



**Office of  
Energy Projects**

February 2018

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WBI Energy Transmission, Inc.

Docket No. CP17-469-000

# **Billy Creek Storage Field Abandonment Project**

## **Environmental Assessment**

Washington, DC 20426

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## TECHNICAL ACRONYMS AND ABBREVIATIONS

BCC	Birds of Conservation Concern
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
Commission	Federal Energy Regulatory Commission
Compressor Station	Billy Creek Compressor Station
dBA	decibels on the A-weighted scale
DOT	Department of Transportation
EA	environmental assessment
EI	environmental inspector
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FERC	Federal Energy Regulatory Commission
g	gravity
GHG	greenhouse gas
GWP	global warming potential
HAP	hazardous air pollutant
HUC	Hydrologic Unit Code
km	kilometers
L <sub>dn</sub>	day-night sound level
L <sub>eq</sub>	24-hour equivalent sound level
MBTA	Migratory Bird Treaty Act
MOU	Memorandum of Understanding
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGA	Natural Gas Act
NOI	<i>Notice of Intent to Prepare an Environmental Assessment for the Proposed Billy Creek Storage Field Abandonment Project and Request for Comments on Environmental Issues</i>
NO <sub>x</sub>	nitrogen oxides
NRCS	Natural Resources Conservation Service
NSA	noise sensitive area
NSPS	New Source Performance Standards
OEP	Office of Energy Projects
Plan	FERC's <i>Upland Erosion Control, Revegetation, and Maintenance Plan</i>

PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
Procedures	FERC's <i>Wetland and Waterbody Construction and Mitigation Procedures</i>
Project	Billy Creek Storage Field Abandonment Project
psi	pounds per square inch
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
Storage Field	Billy Creek Storage Field
SWPP Plan	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
VOC	volatile organic compounds
WOGCC	Wyoming Oil and Gas Conservation Commission
WYDEQ	Wyoming Department of Environmental Quality
WYGFD	Wyoming Fish and Game Department

## **A. PROPOSED ACTION**

The staff of the Federal Energy Regulatory Commission (Commission or FERC) has prepared this environmental assessment (EA) to assess the environmental impacts of the Billy Creek Storage Field Abandonment Project (Project) and related facilities proposed by WBI Energy Transmission, Inc. (WBI). We<sup>1</sup> prepared this EA in compliance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations for implementing NEPA (Title 40 of the Code of Federal Regulations [CFR], Parts 1500-1508 [40 CFR 1500-1508]), and the Commission's implementing regulations.<sup>2</sup>

### **1. INTRODUCTION**

On June 30, 2017, WBI filed an application with the Commission in Docket Number CP17-469-000 under Sections 7(b) and 7(c) of the Natural Gas Act (NGA) seeking authorization to abandon the Billy Creek Storage Field (Storage Field), the Billy Creek Compressor Station (Compressor Station), and related facilities; recover and sell the Storage Field's cushion gas; and obtain a Certificate of Public Convenience and Necessity to construct, install, and modify certain facilities to facilitate the withdrawal of the cushion gas. The Storage Field is in Johnson County, Wyoming. WBI proposes to withdraw an estimated 2.3 billion cubic feet of cushion gas prior to abandonment of the Storage Field by any one or a combination of the following options:

- 1) utilize and/or modify existing storage facilities, including the existing Compressor Station (Existing Option);
- 2) install a temporary 200 horsepower (or less) replacement compressor unit (Compressor Option); and/or
- 3) drill one new natural gas recovery well in one of two locations (Well Option).

Following cushion gas withdrawal, WBI would abandon the pipeline and aboveground facilities in-place and by removal, including the additional compressor unit and/or recovery well listed in the options above. With the exception of the Compressor Station, WBI would reclaim all disturbed areas after Project abandonment.

FERC is the lead federal agency for the Project and for the preparation of this EA. Our principal purposes in preparing this EA are to:

- identify and assess potential impacts on the natural and human environment that could result from implementation of the proposed action;
- identify and recommend reasonable alternatives;

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<sup>1</sup> "We," "us," and "our" refer to the environmental staff of the Commission's Office of Energy Projects.

<sup>2</sup> See [18 CFR 380](#).

- identify specific mitigation measures, as necessary, to avoid or minimize Project-related environmental impacts; and
- facilitate public involvement in the environmental review process.

The EA is an integral part of the Commission's decision-making process in determining whether to authorize WBI's proposal.

## **2. PROJECT PURPOSE AND NEED**

Section 7(b) of the NGA specifies that no natural gas company shall abandon any portion of its facilities subject to the Commission's jurisdiction without the Commission first finding that the abandonment will not negatively affect the present or future public convenience and necessity. Under section 7(c) of the NGA, the Commission determines whether interstate natural gas transportation facilities are in the public convenience and necessity and, if so, grants a Certificate to construct and operate them. The Commission bases its decisions on technical competence, financing, rates, market demand, gas supply, environmental impact, long-term feasibility, and other issues concerning a proposed project.

The primary purpose of WBI's Project is to abandon the Storage Field, and recover its cushion gas. WBI states that the Storage Field has become unreliable in recent years due to water encroachment that has rendered it incapable of providing firm natural gas storage service. WBI further states that the firm transportation storage previously provided by the Storage Field is now provided by another WBI storage field.

## **3. SCOPE OF THIS ENVIRONMENTAL ASSESSMENT**

The topics addressed in this EA include geology, soils, groundwater, surface waters, wetlands, wildlife, vegetation, special status species, land use, visual impacts, scenic places, cultural resources, air quality, noise, reliability and safety, cumulative impacts, and alternatives. This EA describes the affected environment as it currently exists and the environmental consequences of the Project, and compares the Project's potential impact with that of various alternatives. This EA also presents our recommended mitigation measures.

As the lead federal agency for the Project, FERC is required to comply with section 7 of the Endangered Species Act, as amended (ESA) and section 106 of the National Historic Preservation Act. These statutes have been considered in the preparation of this EA. In addition to FERC, other federal, state, and local agencies may use this EA in approving or issuing permits for all or part of the proposed Project. Permits, approvals, and consultations for the Project are discussed in section A.10 of this EA.

#### **4. PUBLIC REVIEW AND COMMENT**

On August 17, 2017, the Commission issued a *Notice of Intent to Prepare an Environmental Assessment for the Proposed Billy Creek Storage Field Abandonment Project, and Request for Comments on Environmental Issues* (NOI). The NOI was mailed to 81 entities, including affected landowners; federal, state, and local government agencies; elected officials; Native American tribes; and local libraries.

Written comments were requested from the public on specific concerns about the proposed Project or issues that should be considered during preparation of the EA. Our NOI included an invitation for other federal agencies to participate as cooperating agencies. No federal agencies elected to participate.

In response to the NOI, the Commission received comments from the Wyoming Department of Environmental Quality (WYDEQ) and the Wyoming Game and Fish Department (WYGFD). The primary issues raised by commenters are impacts on water quality and surface waterbodies, restoration and the development of a reclamation plan, invasive species prevention and mitigation, and applicable permits. All comments received from the WYDEQ and the WYGFD are addressed in sections B.3 and B.4 of this EA.

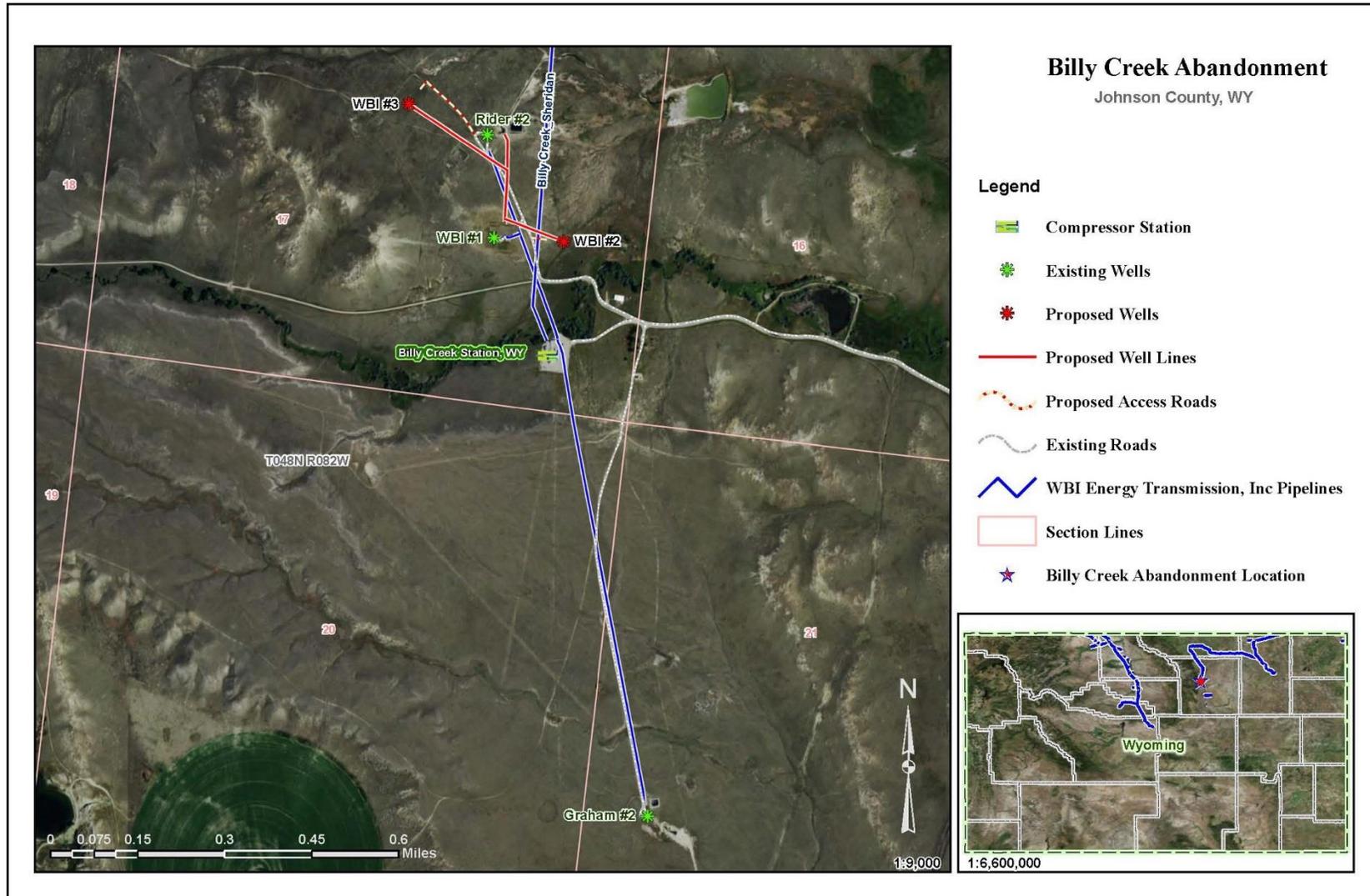
#### **5. PROPOSED FACILITIES**

The initial drawdown and the Existing Option would primarily use existing Storage Field facilities, including three existing Storage Field wells (WBI #1, Rider #2, and Graham #2) and the existing compressor unit at the Compressor Station. With the exception of minor piping modifications at the Compressor Station, if necessary, initial drawdown and the Existing Option do not require the use of new facilities or equipment. The Compressor Option would require the installation of a temporary 200 horsepower (or less) compressor unit within the existing property boundary of the Compressor Station. The Well Option involves the installation of one new recovery well in one of two proposed locations (WBI #2 or WBI #3) and would result in new facilities on previously undisturbed land. In addition to a new recovery well, WBI would install appurtenant facilities, including a well pad, access road, natural gas pipeline, and produced water line. Table 1 below and Sections A.6 and A.8 of this EA provide additional detail on the proposed options.

Following the completion of gas withdrawal, the majority of Storage Field equipment and facilities would be abandoned in place or by removal. Table 1 below provides a detailed summary of existing and proposed Project facilities, and a description of the proposed action for each facility (i.e., abandonment or remain in place). Project figures are provided following this section.

<b>Table 1 Existing and Proposed Project Facilities</b>	
<b>Existing Facilities</b>	<b>Proposed Action</b>
<b>Storage Field Facilities</b>	
3 storage wells (WBI #1, Rider #2, Graham #2)	downhole casing to be abandoned in place; aboveground equipment to be removed from site
two lined produced water evaporation pits	liner, fence, and bird nets to be removed from site and disposed of in a landfill; ponds to be filled in and reclaimed
two access roads	540 feet of Graham #2 access road to be restored; other access roads would remain 'as is' for landowner's use
underground natural gas pipelines and produced water lines	short portions of the 345 feet of both 4- and 2-inch-diameter pipeline between WBI #1 and separator/produced water pits to be removed; short portions of the 1,620-foot-long 8-inch-diameter pipe and 50 feet of the 2-inch-diameter pipe between Rider#2 and produced water pits would be removed with the remaining portions abandoned in place; and 5,950 feet of 4-inch-diameter well line at Graham #2 to be abandoned in place
two water tanks	removed from site
pipeline marker posts	removed from site
well rig anchors at each well site	aboveground portions of the well rig would be removed from site; belowground portions to be abandoned in place
<b>Compressor Station Facilities</b>	
office building, chromatograph building, auxiliary building, storage building, two meter buildings, odorant building/tank, fencing	remain in operation as office and storage space for local operations
transfer building; compressor units, appurtenant systems, in-station piping, headers and buildings; one meter buildings; storage tanks, headers	abandoned and removed from site
Temporary 200 horsepower (or less) compressor unit, if installed (Compressor Option)	abandoned and removed from site
<b>Proposed Facilities (Well Option, if installed)</b>	
WBI #2/WBI #3	following installation and cushion gas recovery, downhole casing to be abandoned in place; aboveground equipment to be removed from site
WBI #2/WBI #3 well pad, water pits, and access road	following installation and cushion gas recovery, abandonment by removal and restoration of impacted area
WBI #2/WBI #3 underground 4-inch-diameter natural gas pipelines (490 feet for WBI #2 or 958 feet of WBI #3)	following installation and cushion gas recovery, 100 feet to be removed; remaining portions to be abandoned in place
WBI #2/WBI #3 4-inch-diameter produced water lines (608 feet for WBI #2 or 1, 121 feet for WBI #3)	following installation and cushion gas recovery, abandoned in place

**Figure 1. Billy Creek Abandonment Overview Map**



## 6. ABANDONMENT, CONSTRUCTION, AND OPERATION PROCEDURES

The proposed facilities designated for construction would be designed, tested, operated, and maintained to conform with or exceed federal, state, and local requirements, including the U.S. Department of Transportation's (DOT) Minimum Safety Standards in 49 CFR 192, *Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*, and 18 CFR 380.15, *Siting and Maintenance Requirements*, if necessary. In addition, the abandonment would be completed in compliance with the Wyoming Oil and Gas Conservation Commission's (WOGCC) requirements for plugging and abandoning wells, natural gas pipelines, and production pits. These requirements include specifications for plugging wells, abandoning pipelines and produced water evaporations pits, notification requirements, job logs or cement verification reports, and reclamation timelines.

During Project construction, operation, and abandonment, WBI would implement the measures contained in the following plans, in addition to other federal, state, and local permits:

- FERC's *Upland Erosion Control, Revegetation, and Maintenance Plan* (Plan);<sup>3</sup>
- FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures);<sup>4</sup>
- WBI's *Spill Prevention, Control, and Countermeasures Plan* (SPCC Plan);
- WBI's *Stormwater Pollution Prevention Plan* (SWPP Plan);
- WBI's *Unanticipated Discovery Plan for Historic Properties and/or Human Remains*; and
- WBI's *Unanticipated Discovery of Contaminated Environmental Media Plan*.

FERC's Plan and Procedures are baseline construction and mitigation measures to minimize the potential environmental impacts of construction on upland areas, wetlands, and waterbodies. When WBI would conduct ground disturbing activities, it would assign an individual to perform the duties of environmental inspector (EI) to oversee and document environmental compliance and prepare FERC reports during the construction phase. All Project-related construction personnel would be informed of the EI's authority and would receive job-appropriate environmental training prior to construction.

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<sup>3</sup> The FERC Plan can be viewed on the FERC website at <http://www.ferc.gov/industries/gas/enviro/plan.pdf>.

<sup>4</sup> The FERC Procedures can be viewed on the FERC website at <https://www.ferc.gov/industries/gas/enviro/procedures.pdf>.

During the initial drawdown of the 2.3 billion cubic feet of cushion gas, WBI would withdraw gas by free-flow from the three existing wells (WBI #1, Rider #2, and Graham #2) into WBI's existing transmission line that is operated between 300-350 pounds per square inch (psi). The cushion gas is expected to free flow into the transmission line until the pressure in the Storage Field is 300 to 350 psi. WBI would perform the initial drawdown as close to normal withdrawal operations as possible, and does not anticipate major repairs, equipment replacement, or ground disturbance would be necessary. If necessary, WBI may install smaller diameter tubing or perform cleanout operations on the three existing wells. Once the cushion gas is no longer able to free flow into the transmission line, the Storage Field may be shut-in for an extended period of time for observation (up to approximately 120 days) to see if the Storage Field repressurizes. Based on the Storage Field's performance, the volume of cushion gas recovered, and the volume of water produced, WBI may decide to proceed with any one or combination of the following options below to recover additional cushion gas or to end recovery attempts and begin abandonment.

#### Existing Option

If the Existing Option were selected, WBI would utilize existing facilities at the Compressor Station within the Storage Field to withdraw the remaining cushion gas. No additional facilities would be required or installed. The Existing Option would utilize existing access roads and would not require expansion of the existing access road. Because the existing compressor unit was previously utilized only for injection purposes, WBI anticipates that minor modifications to station piping within the fenceline may be necessary to withdraw the remaining cushion gas. The existing compressor unit is capable of drawing down the Storage Field to approximately 75 psi. If the compressor unit is unable to effectively draw down the Storage Field to 75 psi, then WBI would implement the Compressor Option or Well Option.

#### Compressor Option

If the Compressor Option were selected, WBI would clear construction work areas of existing vegetation and grade, if necessary, to create level surfaces for a temporary 200 horsepower (or less) compressor unit. WBI would install the compressor unit on a gravel pad within the existing Compressor Station fenced-in boundary and would utilize existing piping. The natural gas-fired 200 horsepower temporary compressor unit would be capable of drawing down the Storage Field to approximately 25 to 75 psi. The existing compressor unit would be decommissioned and abandoned upon the installation of the temporary replacement unit. WBI would complete minor piping modifications during installation of the temporary compressor unit. The Compressor Option would utilize existing access roads and would not require expansion of existing access roads.

Following drawdown, the Storage Field and the existing and temporary compressor units would be abandoned by removal as outlined in table 1. WBI would

stabilize areas that were temporarily disturbed during construction; however, the existing industrial land within the compressor station site would remain industrial and would not be reclaimed. WBI would retain the Compressor Station site for use as a local field office.

### Well Option

WBI would implement the Well Option if there is little transport of natural gas between the northern and southern portion of the Storage Field or if the existing northern wells (WBI#1 and Rider #2) fail to flow. Prior to the commencement of any construction-related activities, survey crews would stake the limits of the construction work areas and access road. WBI would avoid sensitive areas by flagging or fencing the resource, as appropriate. WBI would contact the national “one-call” system to identify and mark buried utility lines prior to ground disturbance. Construction work areas would be cleared of existing vegetation and graded, as necessary, to create level surfaces for the movement of construction vehicles and to prepare the area for drilling. In accordance with the Plan and Procedures, temporary erosion and sediment control measures would be installed following initial ground disturbance.

WBI would drill an additional well in the northern portion of the field (WBI #2 or WBI #3), and install about 490 feet for WBI#2 or 958 feet for WBI#3 of 4-inch-diameter natural gas pipeline and approximately 608 feet for WBI #2 or 1,121 feet for WBI #3 of a 4-inch-diameter produced water pipeline that would empty into the existing produced water evaporation pit near the Rider #2 well. Existing facilities would be utilized to the extent possible. The proposed well (WBI #2 or WBI #3) would be drilled utilizing a fresh water mud system drilling method. In either of the proposed locations, a well pad, extra workspace, and a 20-foot-wide by 151-foot-long for WBI#2 or 20-foot-wide by 86-foot-long for WBI#3 access road would be built to connect the well pad to the existing access road. If WBI #3 well location were selected, portions of an existing two-track road would be improved and expanded for access to the well. WBI would install erosion and sediment control measures in accordance with the FERC Plan.

For both well locations, the proposed 4-inch-diameter natural gas pipeline and the proposed 4-inch-diameter water line would be collocated approximately two feet apart within the same 75-foot-wide construction right-of-way. The natural gas pipeline would be hydrostatically tested and water would be discharged in an approved upland area, in accordance with the FERC Procedures.

Following drawdown, the downhole piping, the majority of the underground natural gas pipeline (490 feet at WBI #2, and 958 feet at WBI #3), and all of the underground water lines (608 feet at WBI #2, and 1,121 feet at WBI#3) would be abandoned in place. All remaining well facilities (including the aboveground wellhead equipment, separator and measurement facilities) and 100 feet of 4-inch-diameter natural gas pipeline would be removed from the site (see table 1). The well would be abandoned

in accordance with WOGCC requirements, and the well site and access road would be reclaimed and restored to pre-construction conditions in accordance with the FERC Plan and Procedures.

## 7. STORAGE FIELD ABANDONMENT SCHEDULE

WBI would commence Project abandonment upon the receipt of all necessary permits and when ambient air temperatures within the Project area are consistently above freezing. WBI provided estimates of the duration of the various Project activities in table 2 below. If WBI completes only drawdown and abandonment activities, the Project is estimated to last approximately 10 months. However, if all three options were completed, the Project would last approximately 3 years.

<b>Activity</b>	<b>Duration</b>
Site prep for drawdown	30 days
Initial Drawdown	200 days
Storage Field Shut In	60 to 120 days
Existing Option	140 days
Compressor Option	180 days for design and installation plus withdrawal (unknown duration)
Well Option	240 days plus withdrawal (unknown duration)
Abandonment	60 days

## 8. LAND REQUIREMENTS

The Existing and Compressor Options would not require additional land and would be completed entirely within the existing right-of-way for the Storage Field.

The Well Option would require disturbance of either 3 acres for WBI #2 or 4.2 acres for WB #3, all of which would be restored to preconstruction conditions following abandonment. WBI #2's area of disturbance would include a 330-foot by 200-foot well pad, 330-foot by 50-foot additional workspace, and a 151-foot by 20-foot access road. In addition, a natural gas pipeline and produced water line would be constructed within a 490-foot-long by 75-foot-wide right-of-way.

WBI #3's area of disturbance would include a 330-foot by 200-foot well pad, 330-foot by 50-foot additional workspace, and an 86-foot by 20-foot access road. A 675-foot by 20-foot portion of an existing access road may also be utilized. In addition, a natural

gas pipeline and produced water line would be constructed within a 1,121-foot-long by 75-foot-wide right-of-way.

	<b>Total acres to be disturbed</b>	<b>Total acres to be reclaimed</b>
Drawdown Only	0.0 <sup>1</sup>	11.7
Existing Option	0.0 <sup>1</sup>	11.7
Compressor Option	0.0 <sup>1</sup>	11.7
Well Option (WBI #2)	3	14.7
Well Option (WBI #3)	4.2	15.9
<sup>1</sup> = only new land disturbance is calculated; land currently disturbed as part of storage field operation is not included		

## **9. NON-JURISDICTIONAL FACILITIES**

Under Section 7 of the NGA, the Commission is required to consider, as part of the decision to approve facilities under its jurisdiction, all factors bearing on the public convenience and necessity. Occasionally, proposed projects have associated facilities that do not come under the jurisdiction of the Commission. These “non-jurisdictional” facilities may be integral to the need for the proposed facilities, such as a power plant at the end of a jurisdictional pipeline, or they may be minor, non-integral components of the facilities under the Commission’s jurisdiction. However, based on the scope of this Project, non-jurisdictional facilities would not be required.

## **10. PERMITS**

Table 4 provides a list of known federal, state, and local permits for the Project, and their current status. WBI would be responsible for obtaining all required permits and approvals prior to beginning Project abandonment and/or construction activities regardless if they appear in this table.

**Table 4  
Federal, State, and Local Permits for the Project**

Agency	Permit/Approval/Consultations	Status
<b>Federal</b>		
FERC	Certificate of Public Convenience and Necessity under 7(c) of the Natural Gas Act and Authorization under section 7(b) of the Natural Gas Act	Ongoing
U.S. Army Corps of Engineers (USACE), Omaha District	Clean Water Act Section 404	Letter submitted by WBI on January 25, 2016 provided a wetland delineation report and requested a Jurisdictional Determination for wetlands present within the Project area. On April 11, 2016 the USACE submitted a letter stating that no features within the Project area met the definition of a jurisdictional Waters of the United States and no further action was required. Completed.
<b>State</b>		
U.S. Fish and Wildlife Service (USFWS)- Wyoming Ecological Services Field Office	Endangered Species Act Section 7 Consultation	USFWS letters dated December 30, 2014 state that USFWS did not identify any issues that give them concern relative to species or critical habitat listed under the Endangered Species Act. On August 13, 2015 WBI sent an addendum to the original letter proposing minor changes. On November 2, 2016 an updated search of Information for Planning and Consultation was completed and resulted in no changes to species present in Project area. Consultation completed.
Wyoming Department of Environmental Quality	Section 401 Water Quality Certification	Ongoing
	Air Quality Permit	Ongoing
	National Pollutant Discharge Elimination System Permit for Stormwater Discharge; Temporary Dewatering/Hydrostatic Testing; General Stormwater permit	Ongoing
	Air Quality Permit	Ongoing
State Historic Preservation Office- Wyoming	National Historic Preservation Act, Section 106 Consultation	Letter received December 16, 2014 stating that "no historic properties will be affected by the undertaking." Consultation completed
Wyoming Oil and Gas Conservation Commission	Permit to Drill & Approval of Well Plugging & Abandonment	Ongoing

## **B. ENVIRONMENTAL ANALYSIS**

The following sections discuss the Project's potential direct and indirect impacts on environmental resources. When considering the environmental consequences of the proposed Project, the duration and significance of any potential impacts are described below according to the following four levels: temporary, short-term, long-term, and permanent. Temporary impacts generally occur during construction, with the resources returning to pre-construction conditions almost immediately. Short-term impacts could continue for up to three years following construction. Long-term impacts would require more than three years to recover, but eventually would recover to pre-construction conditions. Permanent impacts could occur because of activities that modify resources to the extent that they may not return to pre-construction conditions during the life of the Project, such as with the construction of an aboveground facility. An impact would be considered significant if it would result in a substantial adverse change in the physical environment.

### **1. GEOLOGY**

#### **1.1 PHYSIOGRAPHIC SETTINGS AND GEOLOGIC CONDITIONS**

The proposed Project is in northeastern Wyoming within the Great Plains physiographic province of the Interior Plains. The major geologic features in the northern Great Plains region are extensive downfolded structures which contain thick sequences of sedimentary bedrock (United States Geological Survey [USGS] 1974). Topography in the Project vicinity is characterized by flat to gently rolling plains bounded by the Big Horn Mountains to the west and traversed by moderately incised intermittent drainages.

The Storage Field is in the Frontier formation within the Billy Creek anticline, on the northwestern edge of the Powder River Basin. The Storage Field structure is a double-plunging anticlinal fold with an axis oriented north to northwest. Two elongated structural closures are on the north end and the south end of the reservoir. The storage reservoir is within the Frontier sandstone and covers over 700 acres of this former gas producing field.

#### **1.2 MINERAL AND PALEONTOLOGICAL RESOURCES**

The Frontier formation and other laterally equivalent strata are known to be major resources of oil and gas. The Billy Creek Storage Field produced natural gas from 1923 to 1947, then it was converted to a Storage Field. The Project area is entirely within the lateral extent of the Billy Creek Storage Field; therefore, impacts on production or transportation of oil and natural gas are not anticipated outside of the Billy Creek Storage Field.

Coal, bentonite, uranium, sand, and gravel are other exploitable non-petroleum resources in Johnson County (Johnson County 2005). However, currently active or historic surface or subsurface mining operations were not identified within 1 mile of the Project area; therefore, impacts on these resources or operations are not anticipated (USGS 2017a).

Portions of the Frontier formation may contain fossils of Cenomanian, Turonian, and Coniacian Age. Paleontological resources are regulated by the State of Wyoming only if they are on state lands. With the exception of the reclamation of an existing access road and existing water tank storage area, the Project would occur on privately-owned lands. Additionally, the Antiquities Act of 1906 and the Paleontological Resources Preservation Act of 2009 protect objects of antiquity and fossils, respectively, on federal lands. No such protection for paleontological resources exists in laws or regulations for non-federal lands. However, WBI states that if sensitive or rare paleontological resources are discovered during Project activities on privately-owned land, WBI would notify and consult with the landowner.

Based on the above analysis, we conclude that impacts on mineral resources and/or sensitive or rare paleontological resources from construction, operation, and abandonment of the Project facilities are not anticipated.

### **1.3 GEOLOGIC HAZARDS**

Geologic hazards could affect the integrity of Project facilities during construction, operation, and abandonment. Potential hazards could include seismic-related issues such as ground rupture due to faulting, strong ground shaking, liquefaction, subsidence, slope stability and landslides, and karst terrain. These conditions are discussed below.

#### Seismicity and Soil Liquefaction

The shaking during an earthquake can be expressed in terms of the acceleration due to gravity (g), and seismic risk can be quantified by the motions experienced by the ground surface or structures during a given earthquake, also expressed in terms of g. The USGS produces ground motion hazard maps that show the probability of an area to exceed potential ground acceleration values. Based on USGS seismic hazard mapping, the Project facilities are in an area where the maximum peak horizontal ground accelerations of 18 to 20 percent g have a 2 percent chance of being exceeded in 50 years and peak horizontal ground accelerations between 5 and 6 percent g have a 10 percent chance of being exceeded in 50 years (USGS 2014a). This level of seismicity has the potential to cause no to moderate perceived ground shaking with little to moderate damage to structures. In addition, according to the USGS Quaternary Fold and Fault database, no Quaternary-Period faults would be crossed or encountered by the Project (USGS 2014c).

All proposed facilities would be temporary and subsequently abandoned. The temporary compressor unit (if installed) would be small, skid mounted, and installed on a gravel pad within the existing compressor station. Pipelines constructed using modern arc-welding techniques have performed well in seismically active areas of the United States, such as California, and can absorb some vibration, expansion, contraction, and movement without specialized construction. Only large, abrupt ground displacements have caused damage to pipeline facilities. Seismic and ground rupture hazards are not anticipated to significantly affect the proposed Project facilities.

Soil liquefaction is a phenomena associated with seismic activity in which saturated, non-cohesive soils temporarily lose their strength and liquefy (i.e., behave like a viscous liquid) when subjected to forces such as intense and prolonged ground shaking. Areas with the potential for soil liquefaction are normally characterized by the presence of non-cohesive deposits such as alluvium and lacustrine materials, where the water table occurs at depths of less than 10 feet below ground surface, and where there is the potential for prolonged ground shaking such as in areas characterized by peak ground acceleration of 10 percent g or greater. All three of these conditions (non-cohesive soils, near surface saturation, and seismicity) are necessary for soil liquefaction to occur. Although the Project lies within an area of moderate seismicity, Project area soils are well-drained and are not prone to near surface saturation; as such, the potential for soil liquefaction to occur is negligible.

### Expansive Soils

Expansive soils underlie the proposed Project area and can be hazardous during the operational lifetime of roads or structures. The proposed access roads and aboveground facilities would be ultimately reclaimed during abandonment activities; therefore, expansive soil hazards are not anticipated to significantly affect proposed Project facilities.

### Ground Subsidence

Ground subsidence, involving the localized or regional lowering of the ground surface, may be caused by karst dissolution, sediment compaction due to oil and gas and/or groundwater extraction, and the occurrence of underground mines. Karst terrain and subsurface mines do not occur in the Project area and documented instances of ground subsidence related to groundwater pumping (i.e., extraction) has not occurred. Oil and gas extraction does occur within the Project area. However, there have been no reported subsidence hazards as a result of these activities, given the depth, on the order of 3,000 feet below ground surface, to these resources. As such, the potential for ground subsidence to occur is negligible.

## Landslides

A review of landslide incidence and susceptibility derived from the digital Landslide Overview Map of the Conterminous United States (USGS 2014b) characterizes the Project area as having a low incidence and low susceptibility for landslides. Further, landslides in the Project area have not been documented within publically available information published by the Wyoming State Geological Survey and the Wyoming Water Resources Data System. As such, the potential for landslides to occur during construction, abandonment or operation of the Project is negligible.

Based on the above analysis, we conclude that impacts on the Project due to potential geologic hazards in the Project area are either not present or would be minor and would not significantly affect construction, operation, or abandonment of Project facilities.

## **2. SOILS**

The Natural Resources Conservation Service (NRCS) Web Soil Survey provides descriptions of the soil series crossed by the Project. There are three soil series within the Project area: Cambria-Kishona Loams (slopes from 0 to 6%), Cambria-Kishona Loams (slopes from 6 to 15%), and Turnercrest-Keeline-Taluce Fine Sandy Loams (slopes from 6 to 30%); however, Turnercrest-Keeline-Taluce Fine Sandy Loams underlie a small portion of the Project area (0.6 acre) which has been previously disturbed and graded. Project area soils are not considered to be hydric, compaction prone, or prime/unique farmland, and no agricultural activities occur within the Project limits.

Modifications of the existing compressor station (Compressor Option) and abandonment activities at the compressor station facilities following withdrawal (see table 1) would impact previously disturbed and maintained lands. After construction and/or abandonment, Project areas would be stabilized and returned to pre-construction conditions. Therefore, the impacts on soils at the compressor station facility would be temporary and minor.

If Well Option activities were implemented, WBI would temporarily disturb approximately 3 acres for WBI #2 or approximately 4.2 acres for WBI #3 for the construction of a well pad, pipeline, and access road to drill and ultimately abandon the temporary storage well. Well Option activities that have the potential to adversely affect soils would include clearing, grading, trenching, and backfilling. Potential impacts on soils could include erosion due to the action of water or wind, reduction of soil productivity by mixing topsoil with subsoil, and contamination from spills.

The soils in the Project area have low to moderate erosion potential and low revegetation potential. To limit the potential for erosion, WBI would adhere to the mitigation measures outlined in the FERC Plan. WBI has additionally specified that

erosion control devices such as wattles, silt fence, and vegetative buffers would be employed as necessary and that a SWPP Plan would be developed for the Project with appropriate permitting from the WYDEQ.

To prevent mixing of soil horizons and assist in reclamation, WBI would segregate topsoil during construction activities. Seeding would occur only when optimum climate conditions for seed germination are present and a grass seed drill equipped with a cultipacker would be used to ensure proper seed placement and depth for grass species. Per the FERC Plan, temporary erosion controls would be maintained until the Project area was successfully revegetated and WBI would monitor the effectiveness of revegetation and permanent erosion control devices during operation and maintenance of the Project facilities. Therefore, potential impacts on soils due to erosion and low revegetation potential would be adequately mitigated.

The Project would not disturb areas of known soil contamination. During construction, contamination from accidental spills or leaks of fuels, lubricants, and coolant from construction equipment could adversely affect soils. WBI and its contractors would implement the measures in the SPCC Plan to prevent and contain accidental spills of any material that may contaminate soils, and to ensure that inadvertent spills of fuels, lubricants, or coolant are contained, cleaned up, and disposed of in an appropriate manner. If evidence of contamination is encountered (such as discolored soils, chemical odors, or oily sheens on soil or water), WBI would implement measures contained in its Unanticipated Discovery of Contaminated Environmental Media Plan, which details procedures to identify, handle, temporarily store, and properly dispose of contaminated media. Therefore, if a spill or leak occurred or was encountered, impacts on resources would be adequately mitigated.

Following completion of the Well Option, the well pad and access road would be reclaimed and restored to preconstruction conditions. WBI would implement measures contained in the FERC Plan to prevent impacts on soils during construction and plugging/abandonment activities. Based on the above mitigation measures, including WBI's implementation of the FERC Plan and its SPCC Plan as well as WBI's commitment to develop and adhere to a Project-specific SWPP Plan, we conclude that no significant impacts on soil resources would occur as a result of the Project.

### **3. WATER RESOURCES AND WETLANDS**

#### **3.1 GROUNDWATER RESOURCES**

The Project area is in the northern Great Plains aquifer system and is underlain by Upper Cretaceous aquifers, including the Shannon aquifer. The Shannon aquifer is an elongated marine sand aquifer, and the few wells completed in this aquifer are low yielding and with poor water quality due to salinity. Wells that obtain water from Upper

Cretaceous aquifers are typically less than 800 feet deep. Where the Powder River basin bounds the Casper arch, the Shannon aquifer produces oil (Feathers et. al. 1981).

There are no EPA-designated sole source aquifers, state-designated sole source aquifers, or wellhead protection areas in the Project area. Furthermore, a review of registered water wells in the Wyoming State Engineer's Office e-Permit database did not identify water supply wells within 150 feet of construction workspaces. The nearest spring, adjacent to Billy Creek, is more than 300 feet from proposed Project.

Project construction, operation, and abandonment activities have the potential to impact groundwater. Short-term effects include alteration of overland flow and groundwater recharge resulting from clearing of vegetation, grading, and trenching activities and potential spills and leaks of fuels into shallow groundwater aquifers or during well installation or abandonment.

To reduce the potential for groundwater impacts, well construction (if implemented) and abandonment would be conducted in accordance with WOGCC rules and regulations. WOGCC's well abandonment procedures specify placement of 100-foot cement plugs comprised of approved cement and additives; mandate circulation of produced fluids from the well with fresh water or other fluid prior to commencing plugging operations; require isolation of leaks in casing which fail a mechanical integrity test; and require sealing or separating fresh water and potable water zones utilizing a mechanical cement retainer (if improperly sealed/separated when the production casing was cemented). During well installation, WOGCC drilling procedures would be followed, including the cementation of all casing strings back to the surface. Fluids displaced from wells during installation and abandonment would be collected into tanks and disposed of using commercial means such as hauling to a disposal well, in accordance with WOGCC regulations.

WBI's SPCC Plan contains measures to prevent and clean up any accidental spills of fuels or hazardous materials. We have reviewed this plan and find it acceptable. In addition, WBI would implement measures contained in the FERC Plan and Procedures and all abandonment and well construction for the Project would be conducted in accordance with Project permits and applicable WOGCC rules and regulations. WBI would obtain water for drilling activities, dust suppression, and hydrostatic testing from surface water resources (after obtaining appropriate water uptake permits) or via truck from a municipal source. We conclude that the Project would not significantly impact groundwater resources.

## 3.2 SURFACE WATER

### Waterbodies

The Project lies within the Muddy Creek and Lower North Fork Crazy Woman Creek subwatersheds, both of which are part of the Crazy Woman subbasin. No waterbodies were identified within the Project area during WBI's field surveys in November 2015; however, Billy Creek runs to the northwest of the Compressor Station, about 30 feet from the existing fenced boundary of the compressor station. Billy Creek is classified by the WYDEQ Water Quality Division as a Class 2AB High Quality Water according to Wyoming's Surface Water Quality Standards and is designated for drinking water, coldwater fish, nongame fish, aquatic life other than fish, fish consumption, recreation, wildlife, industry, agriculture, and scenic value uses (WYDEQ 2013).

Construction and abandonment activities at the Compressor Station would be limited to within the existing fenced boundary of the Compressor Station and would not directly impact Billy Creek. Abandonment activities at nearby well sites (Rider #2 and Graham #2) and potential well sites (WBI #2 and WBI #3) would be more than 250 feet from Billy Creek; therefore, Project activities at these locations would not impact the waterbody. WYGFD recommended a number of mitigation measures to prevent impacts on Billy Creek, including containing disturbed soils within the work area and staging equipment areas a minimum of 500 feet from riparian areas, among others. With the exception of staging equipment at least 500 feet from riparian areas, WBI has committed to complying with all of WYGFD's recommended mitigation measures. Because the entirety of the Compressor Station lies within 500 feet of Billy Creek, WBI is unable to comply with this mitigation measure. However, WBI would implement measures in our Procedures, including refueling and servicing equipment a minimum of 100 feet from waterbodies and the use of erosion control devices (e.g., wattles, silt fence) to prevent impacts from runoff. In addition, all disturbed areas would be revegetated which would buffer overland flows and reduce erosion potential. Further, WBI would adhere to its SPCC and SWPP Plans. For these reasons, we conclude that the Project's impacts on surface waters would not be significant.

### Hydrostatic Testing

Hydrostatic testing is a method by which water is introduced to segments of pipe and then pressurized to verify the integrity of the pipeline. If one of the proposed well sites (WBI #2 or WBI #3) is necessary for recovering gas from the Storage Field, the four-inch-diameter well line connecting the newly drilled well to the existing Rider #2 line would be hydrostatically tested in accordance with DOT regulations. If proposed well WBI #2 is drilled, then WBI would require about 320 gallons of water to test the associated well line. If proposed well site WBI #3 is used, then WBI would require about 625 gallons of water.

Hydrostatic test water would either be pumped and filtered from Billy Creek (a Class 2AB High Quality Water), obtained from the Compressor Station water tanks, or trucked-in from a municipal source in Buffalo, Wyoming. If water is obtained from Billy Creek, WBI would obtain any required water uptake permits, including applicable written permissions required by the FERC Procedures at VII.C.2, and adhere to the stipulations of such permits. Furthermore, WBI would screen intake hoses to minimize the potential for fish entrainment.

Following testing, water would be discharged through filter bags and energy dissipation devices in an upland area in accordance with our Procedures and any required discharge permits. WBI would test all discharge water for pollutants and treat the water as necessary prior to discharge. Lastly, WBI would work with the WYDEQ, as necessary, for suitable upland discharge locations. Therefore, we conclude that impacts from the withdrawal and discharge of hydrostatic test water would be minimal.

### **3.3 WETLANDS**

WBI conducted wetland delineation surveys in November 2015 in accordance with the USACE Wetland Delineation Manual (Environmental Laboratory 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Great Plains Region (USACE 2012). Wetlands were classified according to the USFWS classification system (Cowardin et al. 1979). Two 0.2 acre palustrine emergent (PEM) wetlands (0.4 acre total) were identified within the Project area.

WBI states that the hydrology for both wetlands originates from artesian groundwater that comes up between the well pipe and the outer casing of the Rider #2 and Graham #2 wells in the Storage Field; and that this groundwater began to flow around the 1950s. The artesian water was routed away from the wellheads and was directed to earthen embanked stock ponds. The landowner has used these ponds since their creation for watering cattle although it is naturally brackish because suitable water is scarce. Plugging and abandonment activities would essentially shut off the artesian water flow at the wells. As a result, both wetlands would be permanently lost. Although these stock ponds were used for watering cattle in the past, the landowner has indicated that the existing embanked stock pond areas near the Rider #2 and Graham #2 wells are no longer needed. WBI would continue to work with the landowner to reclaim these areas to resemble the surrounding area to the extent possible. The embanked stock pond areas would be bladed and reseeded using a seed mix and planting guidelines as recommended by applicable regulatory agencies and/or the landowner, discussed further in section B.4.2.

While both wetlands meet the wetland criteria, they were created artificially by operation of the natural gas wells, and have been used exclusively for the purpose of watering cattle. The natural sloping topography, combined with a lack of water sources indicates that wetland conditions would not exist without operation of the wells. Exempt

from the definition of “Waters of the United States” are “artificial, constructed lakes and ponds created in dry land such as farm and stock watering ponds...” (33 CFR 328.3). On January 26, 2016, WBI submitted a request to the USACE for a Jurisdictional Determination for the wetlands in the Project area. After a field review on March 7, 2016, the USACE responded to the Jurisdictional Determination request in correspondence dated April 11, 2016, indicating that the wetlands within the Project area are “artificially irrigated areas that will revert to upland once the irrigation ceases” and are not waters of the United States. Additionally, the USACE stated in its response that a Department of the Army authorization was not required because the Project activities will not affect waters of the United States. On March 16, 2016 via telephone communication, the WYDEQ Water Quality Department stated that if the wetlands were exempt from USACE regulation, they would not be subject to Wyoming’s regulations.

Given the relatively small volume of wetland loss (0.4 acre), and that WBI has committed to perform reclamation of these artificial wetlands to the satisfaction of the landowner and to resemble the surrounding area to the extent possible, we conclude that the reclamation of these artificial wetlands would not result in significant impacts.

#### **4. FISHERIES, VEGETATION, AND WILDLIFE**

##### **4.1 FISHERIES**

While no waterbodies would be crossed by the Project, Billy Creek runs to the northwest of the Compressor Station, about 30 feet away at the closest point. As previously mentioned, Billy Creek was classified by the WYDEQ, Water Quality Division as a 2AB waterbody within Wyoming's Surface Water Quality Standards and is designated for drinking water, coldwater fish, nongame fish, aquatic life other than fish, fish consumption, recreation, wildlife, industry, agriculture, and scenic value uses.

An approximately 3,500-foot-wide area that spans both sides of Billy Creek is designated as an aquatic crucial priority area by the WYGFD. Most of the Project area is encompassed within this aquatic crucial priority area. On January 14, 2016, WBI contacted the WYGFD to inquire about construction requirements within an aquatic crucial priority area. According to the WYGFD, aquatic crucial priority areas exist for future enhancement projects by the WYGFD and there are no regulatory requirements for working within these areas.

In its comment letter dated September 11, 2017, the WYGFD recommended a number of measures to prevent the spread of aquatic invasive species, however no work is proposed in any Wyoming water, with the exception of hydrostatic test water extraction which would involve minimal disturbance and would be conducted in accordance with applicable permits. WBI has committed to implementing WYGFD’s recommendations, as applicable.

Construction and abandonment activities in the vicinity of Billy Creek would be entirely within the existing compressor station fenceline. Based on the previous discussion in section B.3.2 for surface water resources, we conclude that the Project's impacts on nearby fisheries and aquatic communities in Billy Creek would not be significant.

## **4.2 VEGETATION**

The proposed Project is on land classified as rangeland and industrial land. The most common vegetative types within the Project area consists of short and mixed grasses, primarily western wheatgrass and crested wheatgrass. Trees are limited to nearby stream bottoms such as the banks of Billy Creek. There are no known unique, sensitive, or protected vegetative types that exist within the proposed Project area.

The total Project disturbance would depend upon which options for the recovery of cushion gas are implemented prior to the abandonment of the Storage Field. Table 3 outlines the amount of disturbance for each Project component.

With the exception of the Well Option, the proposed Project activities would primarily take place on previously disturbed land and almost all existing facilities to be reclaimed during the abandonment activities are currently void of vegetation. The existing well pads, production water evaporation pits, Compressor Station yard, and water tank area are graveled and kept free of vegetation for operational and safety reasons. Minimal areas of vegetation between and along the existing Rider #2 and the Graham #2 well pads and their associated evaporation pits and embanked stock ponds would be disturbed. The Well Option would disturb a maximum of about 16 acres if WBI #2 or WBI #3 were constructed.

### Noxious Weeds and Invasive Species

Invasive species are those that display rapid growth and spread, becoming established over large areas (U.S. Department of Agriculture [USDA] 2006). Most commonly, invasive species are exotic species that have been introduced from another part of the United States, another region, or another continent, although some native species that exhibit rapid growth and spread are also considered invasive. Similar to invasive species, noxious weeds are defined as those that are injurious to commercial crops, livestock, or natural habitats, and typically grow aggressively in the absence of natural controls (USDA 2016). Noxious weeds are frequently introduced but occasionally are native. Noxious weeds and invasive species can change or degrade natural vegetation communities which can reduce the quality of habitat for wildlife and native plant species.

Removal of existing vegetation and disturbance of soils during Project activities could create conditions conducive to the establishment of noxious weeds and invasive

species. WBI would implement measures recommended by the WYGFD to minimize the introduction of noxious weeds and invasive species, including:

- cleaning all equipment used for reclamation prior to commencing Project activities;
- using only native species in the seed mix for reclamation; and
- monitoring reclamation the following growing season to verify no invasive species are growing and adequately treating any identified invasives.

We find these measures to be acceptable.

Following abandonment activities, all disturbed areas would be restored and revegetated in accordance with the Plan. Topsoil would be segregated during construction and replaced for reclamation activities. WBI surveyed and characterized the existing grassland habitat in the Project area and, based on vegetation present and guidance provided by the NRCS, developed revegetation seed mixes for reclamation activities. Seeding would occur only during those times of the year when maximum soil moisture and optimum climate conditions for seed germination are present. Prior to May 20<sup>th</sup> is optimal for spring seeding for the Project area and the vegetative species types present. However, initial seeding may occur after October 25<sup>th</sup>, followed by a spring seeding. WBI would use a grass seed drill equipped with a cultipacker to help ensure proper seed placement and seeding depth at seeding rates recommended by the NRCS. WBI would monitor the Project area and conduct follow-up inspections of all disturbed areas in accordance with the Plan. The Plan also requires that the density and cover of non-nuisance vegetation of disturbed areas is similar in density and cover to adjacent undisturbed lands. At a minimum, WBI would conduct inspections after the first and second growing seasons.

Abandonment by removal and subsequent restoration of the areas impacted by the existing wells WBI #1, Rider #2, and Graham #2, including the well pads, produced water pits, and two access roads would result in a net gain of land that was formerly industrial and would eventually be restored to rangeland. Given that the proposed Project activities would primarily take place on previously disturbed land, would result in the net gain of vegetated land, no trees would be removed, and that all areas would be restored and revegetated in accordance with the Plan and the WYGFD's recommendations, we conclude that impacts on vegetation would be minimal and would not be significant.

### **4.3 WILDLIFE**

The Project area is used as active rangeland for cattle. Wildlife commonly found in the Project area include elk, white-tailed and mule deer, pronghorn antelope, moose, black bear, and mountain lion. Along the vegetated banks of nearby Billy Creek, various duck species may be found. Active construction and abandonment activities would be sporadic throughout the year, likely lasting a month at a time.

Potential impacts on wildlife include habitat removal, construction-related ground disturbance, and noise from construction equipment, compressor engine operation, vehicles, and from potential drilling rig operation, if Option 3 is implemented. Some individuals could be inadvertently injured or killed by construction equipment. However, more mobile species, such as birds and larger mammals, would likely relocate to other nearby suitable habitat and avoid the Project area once construction activities commence. We would not expect the temporary disturbance of local habitat to have population-level effects on wildlife because the amount of habitat crossed represents only a small portion of the habitat available to wildlife throughout the Project area. Additionally, all of the disturbed habitat would be returned to rangeland following abandonment and reclamation activities, with the exception of the Compressor Station. Short-term impacts from habitat alteration would be further minimized by the implementation of our Plan and Procedures, which would ensure revegetation of all areas disturbed by construction.

Given the abundance of similar habitat adjacent to the Project area and WBI's commitment to revegetate all areas disturbed by construction and abandonment activities, and implementation of our Plan and Procedures, we conclude that the Project would not have a significant impact on wildlife or wildlife habitat in the Project area.

### Migratory Birds

Migratory birds are species that nest in the United States and Canada during the summer and make short- or long-distance migrations for the non-breeding season. Neotropical birds migrate to and from the tropical regions of Mexico, Central and South America, and the Caribbean.

Migratory birds, including raptors and non-raptors species, are protected under the Migratory Bird Treaty Act ([MBTA]-16 U.S. Code 703-711). Bald Eagles and Golden Eagles are additionally protected under the Bald and Golden Eagle Protection Act (16 U.S. Code 668-668d). The MBTA, as amended, prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, or nests unless authorized under an USFWS permit. Executive Order 13186 directs federal agencies to avoid and minimize impacts on migratory bird resources when conducting agency actions; evaluate effects of actions on migratory birds; identify where unintentional take is likely to have a measurable negative effect on migratory bird populations and avoid or minimize adverse impacts on migratory birds through enhanced collaboration with the USFWS, emphasizing species of concern, priority habitats, and key risk factors, with particular focus given to population-level impacts.

On March 30, 2011, the USFWS and the FERC entered into a *Memorandum of Understanding (MOU) Between the Federal Energy Regulatory Commission and the U.S. Fish and Wildlife Service Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds."* The MOU focuses on avoiding or minimizing adverse impacts on migratory birds and strengthening

migratory bird conservation through enhanced collaboration between the FERC and the USFWS by identifying areas of cooperation. This voluntary MOU does not authorize the take of migratory birds.

The USFWS has further identified bird species that “without additional conservation actions are likely to become candidates for listing under the ESA of 1973” (USFWS 2008), and refers to these species as birds of conservation concern (BCC). These BCC species are generally a subset of the species protected by the MBTA. Although all MBTA-covered species are afforded protections, BCC species are considered priorities for conservation efforts and are specifically referenced in the MOU.

According to the USFWS Central Flyways website, a variety of migratory bird species may occur seasonally within the vicinity of the Project areas because these areas are within the Central Flyway for waterfowl. All of these species use open land and wetland areas and could be sensitive to Project activities.

All Project locations, except for potential well sites WBI #2 and WBI #3, are within previously disturbed, active natural gas transmission and storage facilities. The Compressor Station and existing well pads Rider #2 and Graham #2 are graveled with little to no vegetation and are not expected to appeal to migratory birds as desirable stopover locations. It is possible that migratory birds could choose to stopover in the upland areas surrounding the Project, especially along the banks of Billy Creek or near the embanked stock ponds. WBI indicated that Project activities could take place during all four seasons, and therefore, could take place during migratory bird nesting season. If construction occurs during the migratory bird nesting season, WBI would contract qualified biologists to inspect construction areas immediately prior to construction for the presence of any bird nests. If nests are observed, WBI would voluntarily suspend ground-disturbing activities (i.e., grading, trenching) within 100 feet of the nest while USFWS is contacted to determine necessary avoidance or mitigation measures prior to continuing ground-disturbing activities within the vicinity of an active nest.

The trees along Billy Creek may provide space for an eagle nest, although no known nests currently exist within the vicinity of the Project area. If an eagle nest is identified near any of the Project areas, WBI has committed to implementing the measures described in the USFWS’ 2007 *National Bald Eagle Management Guidelines* to avoid and/or minimize impacts on nesting eagles.

No major alterations to migratory bird use and occurrence patterns, or to ecosystems or biodiversity, would occur from Project activities. Given that the proposed Project area is within the existing Storage Field, as well as implementation of the previously discussed protective measures, we conclude that impacts on migratory and other birds would not be significant.

## Special Status Species

Special status species are those species for which state or federal agencies provide an additional level of protection by law, regulation, or policy. Included in this category are federally listed species that are protected under the ESA, species considered as candidates for such listing by the USFWS, and those species that are state-listed as threatened, endangered, or state species of special concern.

### Federally Listed Species

In accordance with Section 7 of the ESA, the FERC, in coordination with the USFWS, must ensure that any federal action authorized, funded, or carried out by the agency does not jeopardize the continued existence of a federally listed threatened or endangered species or result in an adverse modification of the designated critical habitat of a federally listed species. According to the USFWS' online project planning tool, Information for Planning and Consultation, the federally threatened Ute ladies' -tresses (*Spiranthes diluvialis*) and black footed ferret (*Mustela nigripes*) may potentially occur within the Project area. As our non-federal representative, WBI informally consulted with USFWS.

The black footed ferret is listed as an experimental population, non-essential, and consultation is not required under ESA. Nonetheless, black-footed ferrets depend exclusively on the prairie dogs for survival. Because there are no prairie dog towns or burrows within the Project area, we conclude that the Project would have *no effect* on the black-footed ferret or its habitat.

The Ute ladies' -tresses prefers moist, sub irrigated or seasonally flooded soils in valley bottoms or floodplains bordering springs or perennial streams. The Project area consists of two primary areas: 1) aridic and naturally alkaline soils in upland areas; and 2) saline-sodic soils within and along the two wetland areas in the Project area. Both area types are not suitable for the Ute ladies'-tresses. Further, there are no known or documented populations within Johnson County, Wyoming.

WBI sent a letter to the USFWS stating that the Project would have no effect on the Ute ladies' -tresses on December 1, 2014. The USFWS responded in a letter dated December 30, 2014 that it had not identified any issues that give it concern relative to species or critical habitat listed under the ESA and acknowledged the receipt of information used to make the "no effect" determination. On August 13, 2015, an addendum to the original consultation was sent to the USFWS to address the minor change from the installation of a temporary electric compressor engine to a temporary natural gas compressor engine; this addendum was intended as informational only and no additional correspondence was received. An updated search of Information for Planning and Consultation was conducted on November 2, 2016, and resulted in no change in the

species that may be present in the Project area. We agree that the Project would have *no effect* on the Ute ladies' tresses. Therefore, no further ESA consultation is required.

### Greater Sage Grouse

The State of Wyoming, Bureau of Land Management, U.S. Forest Service, and other land management agencies have coordinated Greater Sage Grouse Core Area Protection conservation actions throughout Wyoming. On July 29, 2015, the Wyoming Governor's Executive Order 2015-4 established Greater Sage Grouse Core Areas as the highest conservation priority. Additionally, the Governor's Executive Order also established Connectivity Areas, Winter Concentration Areas, and General Greater Sage Grouse Distribution Areas. The Project area is more than 6 miles from the nearest Greater Sage Grouse Core Area or Connectivity area and is not within a Winter Concentration Area. However, it is within the Greater Sage Grouse General Distribution Area. Non-Core Area general stipulations include: no surface occupancy within 0.25 mile of occupied Greater Sage Grouse leks year round, and a 2 mile seasonal buffer around leks from March 15 to June 30 when breeding, nesting, and early brood-rearing habitat is present. According to the Northeast Wyoming Sage-Grouse Conservation Plan Addendum, there are no occupied leks within approximately 15 miles of the Project area. Further, the Project area is currently active range for cattle with sparse sagebrush and the Storage Field has existed for more than 50 years, with constant human activity; therefore, it is unlikely that greater sage grouse would choose to inhabit the area.

Given that the Project area is void of sage brush and known leks, we conclude that the Project is not likely to affect the greater sage grouse or its habitat.

## **5. LAND USE, VISUAL RESOURCES, AND SCENIC PLACES**

Project construction and abandonment would result in temporary impacts on land use. The proposed Project would result in impacts on industrial land and rangeland that is privately owned and owned by the Wyoming Trust Land. No other land use types would potentially be impacted and the Project would not result in any permanent impacts on land use. None of the following designated areas are within the proposed Project area:

- Native American reservations, religious sites, or traditional cultural properties;
- lands owned or controlled by private preservation conservation groups;
- wild and scenic rivers;
- Coast Zone Management Areas;
- hazardous waste sites or landfills;
- recreation or public interest areas;
- special land use areas, such as orchards, nurseries, specialty crops, old-growth forests, etc.; or
- existing or planned developments.

## 5.1 LAND USE

The Project area is industrial land and rangeland primarily used for cattle grazing. Table 5 below indicates the land use by type. Rangeland allotments through the Bureau of Land Management exist along the lower portion of the proposed Project area on private property owned by one landowner. No federal lands (including Bureau of Land Management lands) would be impacted by the Project. A small portion (0.2 acre) of the Project area is on Wyoming Trust Land. The Storage Field is actively used by the landowner for rangeland cattle grazing, with the exception of the Compressor Station. However, although cattle may actively graze on and near the Storage Field facilities, the access roads, well pads, separator and measurement facilities are graveled and/or lack vegetative growth and are therefore considered industrial land. Initial drawdown and the Existing and Compressor Options would result in temporary impacts on about 11.7 acres of industrial land to rangeland after restoration, while the Well Option would result in temporary impact of either 14.7 or 15.9 acres of land on rangeland if WBI #2 or #3 were completed, respectively. Although numerous aboveground facilities at the Compressor Station would be abandoned (see table 1), land use at the existing Compressor Station would remain industrial and the remaining facilities would be left in use as office and storage space for local operations.

<b>Option</b>	<b>Rangeland</b>		<b>Industrial Land</b>	
	<b>Temporary Construction Impact (acres)</b>	<b>Permanent Operational Impact (acres)</b>	<b>Temporary Construction Impact (acres)<sup>1</sup></b>	<b>Permanent Operational Impact (acres)</b>
Drawdown	0	0	11.7 <sup>2</sup>	0
Existing Option	0	0	11.7 <sup>2</sup>	1.9 <sup>3</sup>
Compressor Option	0	0	1.9 <sup>3</sup>	1.9 <sup>3</sup>
Well Option, WBI #2 <sup>3</sup>	14.7	0	0	0
Well Option, WBI #3 <sup>4</sup>	15.9	0	0	0
<sup>1</sup> = includes all land currently disturbed as part of Storage Field operations and land that would be disturbed during construction <sup>2</sup> = about 0.2 acres is Wyoming Trust Land, the remaining 11.5 acres is privately owned <sup>3</sup> = includes the existing fenced-in property of the Compressor Station <sup>4</sup> = operation of the Well Option recovery wells is considered temporary construction impact due to the temporary nature of operation				

No residences occur within 50 feet of the proposed Project. The nearest residence to construction activities would be about 650 feet from the proposed location of WBI #2. No other residences or commercial structures are within 0.25 mile of the proposed Project. The Project-related impacts on the closest residence is reviewed further in section B.8. While construction of the Well Option would temporarily impact the residents of the closest residence, these impacts would be temporary and of short duration. The Project would not result in permanent impacts on these residents or residential land use.

## **5.2 VISUAL RESOURCES**

Project construction would temporarily impact visual resources in the Project vicinity from earth disturbance and movement of construction equipment. However, due to the temporary nature of construction, these impacts are temporary and would not have permanent impacts on visual resources. The abandonment and removal of all aboveground facilities installed during construction and removal of existing aboveground structures associated with the storage wells and abandonment at the Compressor Station would permanently improve the visual character of the surrounding areas. However these impacts would be minimal and not significant.

## **5.3 SCENIC PLACES**

The Bighorn National Forest is approximately 5.5 miles from the Project area. No national or state wild and scenic rivers, designated scenic areas, or lands included in or designated for study for inclusion in the National Wild and Scenic Rivers System are within 0.25 mile of the Project area (National Wild and Scenic Rivers System 2017). Construction and abandonment activities would not result in impacts on the national scenic highways, scenic trails, designated scenic areas, or wild and scenic rivers.

## **6. CULTURAL RESOURCES**

WBI completed a cultural resources survey for the Project and provided the resulting report to the FERC and the Wyoming State Historic Preservation Office (SHPO). A total of 60 acres was surveyed including the wells (to be abandoned and potentially constructed), Compressor Station, and access roads. One historic site, the Billy Creek Storage Field itself, was identified and re-evaluated as part of the survey. Features identified included two historic well plugs and a concrete foundation. The Storage Field was recommended as not eligible for the National Register of Historic Places due to lack of integrity. In a letter dated December 16, 2014, the SHPO concurred that no historic properties would be affected by the Project. We agree with the SHPO and have determined that the Project would not affect historic properties.

WBI contacted the following Native American tribes regarding the Project: Arapaho Tribe; Assiniboine and Sioux Tribes; Cheyenne River Sioux Tribe; Crow Creek

Sioux Tribe; Crow Tribe; Eastern Shoshone Tribe; Lower Brule Sioux Tribe; Northern Cheyenne Tribe; Oglala Sioux Tribe; Rosebud Sioux Tribe; Santee Sioux Nation; and Standing Rock Sioux Tribe. The Northern Cheyenne requested a copy of the survey report, which WBI provided. No other responses have been received to date. We sent our NOI to these same tribes. No responses to our NOI have been received.

WBI provided a plan to address the unexpected discovery of historic properties and human remains during construction. We reviewed the plan and found it acceptable.

## **7. AIR QUALITY**

Air quality refers to the relative concentrations of pollutants in the ambient air. The subsections below describe air quality concepts that are applied to characterize air quality and to determine the significance of increases in air pollution. Although the Storage Field has not been operational for a few years, typically, the compressor unit at the Compressor Station would be operational and would generate pollutant emissions. Construction and abandonment activities at the Storage Field would result in pollutant emissions that would impact air quality in the Project area. However, as a result of the abandonment of the compressor unit(s) at the Compressor Station, the Project would result in an overall net decrease of emissions.

### **7.1 EXISTING ENVIRONMENT**

Ambient air quality is protected by the Clean Air Act (CAA) of 1970, as amended in 1977 and 1990. The EPA oversees the implementation of the CAA and establishes National Ambient Air Quality Standards (NAAQS) to protect human health and welfare. NAAQS have been developed for seven “criteria air pollutants,” including nitrogen dioxide, carbon monoxide (CO), ozone, sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>), particulate matter less than or equal to 10 microns in aerodynamic diameter (PM<sub>10</sub>), and lead, and include levels for short-term (acute) and long-term (chronic) exposures. The NAAQS include two standards, primary and secondary. Primary standards establish limits that are considered to be protective of human health and welfare, including sensitive populations such as children, the elderly, and asthmatics. Secondary standards set limits to protect public welfare, including protection against reduced visibility and damage to crops, vegetation, animals, and buildings (EPA 2016c).

The EPA, state, and local agencies have established a network of ambient air quality monitoring stations to measure concentrations of criteria pollutants across the U.S. The data are then averaged over a specific time period and used by regulatory agencies to determine compliance with the NAAQS and to determine if an area is in attainment (criteria pollutant concentrations are below the NAAQS), nonattainment (criteria pollutant concentrations exceed the NAAQS) or maintenance (area was formerly nonattainment and is currently in attainment). Areas for which insufficient data are

available to determine attainment status are termed “unclassifiable areas.” The Project is in Johnson County, Wyoming, which is in attainment with the NAAQS.

Greenhouse Gases (GHG) produced by fossil-fuel combustion are carbon dioxide (CO<sub>2</sub>), methane, and nitrous oxide. GHGs are non-toxic and non-hazardous at normal ambient concentrations, and there are no applicable ambient standards or emission limits for GHG under the Clean Air Act. GHG emissions due to human activity are the primary cause of increased atmospheric concentration of GHGs since the industrial age. These elevated levels of GHGs are the primary cause of warming of the climate system since the 1950s. Emissions of GHGs are typically quantified and regulated in units of carbon dioxide equivalents (CO<sub>2</sub>e). The CO<sub>2</sub>e takes into account the global warming potential (GWP) of each GHG. The GWP is the measure of a particular GHG’s ability to absorb solar radiation as well as its residence time within the atmosphere. The GWP allows comparison of global warming impacts between different gases; the higher the GWP, the more that gas contributes to climate change in comparison to CO<sub>2</sub>. Thus, CO<sub>2</sub> has a GWP of 1, methane has a GWP of 25, and nitrous oxide has a GWP of 298.

## **7.2 REGULATORY REQUIREMENTS**

The provisions of the CAA that are applicable to the Project are discussed below. The estimated potential emissions for drawdown and each option are provided below in table 6. Additional CAA provisions that were evaluated but are not applicable to the proposed Project are listed below and not reviewed further:

1. Prevention of Significant Deterioration and Nonattainment New Source Review;
2. Title V Permitting;
3. General Conformity; and
4. Greenhouse Gas Emissions and the Mandatory Reporting Rule.

### New Source Performance Standards

The EPA promulgates New Source Performance Standards (NSPS) for new, modified, or reconstructed sources to control emissions to the level achievable by the best-demonstrated technology for stationary source types or categories as specified in the applicable provisions discussed below. NSPS also establishes fuel, monitoring, notification, reporting, and recordkeeping requirements.

NSPS Subpart JJJJ sets emissions standards for nitrogen oxides (NO<sub>x</sub>), CO, and volatile organic compounds (VOC) for emergency and non-emergency engines. Subpart JJJJ would apply to the compressor unit selected if the Compressor Option were implemented. Although WBI has not selected a specific 200 horsepower compressor unit, WBI would select a compressor unit that would comply with this standard. The various other subparts of the NSPS are not applicable to the Project.

## National Emission Standards for Hazardous Air Pollutants

The 1990 CAA Amendments established a list of 189 hazardous air pollutants (HAP), resulting in the promulgation of National Emission Standards for Hazardous Air Pollutants. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from specific source types located at major or area sources of HAPs by setting emission limits, monitoring, testing, record keeping, and notification requirements. The Compressor Station currently has the potential to emit less than the combined HAP total threshold of 25 tons per year and single HAP threshold of 10 tons per year, and is therefore considered an area (and not major) source of HAPs. The applicable regulations for area sources are described below.

Subpart ZZZZ applies to all reciprocating internal combustion engines at area sources and would therefore apply to the existing compressor unit (Existing Option) and the proposed temporary compressor unit (Compressor Option). WBI would comply with this requirement.

### State Requirements

Wyoming establishes permitting requirements for all sources constructed and/or operating within the state. WBI would comply with the requirements of all applicable permitting requirements and regulations, as necessary.

## **7.3 CONSTRUCTION EMISSIONS AND IMPACTS**

Project construction (Well Option) and abandonment activities would result in temporary, localized emissions that would last the duration of abandonment/construction activities (i.e., about 300 days). Project-related emissions from the operation of the existing and temporary compressor units would also result in temporary emissions. Exhaust emissions would be generated by the use of heavy equipment, drill rigs, and trucks powered by diesel or gasoline engines. Construction activities would also result in the temporary generation of fugitive dust due to ground disturbing activities and driving on unpaved roads. The amount of dust generated would be a function of construction activity, soil type, soil moisture content, wind speed, precipitation, vehicle traffic and types, and roadway characteristics. Emissions would be greater during dry periods and in areas of fine-textured soils subject to surface activity.

Construction and abandonment emissions were estimated based on the fuel type and anticipated frequency, duration, capacity, and levels of use of various types of construction equipment. Table 6 below provides the total Project construction and abandonment emissions, including exhaust emissions and fugitive dust from on-road and off-road construction equipment and vehicles.

<b>Table 6</b>									
<b>Project-related Air Pollutant Emissions (tons per construction duration)</b>									
<b>Phase of Project</b>	<b>Activity</b>	<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>PM<sub>2.5</sub></b>	<b>SO<sub>2</sub></b>	<b>VOC</b>	<b>HAPs</b>	<b>CO<sub>2e</sub></b>
Compressor Station Operation (Existing and Compressor Options)	Existing Option	10.7	3.6	0.15	0.15	0.01	1.4	0.2	1,801.8
	Compressor Option	3.9	1.9	0.32	0.32	0	1.4	0.5	2,186.2
	compressor station appurtenant equipment	0.3	0.3	0.02	0	0	4.02	0	384.5
	<b>Potential Maximum Compressor Station Emissions</b>	<b>14.9</b>	<b>5.8</b>	<b>0.49</b>	<b>0.47</b>	<b>0.01</b>	<b>6.82</b>	<b>0.7</b>	<b>4,372.5</b>
Construction (including the Well Option) & Abandonment Activities	Off-Road Construction Equipment	1.54	3.86	0.36	NA	0.01	0.3	0.02	698.6
	On-Road Motor Vehicles	0.22	0.11	0.01	0.01	0	0.03	NA	53.2
	Construction Activities	NA	NA	11.05	2.2	NA	NA	NA	NA
	Unpaved Vehicle Travel	NA	NA	2.5	0.37	NA	NA	NA	NA
	<b>Total for Construction &amp; Abandonment</b>	<b>1.76</b>	<b>3.97</b>	<b>13.92</b>	<b>2.58</b>	<b>0.01</b>	<b>0.33</b>	<b>0.02</b>	<b>751.9</b>
<b>Total for Project</b>		<b>16.66</b>	<b>9.77</b>	<b>14.41</b>	<b>3.05</b>	<b>0.02</b>	<b>7.15</b>	<b>0.72</b>	<b>5,124.4</b>
Note: emissions were quantified using emission factors in AP-42 Section 3.3, 11.9, 13.2.2, and 13.2.4									

Project emissions shown in table 6 would not result in a violation or degradation of ambient air quality standards. Due to the uncertainty regarding which options would be implemented to recover the cushion gas in the Storage Field, the total emissions in table 6 represent a worst-case scenario, with all options being implemented and assuming that the compressor units run constantly for a year each. Actual emissions from the proposed Project would likely be significantly lower.

WBI would minimize emissions by operating equipment on an as-needed basis and maintaining equipment and vehicles in accordance with manufacturers' specifications and EPA emission standards. In addition, WBI would implement the following measures to minimize fugitive dust generation:

- enforce speed limits on unpaved roads and construction workspaces;
- apply water or tacifiers on the workspaces regularly, if necessary; and
- minimize soil disturbance necessary for Project activities.

Project emissions would occur over the duration of construction activity and would be emitted at different times and locations throughout the Project area. Project emissions would be minor, short-term, and localized. Given the temporary nature of Project-related emissions, and with the mitigation measures proposed by WBI, we conclude air quality impacts from the Project would not result in significant impact on local or regional air quality. In addition, the Project would result overall in a net reduction of emissions due to the abandonment of the existing compressor unit in the Compressor Station.

## **8. NOISE**

Noise is generally defined as sound with intensity greater than the ambient or background sound pressure level. Project construction and abandonment would affect overall noise levels in the Project area. The magnitude and frequency of environmental noise may vary considerably over the course of the day, throughout the week, and across seasons, in part due to changing weather conditions and the effects of seasonal vegetative cover. Two measures that relate the time-varying quality of environmental noise to its known effect on people are the 24-hour equivalent sound level ( $L_{eq}$ ) and day-night sound level ( $L_{dn}$ ). The  $L_{eq}$  is an A-weighted sound level containing the same energy as the instantaneous sound levels measured over a specific time period. Noise levels are perceived differently, depending on length of exposure and time of day. The  $L_{dn}$  takes into account the duration and time the noise is encountered. Specifically, the  $L_{dn}$  is the  $L_{eq}$  plus a 10 decibel on the A-weighted scale (dBA) penalty added to account for people's greater sensitivity to nighttime sound levels (typically considered between the hours of 10:00 p.m. and 7:00 a.m.). The A-weighted scale is used to assess noise impacts because human hearing is less sensitive to low and high frequencies than mid-range frequencies. The human ear's threshold of perception for noise change is considered to be 3 dBA; 5 dBA is clearly noticeable to the human ear, and 10 dBA is perceived as a doubling of noise (Bies and Hansen 1988).

### **8.1 FEDERAL NOISE REGULATIONS**

In 1974, the EPA published *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA 1974). This document provides information for state and local governments to use in developing their own ambient noise standards. The EPA has indicated that an  $L_{dn}$  of 55 dBA protects the public from indoor and outdoor activity interference. We have adopted this criterion and use it to evaluate the potential noise impacts from the proposed Project at noise sensitive areas (NSAs). NSAs are defined as homes, schools, churches, or any location where people reside or gather. FERC requires that the noise attributable to any new compressor engine or modifications during full load operation not exceed an  $L_{dn}$  of 55 dBA at any NSAs. Due to the 10 dBA nighttime penalty added prior to the calculation

of the  $L_{dn}$ , for a facility to meet the 55 dBA  $L_{dn}$  limit, it must be designed such that actual constant noise levels on a 24-hour basis do not exceed 48.6 dBA  $L_{eq}$  at any NSA.

No other applicable state or local noise regulations were identified for the Project.

## 8.2 AMBIENT NOISE CONDITIONS

Land use in the vicinity of the Compressor Station consist mainly of rangeland. The four closest NSAs (or cluster of NSAs) in each direction at each compressor station were identified and included in the noise assessment. Ambient noise surveys at the NSAs nearest to the Compressor Station were completed on September 8 and 9, 2015. The Compressor Station was not operational during the ambient noise assessment as it has not been operational for several years. Day and night data were collected at all NSAs. The results of the noise surveys are provided in table 7 as ambient background sound levels.

## 8.3 CONSTRUCTION NOISE IMPACTS AND MITIGATION

Noise would be generated during construction and abandonment activities. Construction activities in any one area could last from several weeks to several months on an intermittent basis. While individuals in the immediate vicinity of the construction activities would experience an increase in noise, this effect would be temporary and localized. Option 3 would result in the greatest noise levels due to drilling activities for a new well that could extend for 24 hours a day up to one month. However, it is likely that drilling activities would not exceed two weeks. There is one NSA about 650 feet southeast of the proposed well WBI #2. There are no other NSAs within 1 mile of the proposed Project. It is possible that drilling activities could result in noise levels in excess of 55 dBA at that NSA. If WBI #2 is drilled, WBI would monitor noise output levels at that NSA during operation of the drilling rig. If noise greater than 55 dBA  $L_{dn}$  is measured, WBI would implement noise mitigation measures, such as installation of engine mufflers, acoustical blankets, or sound walls. If noise levels continue to be greater than 55 dBA, WBI has committed to making other accommodations for residents during the overly disruptive period of construction, such as offering to reimburse for hotel stays until the completion of nighttime construction activities. While WBI has committed to implementing noise mitigation measures during the Project if the Well Option were implemented, **we recommend:**

- **Prior to commencing any nighttime drilling activity (between 10:00 pm and 7:00 am), WBI should file with the Secretary of the Commission (Secretary), for review and written approval by the Director of the Office of Energy Projects (OEP), a Night Noise Mitigation Plan that details the specific frequency and methodology for nighttime noise monitoring and the mitigation measures WBI will implement if noise readings are greater than 55 dBA  $L_{dn}$  at any NSA, such as installing a noise wall, or providing temporary relocation or compensation.**

**During nighttime drilling, WBI should implement the approved plan, monitor noise levels, and make all reasonable efforts detailed in the approved plan to restrict the noise attributable to the drilling operations to no more than an  $L_{dn}$  of 55 dBA at the NSAs.**

The Existing Option and Compressor Options would involve the use of either the existing compressor unit or a temporary 200 horsepower compressor unit. Both these options would generate noise on a semi-continuous basis (i.e., up to 24 hours a day) when operating. WBI completed an ambient noise survey to estimate the impacts from the proposed temporary compressor unit from operation during implementation of the Compressor Option. The results of the ambient noise survey were combined with the predicted noise impacts from the proposed compressor unit (Ajax 180 LE with Vanec 144 Muffler) using logarithmic addition. The results of the noise analysis are presented in table 7 below.

NSA	Distance and Direction to NSA (feet)	Existing Ambient Sound Levels ( $L_{dn}$ dBA)	Predicted Sound Levels due to Compressor Unit Only ( $L_{dn}$ dBA)	Combined Total Noise (ambient and predicted sound levels, $L_{dn}$ dBA)
NSA 1	626 feet northeast	36	50	50
NSA 2	6,640 south-southwest	36	23	36
NSA 3	7,184 feet northeast	41	28	41
NSA 4	8,642 west	38	20	38

The noise analysis summary above indicates that total noise at all four NSAs would be less than 55 dBA. While the analysis above shows that the noise impacts at the NSAs from the proposed temporary compressor unit would be below our requirement, to verify compliance with the FERC’s noise standards, **we recommend that:**

- **If the temporary compressor unit is installed and during operation of the temporary compressor unit, WBI should monitor noise levels at the NSAs on a regular basis, make all reasonable efforts to restrict the noise attributable to the temporary operation of the compressor unit to no more than an  $L_{dn}$  of 55 dBA at the NSAs, and file the recorded noise levels with the Secretary in its construction status report.**

Based on the noise analysis above, WBI's commitment to mitigating impacts from nighttime construction, and our recommendations stated above, we believe that the Project would not result in significant noise impacts on residents or the surrounding communities.

#### **8.4 OPERATION NOISE IMPACTS AND MITIGATION**

The Project would result in the abandonment of the Storage Field and the existing compressor unit and, if the Compressor Option is implemented, the proposed temporary compressor unit. Therefore, there are no noise-related operational impacts as a result of the proposed Project.

### **9. RELIABILITY AND SAFETY**

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture. Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death.

The pipeline and aboveground facilities associated with the Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. For example, Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues, prescribes the minimum standards for operating and maintaining pipeline facilities, and incorporates compressor station design. Facilities associated with WBI's Project must be designed, constructed, operated, and maintained in accordance with DOT standards, including the provisions for written emergency plans and emergency shutdowns.

WBI's construction and operation would represent a minimum increase in risk to the public, however we are confident that with the options available in the detailed design of WBI's facilities, that they would be constructed and operated safely.

### **10. CUMULATIVE IMPACTS**

In accordance with NEPA and with FERC policy, we evaluated the potential for cumulative effects of the Project. Cumulative impacts represent the incremental effects of a proposed action when added to other past, present, or reasonably foreseeable future actions, regardless of the agency or party undertaking such other actions. Cumulative

impacts can result from individually minor, but collectively significant actions, taking place over time.

This cumulative effects analysis generally follows a method set forth in relevant Council on Environmental Quality and EPA guidance and focuses on potential impacts from the proposed Project on resource areas or issues where the incremental contribution would be potentially significant when added to the potential impacts of other actions. To avoid unnecessary discussions of insignificant impacts and projects and to adequately address and accomplish the purposes of this analysis, an action must first meet the following three criteria to be included in the cumulative analysis:

- affect a resource potentially affected by the Project;
- cause this impact within all, or part of, the Project’s impact area; and
- cause this impact within all, or part of, the time span for the potential impact from the Project.

### 10.1 PROJECTS IDENTIFIED WITHIN THE GEOGRAPHIC SCOPE

Our cumulative impacts analysis considers actions that impact environmental resources affected by the proposed action, within all or part of the Project area affected by the proposed action (i.e., geographic scope), and within all or part of the time span of the impacts. The geographic scope used to assess cumulative impacts for each resource are discussed below in table 8. The projects considered in the cumulative impacts analysis are provided in table 9.

<b>Table 8 Geographic Scope of Cumulative Resource Impacts</b>	
<b>Resource</b>	<b>Geographic Scope</b>
Geological Resources and Soils	Limits of project disturbance
Water Resources	Watershed boundary (Hydrologic Unit Code 12 [HUC-12])
Fisheries, Vegetation, and Wildlife	HUC-12
Land Use, Recreation, and Visual Resources	1 mile
Cultural Resources	Limits of project disturbance
Air Quality	Construction: 0.25 mile; Operation: 50 kilometer (km)
Noise	1 mile

The justification for the geographic scope for each resource is specified below.

- Project construction and restoration measures, including erosion control devices, are designed to confine impacts on geologic and soil resources to the project workspaces. Therefore, we evaluated potential cumulative

impacts on soils and geological resources within the same construction footprint as the Project.

- Impacts on water resources (primarily increased turbidity) and wetlands could extend outside of the workspaces, but would also be contained to a relatively small area. Furthermore, impacts on water resources are traditionally assessed on a watershed level. Therefore, we evaluated other projects within the HUC-12 watersheds crossed by the Project.
- Impacts on vegetation, wildlife, and special status species could extend outside of the workspaces to plant seed dispersion areas or individual home ranges for species with potential to occur in the Project area, but would generally be contained to a relatively small area. We believe the watershed scale is most appropriate to evaluate impacts as it provides a natural boundary and a geographic proxy to accommodate general wildlife habitat and ecology characteristics in the Project area. Therefore, we evaluated projects within the HUC-12 watersheds crosses by the Project.
- Impacts on cultural resources are highly localized and generally confined to the historic property or resource that is affected. Therefore, the geographic scope for cultural resources impacts is limited to the Project footprint, encompassing any overlapping effects to cultural resources and historic properties.
- Temporary impacts on air quality, including fugitive dust, would be largely limited to areas within 0.25 mile of active construction. The temporary operation of the compressor units at the Compressor Station were evaluated as temporary construction impacts, and long-term impacts on air quality were not evaluated due to the abandonment by removal of the emission-generating units at the Compressor Station.
- Impacts from construction noise could potentially contribute to cumulative impacts on NSAs within 1 mile of the proposed construction work areas and the Compressor Station. Therefore, we evaluated current and proposed sources within 1 mile of the construction work areas and Compressor Station.

An evaluation was performed to identify past, present, and reasonably foreseeable future projects within the resource-specific geographic scopes. To obtain this information, WBI consulted sources including county highway department plans, city and county planning departments, and online resources. The projects identified as occurring within the resource-specific geographic scopes are identified below based on resource type.

## **10.2 POTENTIAL CUMULATIVE IMPACTS OF THE PROPOSED ACTION**

As described in section B of this EA, Project-related construction and operation would temporarily and permanently impact the environment. The Project would impact

geology and soils; water resources; vegetation and wildlife; land use and visual resources; and air quality and noise. Table 9 below lists the past, present, and reasonably foreseeable projects identified within the geographic scope for each resource and considered for cumulative impact analysis.

<b>Table 9 Present and Reasonably Foreseeable Projects Considered for Cumulative Impacts within the Geographic Scope of the Project</b>						
<b>Project Name</b>	<b>Project Sponsor</b>	<b>Location</b>	<b>Distance and Direction from Project</b>	<b>Description</b>	<b>Status</b>	<b>Potential Contribution to Cumulative Impact</b>
<b>Future Projects Occurring Within the Same Geographic Scope and Timeline of the Proposed Project</b>						
Multiple road repair/maintenance projects	Wyoming Department of Transportation	Johnson County, WY	Various locations, closest is about 16 miles north	Pavement rehabilitation and reconstruction	Planned for 2018	Water resources; Fisheries, Vegetation, and Wildlife

As indicated in table 9, there are no projects within the geographic scope of the Project for the following resources: geology, soils, land use, recreation, visual resources, cultural resources, air quality or noise. Therefore, we conclude that the impacts from this Project, when considered cumulatively with past, present, and reasonably foreseeable projects, would not contribute to significant cumulative impacts on these resources, and these resources will not be discussed further in this section. The only resources with potential for the Project to contribute to overall cumulative impacts are water resources, fisheries, vegetation, and wildlife, discussed below.

### Water Resources

Impacts on groundwater may occur due to well installation or plugging, trenching, dewatering, surface water withdrawal, and/or hydrostatic test water discharge; however, these impacts would be temporary and limited to the duration of construction/abandonment activities. Potential impacts would be minimized by the mitigation measures in our Plan.

Impacts on surface waterbodies may occur during construction/abandonment activities as a result of erosion and runoff from ground-disturbing activities, hydrostatic test water extraction and discharge, and spills from construction equipment. The road

repair/maintenance project listed in table 9 occur within the same geographic scope (i.e. HUC 12) as the proposed Project and may contribute cumulatively to impacts on surface waterbodies.

Based on the mitigation measures proposed by WBI, WBI's commitment comply with WOGCC rules and regulations, WYGFD's recommendations, and measures in our Plan and Procedures, we conclude the proposed Project would not contribute cumulatively to impacts on water resources. Additionally, the distance to these road repair projects (16 miles north), would further minimize any potential water resources cumulative impacts.

Impacts on wetlands would occur as a result of the permanent loss of 0.4 acre of wetlands due to the abandonment of the Rider #2 and Graham #2 wells which would remove the source of the artesian water flow to the artificially-created wetlands. The road repair/maintenance project listed in table 9 may contribute cumulatively to impacts on wetlands. However, due to the fact that the wetlands were created artificially, and based on the relatively small volume of wetland loss, we conclude the proposed Project's impacts on wetlands, when combined with the effects of the road repair projects occurring within the same watershed, would not result in adverse cumulative effects to wetland resources.

#### Fisheries, Vegetation, and Wildlife

Impacts on fisheries may occur during construction/abandonment activities as a result of erosion and runoff from ground-disturbing activities, hydrostatic test water extraction and discharge, and spills from construction equipment. The proposed Project is not expected to contribute cumulatively to impacts on fisheries due to the mitigation measures listed above for water resource impacts.

Project construction of the Well Option would result in temporary impacts on vegetation as a result of ground disturbing activities. However, these impacts would primarily occur on previously disturbed land and all areas would be restored and revegetated in accordance with our Plan and the WYGFD's recommendations. Additionally, although the DOT road repair projects shown in table 9 above would occur within the same geographic scope as the proposed Project, based on the mitigation measures mentioned above and the resulting net gain of rangeland following restoration, the proposed Project is not expected to contribute cumulatively to impacts on vegetation.

Disturbance during construction is expected to cause short-term displacement of wildlife from in, and near the construction workspace and mortality of wildlife that cannot avoid construction disturbance. The DOT road repair projects would occur within the same geographic scope of the proposed Project. However, based on the temporary nature of construction, the distance to the DOT road repair projects (16 miles), and the abundance of similar habitat nearby, impacts from the Project are not expected to

significantly contribute cumulatively to impacts on wildlife. Additionally, following abandonment of the Project and restoration of all disturbed areas (with the exception of the Compressor Station), additional vegetation and wildlife habitat would be created by the removal of the existing aboveground structures and well pads.

## **C. ALTERNATIVES**

In accordance with NEPA and Commission policy, we evaluated alternatives to the Project to determine whether they would be reasonable and environmentally preferable to the proposed action. These alternatives included the no-action alternative, operational alternatives, and site alternatives. There are no system alternatives because there are no other systems that would be able to drawdown the Storage Field's gas. The evaluation criteria used for developing and reviewing alternatives were:

- ability to meet the Project's stated objective;
- technical and economic feasibility and practicality; and
- significant environmental advantage over the proposed action.

### **1. NO-ACTION ALTERNATIVE**

Under the no-action alternative, WBI would not construct or abandon the Storage Field and none of the impacts associated with the Project would occur. However, the Project objectives would not be met. The Storage Field would remain unreliable due to water encroachment and incapable of providing firm natural gas storage service. The storage capacity that was previously served by the Storage Field is now served by WBI's Baker Storage Field. Due to the increasing unreliability of the Storage Field, because the field's functionality is now served by another field, and because the proposed Project would result in minimal short-term impacts but would result in the net gain of rangeland in the Project area in the long-term, the no action alternative is not a reasonable alternative to meet Project objectives.

### **2. OPERATIONAL ALTERNATIVE**

This alternative would involve increasing the operating pressure of the Storage Field to restore reservoir space. However, in the past, WBI has attempted to increase the pressure in the field and did not see beneficial results. Due to the limited success of past efforts, increasing the pressure of the Storage Field is not a reasonable alternative to meet Project objectives. Therefore, we have not considered it further.

### **3. SITE ALTERNATIVE**

Because the proposed locations for the compressor unit and well pads would not present any environmental concerns, and because we have not received any stakeholder concerns regarding the proposed locations, site alternatives are not evaluated here.

### **4. CONCLUSION**

We reviewed alternatives to WBI's proposal based on our independent analysis. None of the alternatives have a high likelihood of long-term success in terms of restoring

the functionality and capacity of the Storage Field. Therefore, we conclude that WBI's proposed Project, as modified by our recommended mitigation measures, is the preferred alternative that can meet the Project objectives.

## D. CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis in this EA, we have determined that if WBI constructs/operates/abandons the proposed facilities in accordance with its application and supplements, and the staff's recommended mitigation measures below, approval of the Project would not constitute a major action significantly affecting the quality of the human environment. We recommend that the Commission Order contain a finding of no significant impact and include the measures listed below as conditions in any authorization the Commission may issue to WBI.

1. WBI shall follow the construction and abandonment procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the EA, unless modified by the Order. WBI must:
  - a. request any modification to these procedures, measures, or conditions in a filing with the Secretary;
  - b. justify each modification relative to site-specific conditions;
  - c. explain how that modification provides an equal or greater level of environmental protection than the original measure; and
  - d. receive approval in writing from the Director of OEP **before using that modification.**
  
2. The Director of OEP, or the Director's designee, has delegated authority to address any requests for approvals or authorizations necessary to carry out the conditions of the Order, and take whatever steps are necessary to ensure the protection of all environmental resources during construction and activities associated with abandonment of the Project. This authority shall allow:
  - a. the modification of conditions of the Order;
  - b. stop-work authority; and
  - c. the imposition of any additional measures deemed necessary to ensure continued compliance with the intent of the conditions of the Order as well as the avoidance or mitigation of unforeseen adverse environmental impact resulting from Project construction and abandonment activities.
  
3. **Prior to any construction or abandonment activities**, WBI shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, EIs, and contractor personnel will be informed of the EI's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction, abandonment, and restoration activities.

4. The authorized facility locations shall be as shown in the EA, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of construction or abandonment activities**, WBI shall file with the Secretary any revised survey alignment maps/sheets at a scale not smaller than 1:6,000 for the facilities approved by the Order. All requests for modifications of environmental conditions of the Order or site-specific clearances must be written and must reference locations designated on these maps/plans.

WBI's exercise of eminent domain authority granted under NGA section 7(h) in any condemnation proceedings related to the Order must be consistent with these authorized facilities and locations. WBI's right of eminent domain granted under NGA section 7(h) does not authorize it to increase the size of its natural gas facilities to accommodate future needs or to acquire a right-of-way to transport a commodity other than natural gas.

5. WBI shall file with the Secretary detailed maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of the OEP **before construction or abandonment activities in or near that area.**

This requirement does not apply to extra workspaces allowed by the Commission's Plan and/or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resource mitigation measures;
- b. implementation of endangered, threatened, or special concern species mitigation measures;
- c. recommendations by state regulatory authorities; and
- d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.

6. **Within 60 days of the acceptance of this authorization and before construction or abandonment activity begins**, WBI shall file an Implementation Plan with the Secretary for review and written approval by the Director of the OEP. WBI must file revisions to the plan as schedules change. The plan shall identify:
- a. how WBI would implement the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests), identified in the EA, and required by the Order;
  - b. how WBI would incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
  - c. the number of EIs assigned, and how the company would ensure that sufficient personnel are available to implement the environmental mitigation;
  - d. company personnel, including EIs and contractors, who would receive copies of the appropriate material;
  - e. the location and dates of the environmental compliance training and instruction WBI would give to all personnel involved with abandonment, construction and restoration (initial and refresher training as the Project progresses and personnel change);
  - f. the company personnel (if known) and specific portion of WBI's organization having responsibility for compliance;
  - g. the procedures (including use of contract penalties) WBI would follow if noncompliance occurs; and
  - h. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
    - i. the completion of all required surveys and reports;
    - ii. the environmental compliance training of onsite personnel;
    - iii. the start of construction and abandonment; and
    - iv. the start and completion of restoration.
7. WBI shall employ at least one EI. The EI(s) shall be:
- a. responsible for monitoring and ensuring compliance with all mitigation measures required by the Order and other grants, permits, certificates, or other authorizing documents;
  - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;

- c. empowered to order correction of acts that violate the environmental conditions of the Order, and any other authorizing document;
  - d. responsible for documenting compliance with the environmental conditions of the Order, as well as any environmental conditions/permit requirements imposed by other federal, state, or local agencies; and
  - e. responsible for maintaining status reports.
8. Beginning with the filing of its Implementation Plan, WBI shall file updated status reports with the Secretary on a **monthly basis until all construction, abandonment, and restoration activities are complete**. On request, these status reports will also be provided to other federal and state agencies with permitting responsibilities. Status reports shall include:
- a. an update on WBI's efforts to obtain the necessary federal authorizations;
  - b. the construction status of the Project, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
  - c. a listing of all problems encountered and each instance of noncompliance observed by the EI during the reporting period both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other federal, state, or local agencies;
  - d. a description of the corrective actions implemented in response to all instances of noncompliance, and their cost;
  - e. the effectiveness of all corrective actions implemented;
  - f. a description of any landowner/resident complaints which may relate to compliance with the requirements of the Order, and the measures taken to satisfy their concerns; and
  - g. copies of any correspondence received by WBI from other federal, state, or local permitting agencies concerning instances of noncompliance, and WBI's response.
9. WBI must receive written authorization from the Director of OEP **before commencing construction or abandonment of any Project facilities**. To obtain such authorization, WBI must file with the Secretary documentation that it has received all applicable authorizations required under federal law (or evidence of waiver thereof).
10. **Within 30 days of completing Project abandonment**, WBI shall file an affirmative statement with the Secretary, certified by a senior company official:

- a. that the facilities have been abandoned in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
  - b. identifying which of the conditions in the Order WBI has complied with or will comply with. This statement shall also identify any areas affected by the Project where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.
  
11. **Prior to commencing any nighttime drilling activity** (between 10:00 pm and 7:00 am), WBI shall file with the Secretary, for review and written approval by the Director of OEP, a Night Noise Mitigation Plan that details the specific frequency and methodology for nighttime noise monitoring and the mitigation measures WBI will implement if noise readings are greater than 55 dBA  $L_{dn}$  at any NSA, such as installing a noise wall, or providing temporary relocation or compensation. During nighttime drilling, WBI shall implement the approved plan, monitor noise levels, and make all reasonable efforts detailed in the approved plan to restrict the noise attributable to the drilling operations to no more than an  $L_{dn}$  of 55 dBA at the NSAs.
  
12. **If the temporary compressor unit is installed and during operation of the temporary compressor unit**, WBI shall monitor noise levels at the NSAs on a regular basis, make all reasonable efforts to restrict the noise attributable to the temporary operation of the compressor unit to no more than a  $L_{dn}$  of 55 dBA at the NSAs, and file the recorded noise levels with the Secretary in its construction status report.

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