in accordance with local, state, and federal regulations.

## 9.8 Fire Control

Bison will require that Project contractors comply with all federal, state, county and local fire regulations and Bison's Emergency Management Plan (to be provided prior to construction) and Bison's Wildfire Management Plan. The Bison Emergency Management Plan will be prepared to outline the responsibilities of Bison for prevention and suppression of fires and to define minimum fire prevention and suppression measures that will be used during construction. The Bison Emergency Management Plan will define the

responsibilities of Project personnel, and provide: a list of fire equipment that must be maintained (sufficient equipment to handle any fire emergency); notification procedures to be followed in the event of a fire; precautions that must be followed during construction to minimize the fire risk; and a procedure to be followed in the event of extreme fire conditions. In addition, the Bison Emergency Management Plan will discuss required fire training for all construction and inspection personnel, and will require daily fire compliance monitoring of the Project Area.

The minimum requirements provided in this Bison Emergency Management Plan will be included in all construction contracts, and prior to construction, contractors will be required to develop a fire control plan specific to the Project that details fire control procedures, roles and responsibilities, and staffing. The contractor's plan will meet or exceed the requirements outlined in Bison's Emergency Management Plan and will provide a list of potential water sources with sufficient quantities of water.

### 9.9 Contingency Planning

An Emergency Response Plan will be developed prior to operation as noted above under Section 9.2. The Emergency Response Plan will include all applicable emergency contact information, event reporting, and response procedures for use during operations of the pipeline.

## 10.0 TERMINATION AND RESTORATION

The nominal life of a pipeline generally is considered to be 50 years, although properly monitored and maintained pipelines can be operated safely for more than 50 years. Most pipelines are removed from service (abandoned) as a result of commercial conditions related to natural gas supply and demand, rather than deterioration of the physical facilities. In accordance with the Mineral Leasing Act of 1920, the expected duration of a BLM ROW Grant will be 30 years. The BLM ROW Grant would be extended through consultation with the BLM

### 10.1 Removal of Structures

If conditions develop that require Bison to abandon the Bison Pipeline, Bison will apply to the FERC and BLM for permission to remove aboveground structures and leave the pipeline in the ground. Abandonment of aboveground structures by removal presently is authorized by the FERC through its blanket certificate, or authorization may be acquired through an NGA Section 7(b) application. Both types of authorizations require consultations with the appropriate agencies and an environmental evaluation of the impacts of the abandonment on cultural resources, threatened and endangered species, and other resources. It is assumed that similar authorizations will be required if and when the Bison pipeline and its aboveground facilities are abandoned in the future.

Aboveground structures will be removed by severing the connection with the pipeline below grade. Sites for aboveground structures will be restored to their original condition after the structures are removed. Restoration methods will be developed in consultation with the BLM (BLM's Gold Book), NRCS, state, and other appropriate agencies and reclamation experts.

### 10.2 Abandoned Pipeline

Upon abandonment, the inside of the pipeline may be cleaned with brushes and scrapers, and the pipeline filled with water or inert gas, capped, and left in the ground. The pipeline will be abandoned in place, because, removal of a large-diameter pipeline would incur environmental impacts comparable to the construction of the pipeline, and abandoning the pipeline in place will avoid these impacts. The only impacts from abandonment of the pipeline in place will be temporary and will be at the launcher sites for the brushes and scrapers, the sites for the water or inert gas injection, and the pit sites for capping the pipeline (some of these sites will coincide). Other appurtenances in the Project including MLVs, CPS and test stations, signage, meter stations, and the compressor station will also be removed and properly disposed.

Only two MLVs, CPS and test station, and signage are located on BLM land. Removal of these appurtenances will have minimal environmental impact.

### 10.3 **Obliteration of Roads**

No new access roads will be built to access the pipeline ROW on BLM land or any other land along the route. Hence, Bison does not plan to obliterate any roads upon abandonment of the pipeline. To the extent it is responsible for the deterioration of the roads it uses on BLM land and on other lands, Bison will maintain the roads it uses, such that their condition at the time of abandonment of the pipeline will be similar to the condition of the roads just prior to construction of the pipeline. Any road maintenance will be performed in consultation with BLM and the other landowners.

### 10.4 **Stabilization and Re-Vegetation of Disturbed Areas**

Stabilization and revegetation of disturbed areas associated with the abandonment activities will be performed according to Bison's Plan, Procedures and Reclamation Plan (**Appendices D, E, and S**, respectively) or according to the equivalent or more advanced standards the FERC and BLM have adopted by the time abandonment occurs.

### 10.5 **Hazardous Materials and Waste Management**

All fuels, hazardous materials, and other chemicals will be removed from the Project site and properly disposed. Solid wastes generated during decommissioning will be accumulated, transported, and properly disposed in permitted off-site facilities in accordance with state and local requirements.