

# **ENVIRONMENTAL ASSESSMENT for the Gateway West Geotechnical Drilling Project (WYW174598-01)**

Wyoming High Plains District – Casper Field Office



**June 2009**

The BLM manages more land – 258 million acres – than any other Federal agency. This land, known as the National System of Public Lands, is primarily located in 12 Western States, including Alaska. The Bureau, with a budget of about \$1 billion, also administers 700 million acres of sub-surface mineral estate throughout the nation. The BLM's multiple-use mission is to sustain the health and productivity of the public lands for the use and enjoyment of present and future generations. The Bureau accomplishes this by managing such activities as outdoor recreation, livestock grazing, mineral development, and energy production, and by conserving natural, historical, cultural, and other resources on public lands.

**BLM/WY/PL-09/028+1430**

**WY-060-EA09-88**

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**Appendices**

**Appendix A BLM Survey Requirements**

**Appendix B Other Ownership Survey Requirements**

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# CHAPTER 1

## INTRODUCTION

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Idaho Power Company and Rocky Mountain Power (referred to as the Companies) have requested a short term right-of-way (SF-299 serial number WYW174598-01) to conduct geotechnical surveys on federal lands managed by the Bureau of Land Management (BLM) in Wyoming and Idaho. This drilling project is in association with the proposed route of the Gateway West electric transmission line in order to collect geotechnical soil property information for the design of foundations and support structures. An environmental impact statement on the transmission line is currently being developed.

The hydrogeologic and geotechnical information is important in design of foundations and support structures for the transmission line structures, substations, and other associated building foundations. Since the transmission line would primarily use four-legged lattice steel towers, the geotechnical data would be used to determine the appropriate depth requirements for the drilled pier foundations at each leg. It is necessary to test the soil and subsoil conditions averaging every 2 miles along the entire proposed route and route alternatives to determine general subsurface conditions so the transmission line could be safely constructed. Every structure location must withstand the greatest stresses (typically corner structures or those supporting very long spans). On land administered by BLM, 278 borings would be completed across Wyoming and Idaho. In total, 914 boreholes are planned on federal, state, Indian reservation, and private lands.

This Environmental Assessment (EA) has been prepared to evaluate the proposed project in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. The EA is tiered to the Bureau of Land Management (BLM) Resource Management Plans (RMPs). Prior to authorizing the proposed geotechnical exploration on BLM-administered lands, the environmental and social effects of those actions must be evaluated. This EA discloses the direct, indirect, and cumulative effects of the alternatives for geological surveying. This EA would be used for evaluation of the alternatives and to make a determination of the need to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI). The responsible BLM line officer will make decisions based on consideration of the purpose and need for the project, the significance of the effects of alternatives, and public concerns. If impacts are not significant as defined in 40 Code of Federal Regulations (CFR) 1508.27, then a Decision Record and FONSI will be prepared.

For this project, the BLM Wyoming State Office is the lead BLM office for this joint EA which crosses portions of the Casper, Rawlins, Rock Springs, Kemmerer, Pocatello, Shoshone, Burley, Jarbidge, Bruneau, and Owyhee Field Offices. The responsible official is:

BLM Wyoming State Director – Don Simpson

Address - 5553 Yellowstone Ave, Cheyenne, Wyoming 82009

The Gateway West Geotechnical Drilling Project EA number is WY-060-EA09-88.

### 1.1 Need for Proposed Action

The applicant's purpose for the proposed action was initiated in January 2009, when the Companies submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (SF-299 form) to conduct geotechnical sampling along the proposed route of the Gateway West transmission line project (including alternatives) from the new Windstar substation north of the existing Dave Johnston Power Plant at Glenrock, Wyoming to the new Hemingway substation southwest of Boise, Idaho (**Figure 1**). The total length of the transmission line is approximately 1,149 miles on private, state, and federal lands and alternatives add approximately 873 miles of alternative routes that need a geotechnical investigation. The need for the proposed action is to collect hydrogeologic and geotechnical soil properties for the engineering design of the proposed transmission line.

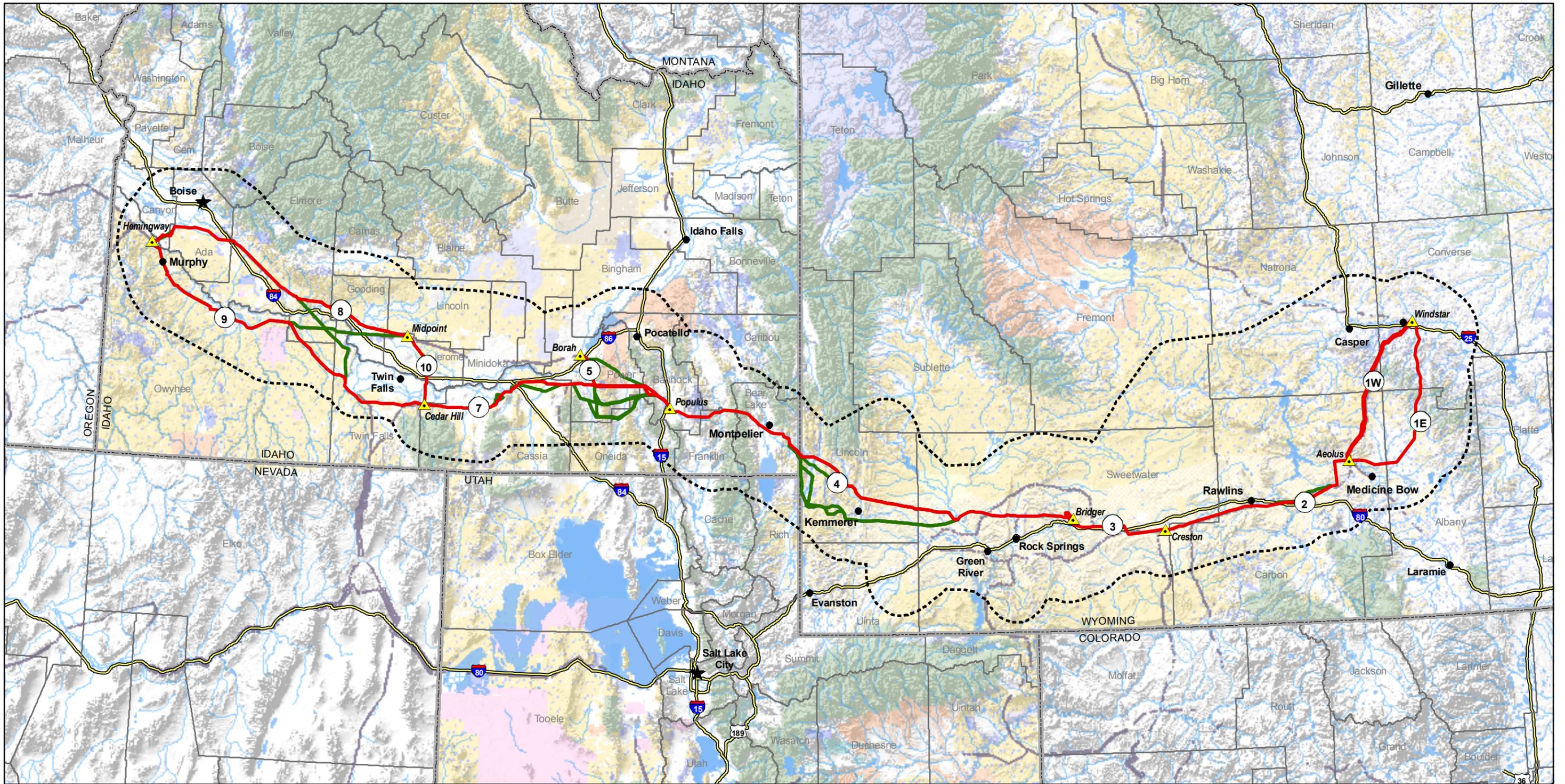
BLM's purpose and need stems from the overarching policy and direction in the Federal Land Policy and Management Act of 1976, as amended (FLPMA) and its mission, multiple use management of the National System of Public Lands. BLM's purpose and need is further guided by the National Energy Policy Act of 2005, which recognizes the need to improve domestic energy production, develop renewable energy resources, and to enhance the infrastructure for collection and distribution of energy resources across this nation. To this end, BLM is charged with analyzing applications for utility and transportation systems on federal lands.

BLM's action in this regard is to analyze the application, define the proposed action and a reasonable range of alternatives, consider the environmental consequences of the proposed action and alternatives, and render a decision on the application. The decision to be made by BLM is to allow the proposed action as proposed, allow the proposed action with modification, allow one of the alternatives including necessary modifications, or to deny the application.

## 1.2 Conformance with Land Use Plans

This proposed action is subject to the RMPs listed in **Table 1-1**. These plans have been reviewed to determine if the proposed action conforms with the land use plan terms and conditions as required by 43 CFR 1610.5. The project is in compliance with all the current and pending plans because the proposed action does not include activities that are: excluded, occurring during a period where it is prohibited, or produce effects that exceed an established standard.

<b>Field Office</b>	<b>Plan Name</b>	<b>Plan Date</b>
Casper	Casper RMP	2007
Rawlins	Rawlins RMP	2008
Rock Springs	Green River RMP	1997
Kemmerer	Kemmerer RMP	1986
Pocatello	Pocatello RMP	1988
Shoshone	Monument RMP	1986
Bruneau	Bruneau MFP	1983
Burley	Cassia RMP	1985
Burley	Twin Falls MFP	1987
Four Rivers	Kuna Management Framework Plan (MFP)	1983
Four Rivers	Snake River Birds of Prey National Conservation Area (NCA) RMP	2008
Four Rivers	Cascade RMP	1987
Jarbidge	Jarbidge RMP	1987
Owyhee	Owyhee RMP	1999



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Enlarged Area  
This Sheet

<b>Project Features</b>		<b>Administrative</b>	
Approximate Substation Location	City	County Boundary	Bureau of Land Management
Proposed Route	State Boundary	Bureau of Reclamation	State Lands
Feasible Alternative Route	Draft West-Wide Energy Corridor	Department of Energy	US Forest Service
Study Area Boundary		Indian Reservation	National Park Service
Draft West-Wide Energy Corridor		Department of Defense	Private
		Limited Access Highway	

Bureau of Land Management	State Lands
Bureau of Reclamation	US Forest Service
Department of Energy	National Park Service
Indian Reservation	Private
Department of Defense	

**Gateway West  
Transmission Line Project  
Idaho, Wyoming**

**Project Overview**

**FIGURE 1-1**

### 1.3 Relationship to Statutes, Regulations, or Other Plans

This EA is prepared pursuant to NEPA and subsequent regulations adopted by the Council on Environmental Quality (40 CFR 1500). Additionally, the project must be reviewed to determine whether it complies with the Endangered Species Act, the Federal Land Policy and Management Act, the Clean Water Act, the Clean Air Act, the National Historic Preservation Act and Executive Orders (EO) covering Environmental Justice (EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations), Noxious Weeds (EO 13112, Invasive Species), and Wetlands (EO 11990, Protection of Wetlands).

### 1.4 Tribes, Individuals, Organizations, or Agencies Consulted

Boreholes would occur on the Fort Hall Indian Reservation and the Tribe has been contacted about the geotechnical drilling. Other interested tribes have been contacted about the Gateway West project. They did not raise any issues other than requiring the consultants doing surveys to obtain a tribal business license and a trespass permit. Private, state, and federal landowners were contacted to obtain permission to access their lands for the testing. Some private land owners denied access and those boreholes have been removed from the project (approximately 50 locations). All agencies and individuals with boreholes on their lands have been sent a notification of the availability of the EA.

### 1.5 Issues

The interdisciplinary team reviewed the proposed geotechnical sampling and a GIS analysis was used to identify what resources might be affected by the proposed project. The GIS analysis was completed using GIS data that was provided by BLM or developed as part of the Gateway West Transmission Line EIS analysis (currently underway) and included consultation currently underway with both the US Fish and Wildlife Service and the Idaho and Wyoming State Historic Preservation Offices. The GIS analysis included the proposed drilling locations and overland access from the nearest road. After reviewing the location of activities and the environmental protection measures (see Section 2.1.3), the interdisciplinary team determined no issues required development of alternatives, some of the resources would need a detailed analysis (even if that resulted in determining there would be no effects), and others would not be affected or would have negligible effects and no detailed analysis would be needed. Following are the resources that were analyzed in detail.

- Cultural Resources;
- Fish and Wildlife;
- Some Threatened, Endangered, and Sensitive Plant and Animal Species (black-footed ferret, gray wolf, North Platte and Colorado River fish, black-tailed prairie dog, burrowing owl, Columbian sharp-tailed grouse, sage grouse, pygmy rabbit, white-tailed prairie dog, Wyoming pocket gopher, mountain plover, and slickspot peppergrass);
- Biological Soil Crust;
- Vegetation;
- Noxious Weeds
- Paleontological Resources;
- Land Uses; and
- Environmental Justice.

The determination of what would be affected included a review of the environmental protection measures (Section 2.1.3) that would be employed to eliminate or minimize potential impacts. Based on the location of the activities, the description of the project, and the environmental protection measures, it was determined that

there would be negligible or no effect on the following resources and therefore they are not analyzed in detail in the environmental assessment.

- Transportation;
- Water;
- Wetlands;
- Visual Quality;
- Geology and Minerals;
- Social and Economic Conditions;
- Grazing;
- Special Designations;
- Soils (other than soil crust);
- Air Quality;
- Native American Religious Concerns;
- Health and Safety;
- Noise;
- Areas of Critical Environmental Concern;
- Waste (Solid/Hazardous);
- Fish (other than threatened and endangered);
- Migratory Birds and Raptors;
- General Wildlife
- Big Game
- Threatened, Endangered, and Sensitive Plant and Animal Species except those listed above;
- Wilderness;
- Farmland, Prime/Unique;
- Forests;
- Wild Horses and Burros
- Floodplains;
- Fire; and
- Wild and Scenic Rivers.

# CHAPTER 2

## PROPOSED ACTION AND ALTERNATIVES

This chapter describes the alternatives that are being analyzed as part of the Gateway West Geotechnical Drilling project (i.e., the Proposed Action and No Action Alternative).

### 2.1 Proposed Action

The proposed action is for the BLM to issue a short term right-of-way grant for drilling on BLM-managed federal lands and access across federal lands for drilling on other federal, private, and state lands. The activities that would result from granting the right-of-way are limited to conducting short-term engineering studies for the proposed Gateway West Transmission Line route to collect hydrogeologic and geotechnical soil properties. This EA discloses the environmental impacts of geotechnical activities on federal, state, and private lands. The requirements for drilling and overland travel are different on BLM-administered lands than on the other ownerships, so the proposed action is described in two parts, activities on BLM and activities on other ownership.

#### 2.1.1 Drilling

An air rotary drill rig is proposed to excavate a total of 279 soil borings on BLM administered lands (**Table 2-1**) and 635 soil borings on other federal, state, and private lands (**Table 2-2**) to evaluate the bearing capacity of site soils for proper structure foundation analyses. The drilling program consists of drilling deep borings from which soil and/or bedrock samples would be taken for laboratory testing and analysis. The boreholes would be 6 to 8 inches in diameter and the borings would typically be 40 feet deep or deeper where soils with weaker strength properties are encountered. Similarly, depths could be less where bedrock is encountered. Soil or rock samples would be collected at regular intervals for analysis of engineering characteristics. Drilling would be completed by Idaho and Wyoming-licensed drillers. Following drilling, the holes would be backfilled with the drill cuttings.

The drilling equipment needed to perform the sampling activities would include a drill rig, water truck, 4-wheel drive support vehicle including an air compressor, and possibly a 4-wheel drive vehicle for the field engineer. The average estimated drilling time per boring is one-half day. The type of rig used would depend on accessibility of boring locations. Types of drilling equipment are listed below:

- Conventional two-ton or larger truck with a drill rig mounted on the chassis (**Figure 2, Figure 3, and Figure 4**).
- A 30,000 pound gross vehicle weight 6-wheeled truck, about 30 feet long, with or without 4-wheel drive capabilities.
- All-terrain vehicle consisting of a similar drilling rig mounted on a lighter framed, shorter vehicle equipped with oversized low-pressure tires. Track-mounted drilling rigs place varying sizes of drilling machinery on a tracked vehicle with low ground pressure (about 10 pounds per square inch) (**Figure 2**).

<b>Table 2-1 Boreholes and Miles of Overland Travel on BLM-Administered Lands by Field Office</b>		
<b>BLM Field Office</b>	<b>Number of Boreholes</b>	<b>Miles of Overland Travel</b>
<b>Wyoming</b>		
Casper	9	0.22
Rawlins	48	3.04
Rock Springs	13	0.07
Kemmerer	53	2.36
<b>Idaho</b>		
Pocatello	20	1.68
Shoshone	22	0.00
Burley	28	0.76
Jarbridge	41	1.49
Four Rivers	26	3.63
Bruneau	10	0.00
Owyhee	9	0.10
<b>Total BLM</b>	<b>279</b>	<b>13.35</b>



Figure 2. Example of Track-Mounted Drill Rig



Figure 3. Example of Drill Rig in Operation



Figure 4. Rubber-Tire Mounted Drill Rig

<b>Table 2-2 Boreholes and Miles of Overland Travel on Other Ownership Lands</b>		
<b>Landowner</b>	<b>Number of Boreholes</b>	<b>Miles of Overland Travel</b>
<b>Wyoming</b>		
Bureau of Reclamation	2	0.0
Private	283	9.86
State	37	1.48
National Forest	3	0
<b>Total Wyoming</b>	<b>325</b>	<b>8.38</b>
<b>Idaho</b>		
Indian Reservation	7	0.05
Military	0	0.15
Private	284	11.8
State	13	1.78
National Forest	6	0
<b>Total Idaho</b>	<b>311</b>	<b>13.8</b>
<b>Total Other Owners</b>	<b>634</b>	<b>22.18</b>

Samples would be collected by driving a sampling device into the undisturbed soils just below the augers. Where bedrock is encountered, rock core samples would be taken using a rock coring barrel. Upon completion and before leaving each site, the soil boring would be backfilled with the drill cuttings. No open holes would be left unattended, and all holes would be fully backfilled before moving.

In addition to the drilling rig, typically there would be an auxiliary 4-wheel drive pickup truck to haul water if needed for drilling and/or rock coring, haul extra drilling supplies, and to transport personnel. A third 4-wheel drive vehicle may be used by the geotechnical engineer overseeing the drilling program and logging the borings.

Borings would be located at every turn in the alignment and approximately every 1.5 miles between turns.

At the drill location, the actual boring is 6 to 8 inches in diameter. However, at each boring location a work area of approximately 40 feet by 40 feet (1,600 square feet, 0.037 acres each) would be established. Within the work area, surface disturbance may occur, due to parked vehicles including the drill truck and support vehicles. Extra foot traffic would occur at the back of

the drill rig as the drill crew moves between the drill and support vehicles during drilling. During rotary drilling and rock coring, water is used during the drilling process. Some excess drill water may exit the hole. A small ditch (less than 6 inches deep and 12 inches wide and less than 10 feet long, 0.0002 acres each) may be necessary beginning at the borehole and extending to a downhill location to drain the excess drill water away from the work area. This ditch would be backfilled when the work is complete. Although excavated soil is proposed to be returned to the boring following drilling, some excess is typically generated. A shovel would be used to spread excess soil behind the drill truck in a layer several inches thick. The area of thin soil spreading is typically less than 10 feet by 10 feet (.0023 acres) and less than 6 inches thick.

As the drilling is critical to design of project structures, the drilling would occur as soon in 2009 as the Companies have received permission and be completed as soon as possible considering seasonal restrictions during the summer and fall of 2009.

Permission to access Federal, state, Indian Reservation, and private property has been requested from the landowners and management agencies where boreholes and overland travel would occur, although responses have not been received from many of them. It is likely that access will be denied to some boreholes or overland travel routes, and therefore the number of boreholes could be reduced. Their inclusion in the EA does not indicate that there is an assumption that access will be granted.

## 2.1.2 Access

To minimize disturbance, drill rig access would be from the nearest existing road to the actual drill site. Roads would not be constructed. To be considered “drilling from existing roads,” most drill sites would be located to allow road traffic to pass without being impeded by drilling equipment and provide a safe working environment for drilling site workers, but no more than 100 feet off the road surface. Where drilling can not be done from existing roads (112 of the boreholes, about 11 percent), overland travel would be required. Vehicles would avoid concentrations of thick vegetation, drainage bottoms, surface water, wetlands, steep slopes, and other sensitive areas to minimize environmental impacts. Access routes would be delineated in consultation with an archaeologist (see Section 2.1.3.1). **Figure 5** and **Figure 6** indicate the locations of the proposed routes where the soil borings and proposed access routes would occur. Maps at a 1:100,000 scale are located on this BLM website at [http://www.wy.blm.gov/nepa/cfodocs/gateway\\_west/documents.php](http://www.wy.blm.gov/nepa/cfodocs/gateway_west/documents.php) showing locations of individual boreholes and overland travel routes.

Access to each of the drill sites was considered in selecting the drill locations. The longest overland travel distance over BLM managed lands is 0.74 miles.

## 2.1.3 Environmental Protection

The Companies and their contractors will use the following procedures to protect resources.

### 2.1.3.1 Cultural Resource Protection Measures

#### Identification and Avoidance of Historic Properties

The drilling locations would be reviewed and compared with information collected during the records review (Henderson, et al. 2009 and Nilsson, et al. 2009) of the proposed transmission alignment, the Phase I Class III inventory completed in 2008 (McNutt, et al. 2009 and Bevill, et al. 2009), and any portions of the Phase II, Class III inventory completed in 2009 prior to drilling. Any drill locations found to be sited on known resources, including historic trail and road segments, would be relocated at a distance determined to be appropriate by the BLM cultural resource specialist.

All drill holes and proposed overland travel (where needed) on both public and private land (where permission has been granted) would be subject to a cultural resources inventory. The Area of Potential Effect (APE) is defined as a 5-acre area around each borehole and a 100-foot wide corridor (50 feet on either side) on the centerline of overland travel. The center line of the surveyed overland travel corridor will be flagged

and marked for relocation by the drilling companies to ensure use of the same routes inventoried by cultural resource crews. No inventory would be conducted on existing access roads because the geotechnical vehicular use of those roads is a “like use” to public use and does not require inventory, subject to a case-by-case review by BLM’s field cultural resource specialists. A full Class-III level, 100 percent inventory would be conducted to BLM standards at each drill site’s APE on public lands and where permitted on private lands. If private land access is denied for the purposes of cultural resource inventories, then that location will be excluded from the short term right-of-way until BLM’s Section 106 obligations have been fulfilled and appropriate consultation completed.

If cultural resources are encountered within the APE of the drill site, the drill location, and the overland travel route that provides access to that location would be relocated by the Companies’ engineer in consultation with the BLM’s cultural resource specialists. The relocation would occur within the 5-acre or 100-foot survey area. All identified cultural resources shall be fully recorded and appropriate site records completed and submitted in the consultant’s cultural resource inventory report.

Sites would be recorded and reports would be prepared in accordance with BLM and SHPO *Cultural Resources Class II and Class III Report Standards* and the terms and conditions of BLM-issued cultural resource use permits. The inventory report will describe and display on maps (7.5’ USGS maps standard) (1) all areas that were inventoried by cultural resource crews; and (2) all recorded sites and isolates including sites located in proposed drilling locations and overland travel routes that were modified due to the discovery of historic properties in the APE. The results of the files searches of the APE shall discuss and display (in text and maps) (a) all areas that have been previously surveyed; (b) all documented and recorded sites; and (c) all project modifications.

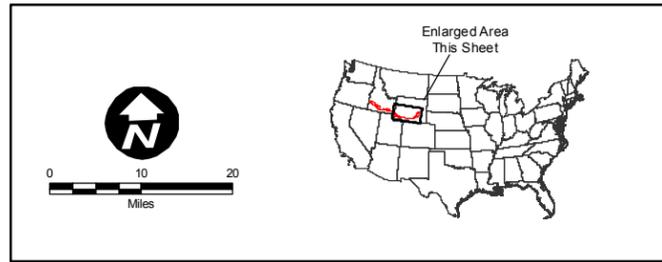
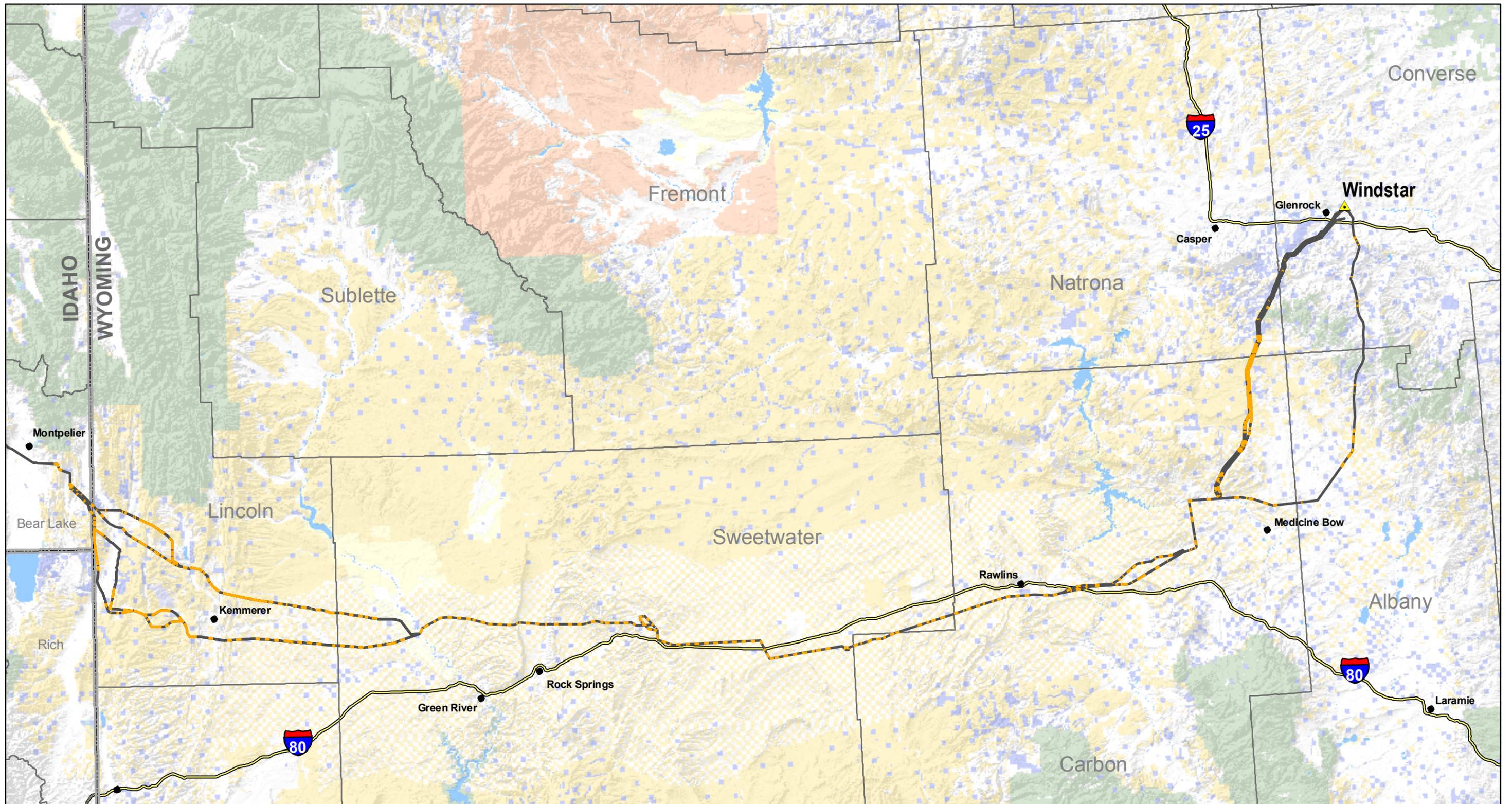
### **Inadvertent Discovery of Cultural Resources**

All personnel involved in the geotechnical investigations would be instructed on site avoidance and protection measures, including information on the statutes protecting cultural resources. This training would be conducted for all personnel prior to initial site mobilization and would be provided to new geotechnical personnel on their first day of work.

In the event that previously unidentified cultural resources are discovered during the geotechnical investigations, the drill crews would immediately cease operations and notify the contract archaeologist and the BLM in accordance with BLM’s standard stipulation for cultural resources. The drilling operations would be redirected to the next area that has been cleared for cultural resources. The contract archaeologist would record, evaluate, and determine the effects on the resource due to the drilling operation. A qualified archaeologist would complete a letter report to assess and document a discovery each time the drilling operations are redirected for such a discovery.

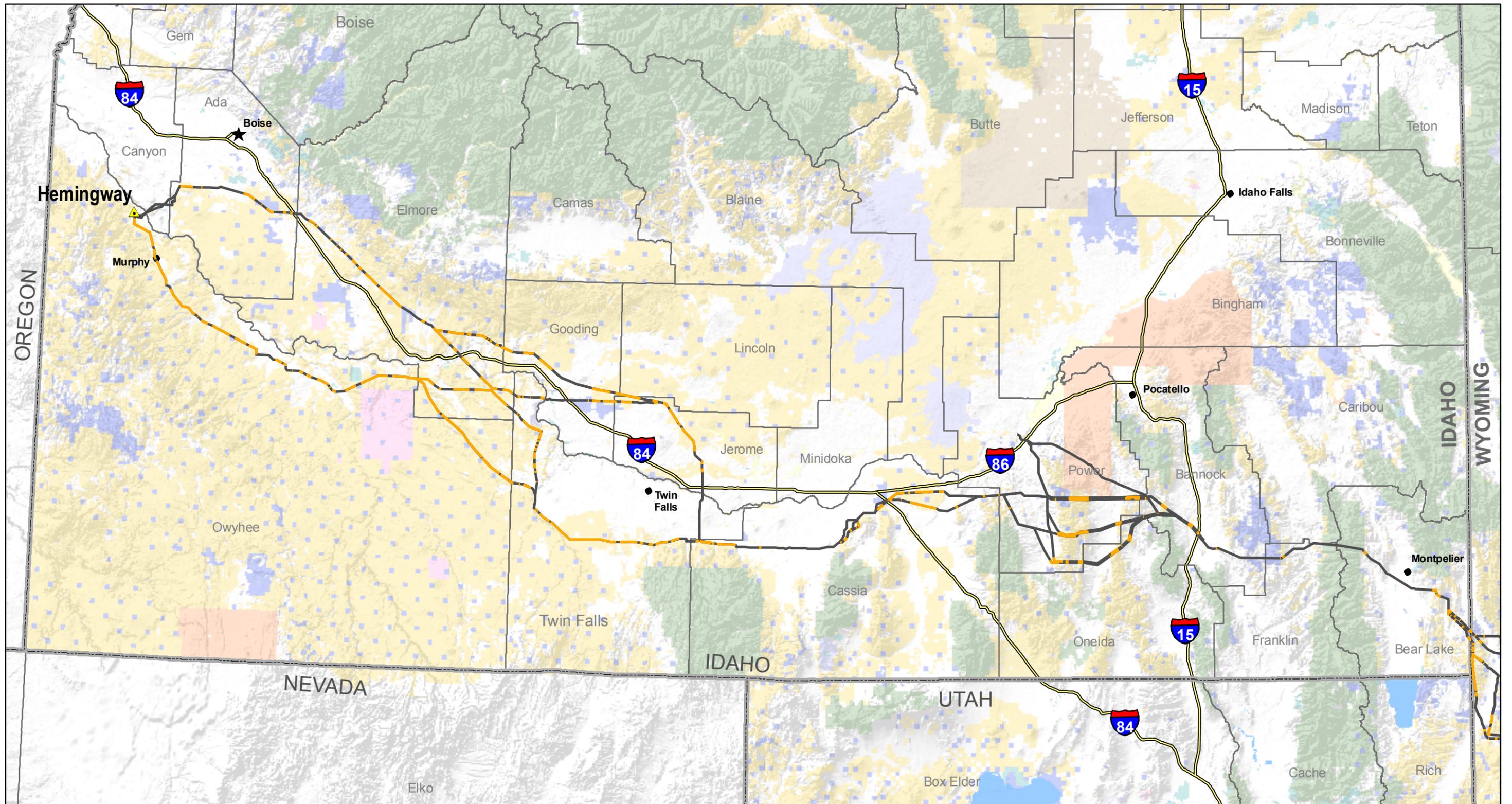
Human remains and associated artifacts may be discovered during inventory or drilling operations. If human remains are discovered under any circumstances, all activities would immediately cease, and the remains would be secured and protected until appropriate disposition has been determined, in accordance with applicable local, state, and Federal statutes. It may be necessary to provide 24-hour on-site security for Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 U.S.C. 3001 et seq.) associated discoveries and for other discoveries as determined by the BLM.

The BLM, along with the appropriate law enforcement representative and county coroner would be immediately notified by phone by the Companies’ representative or their consultant. This would be followed by written notification to the BLM, of any discoveries of human remains, associated and unassociated funerary objects, sacred objects, or objects of cultural patrimony. The BLM would be responsible for compliance with the Native American Graves Protection and Repatriation Act and its implementing regulations (43 CFR 10) for all related inadvertent discoveries and discovery situations.



Project Features	Administrative	Land Status
Approximate Substation Location	City	Bureau of Land Management
Proposed Action – Locations of drilling on BLM	County Boundary	Bureau of Reclamation
Connected Action – Location of drilling Non-BLM	State Boundary	Department of Energy
<p>* Boring and overland travel will occur every 1 to 2 miles along the indicated Proposed Action and Connected Action routes</p>	Interstate Highway	Indian Reservation
		Department of Defense
		US Fish and Wildlife
		State Lands
		US Forest Service
		National Park Service
		Private

**Gateway West**  
**Geotechnical Drilling Project**  
 Proposed **Action**  
 Wyoming  
**Figure 5**



<p><b>Project Features</b></p> <ul style="list-style-type: none"> <li> Approximate Substation Location</li> <li> Proposed Action – Locations of drilling on BLM</li> <li> Connected Action – Location of drilling Non-BLM</li> </ul> <p><small>* Boring and overland travel will occur every 1 to 2 miles along the indicated Proposed Action and Connected Action routes</small></p>	<p><b>Administrative</b></p> <ul style="list-style-type: none"> <li> City</li> <li> County Boundary</li> <li> State Boundary</li> </ul> <p><b>Transportation</b></p> <ul style="list-style-type: none"> <li> Interstate Highway</li> </ul>	<p><b>Land Status</b></p> <table border="0"> <tr> <td> Bureau of Land Management</td> <td> US Fish and Wildlife</td> </tr> <tr> <td> Bureau of Reclamation</td> <td> State Lands</td> </tr> <tr> <td> Department of Energy</td> <td> US Forest Service</td> </tr> <tr> <td> Indian Reservation</td> <td> National Park Service</td> </tr> <tr> <td> Department of Defense</td> <td> Private</td> </tr> </table>	Bureau of Land Management	US Fish and Wildlife	Bureau of Reclamation	State Lands	Department of Energy	US Forest Service	Indian Reservation	National Park Service	Department of Defense	Private
Bureau of Land Management	US Fish and Wildlife											
Bureau of Reclamation	State Lands											
Department of Energy	US Forest Service											
Indian Reservation	National Park Service											
Department of Defense	Private											

**Gateway West  
Geotechnical Drilling Project**  
**Proposed Action  
Idaho**  
**Figure 6**  
 Page 13

### **2.1.3.2 Water**

Approximately 50 gallons of water would be needed for drilling each borehole.

Water from the North Platte River and Colorado River basins would not be used for drilling in other watersheds in order to minimize water usage from these two basins. Water tanks would be filled from gas stations and other public water supplies with permission.

### **2.1.3.3 Noise**

All vehicles and construction equipment would use working mufflers to minimize equipment-related noise.

### **2.1.3.4 Erosion and Sedimentation Control**

Truck traffic would not occur when wet conditions would result in wheel rutting greater than 2 inches in depth.

Vehicles with low ground pressure, such as rubber tracked equipment or balloon tires would be used in areas or conditions where rutting, soils displacement, or compaction could occur.

The Spill Prevention, Containment, and Countermeasures Plan would outline spill prevention practices and requirements for refueling and equipment operation near water bodies, procedures for emergency response and incident reporting, and training requirements.

- Construction spills would be promptly cleaned up and contaminated materials hauled to a disposal site that meets local jurisdictional requirements.
- If an upland spill occurs, berms would be constructed with available equipment to physically contain the spill. Absorbent materials would be applied to the spill area. Contaminated materials would be excavated and temporarily placed on and covered by plastic sheeting in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged (EPA 2006).
- If a spill occurred beyond the scope of on-site equipment and personnel, an Emergency Response Contractor would be identified and available to further contain and clean up the spill.
- For spills in standing water, floating booms, skimmer pumps, and holding tanks would be used as appropriate to recover and contain released materials on the surface of the water.
- If pre-existing contamination is encountered during drilling, work would be suspended in the area of the suspected contamination until the type and extent of the contamination is determined. The type and extent of contamination; the responsible party; and local, state, and federal regulations would determine the appropriate cleanup method(s) for these areas.
- Materials such as fuels, other petroleum products, chemicals, and hazardous materials including wastes would be located in upland areas at least 500 feet away from streams and/or 200 feet from private wells (400 feet from public wells).

### **2.1.3.5 Air Quality**

Drillers would comply with EPA and DEQ standards for drill rig engines.

### **2.1.3.6 Noxious Weeds**

To reduce the spread/introduction of noxious and invasive weed species, drill rigs and transport vehicles would be power washed weekly or when moving from one BLM weed management area to another. An air compressor would accompany the drill rig and be used daily to remove weed parts and seed from all vehicles.

### **2.1.3.7 Wetlands**

No access or drilling would occur through or in wetlands.

### **2.1.3.8 Fire Protection**

All vehicles would be equipped with a working fire extinguisher and a shovel. Drill rigs would be equipped with a filled water tank during periods of high, very high, or extreme fire danger.

Smoking would be restricted to company vehicles and/or designated smoking areas between April 1 and October 30; and all cigarette butts would be placed in appropriate containers year-round.

Campfires or uncontained fires of any kind would be prohibited.

The crew contingency plan would include a fire communications protocol for contacting fire-fighting personnel.

### **2.1.3.9 Lands**

Utility clearances would be conducted on every borehole before entry to the site. Clearances would be conducted by a certified utility locator. It would be up to the discretion of the utility locators as to whether a site visit is necessary for any borehole.

Any fences that need to be cut for access would be repaired to their original conditions before the drilling crew leaves the area, or immediately if livestock are present.

### **2.1.3.10 Public and Crew Safety**

Drillers would develop a Health and Safety Plan which includes the following information (at a minimum):

- Identification of responsible parties;
- Identification of potential physical, chemical, or environmental hazards and relevant health and safety precautions;
- Required personal protective equipment;
- Emergency evacuation procedures;
- Location and content of warning signs to be posted;
- Local emergency telephone numbers would be posted at drilling locations.

### **2.1.3.11 Biological Protection Measures**

All seasonal restrictions associated with BLM RMPs would be followed on BLM administered lands. If the Companies desire to operate within areas of seasonal restrictions, the process for requesting and granting exceptions will be followed, as described in the Rawlins RMP.

To comply with the 6840 manual direction, and the USDI Conservation Agreement (2006) concerning slickspot peppergrass, the following measures would be employed for boreholes and overland travel routes listed in **Appendix A** and **Appendix B**.

- a. A BLM Botanist or approved knowledgeable contract botanist would accompany the drilling crews to identify the access and coordinate the actual drilling location. The list of qualified botanists in Idaho includes Tetra Tech, Boise; URC Corporation, Boise; Mancuso Botanical Services, Boise; Dr. James Smith, Boise; Dr. Don Mansfield, Caldwell; and Alderspring Ecological Consulting, Tendoy, Idaho.
- b. Full field clearances (inventory) would be conducted in the vicinity of the drilling locations prior to access and drilling to identify avoidance areas.

- c. Boring in or overland crossing of any slickspot peppergrass plants or habitat would be avoided as determined by the slickspot peppergrass consideration zone or clearance survey.
- d. Disturbed soils would be seeded with appropriate certified weed free native seed (broadcast, raked-in, species such as Sandberg bluegrass (*Poa secunda*)).

To avoid or minimize effects on BLM Special Status plants, all BLM special status plants encountered would be avoided on BLM lands. Surveys would be conducted on BLM lands by a qualified botanist prior to overland travel or borings, discovered plants would be flagged and overland travel rerouted and boreholes relocated if necessary to avoid the plant by a minimum of 164 feet.

Drilling vehicles would confine their travel to a single overland route.

On BLM lands, vehicles would avoid disturbing areas of large sagebrush to protect pygmy rabbit habitat.

To avoid effects on black-footed ferrets everywhere and mountain plover, and burrowing owls on BLM lands, surveys for prairie dog towns would be conducted before drilling. Prairie dog towns identified during surveying would be flagged and avoided by at least 50 feet. Tables in **Appendix A** and **Appendix B** indicate which boreholes on BLM administered lands need to be surveyed for prairie dog towns.

Many areas with seasonal restrictions limit the implementation of the drilling program to several months in the late summer and early fall. Drilling activities would abide by seasonal restrictions, stipulations, or avoidance areas. After consultation between BLM and Companies' staff prior to any field activities, exceptions to the seasonal restrictions may be requested by the Companies and granted by BLM.

In any locations where surveys would be required, the Companies would conduct these clearances using qualified professional biologists and botanists, in communication with Field Office BLM biologists and botanists, and using BLM-approved survey protocol or procedures.

## 2.2 No Action Alternative

Selection of the no action alternative would be the BLM denying the right-of-way application. No geotechnical survey would occur on the National System of Public Lands related to the Gateway West project. The Companies could, depending on approval by other agencies and landowners, conduct a geotechnical survey on other lands. Denial of the right-of-way to conduct the geotechnical survey would not result in a denial of implementation of the Gateway West transmission line project, should it be approved later. The activities that would occur under the no action alternative are those described for "Other Ownership" (**Table 2-2**) in the proposed action, including the drilling, overland travel, and environmental protection measures. Environmental protection measures that would not apply to the no action alternative are the biological survey and avoidance requirements for BLM special status species and BLM RMP required seasonal restrictions. Cultural resource inventory, consultation, avoidance, and reporting would apply.

## 2.3 Comparison of Alternatives

**Table 2-3** contains a comparison of the effects of the proposed action and no action alternative on the resources analyzed.

<b>Table 2-3 Comparison of Effects</b>		
<b>Resource/Issue</b>	<b>Proposed Action</b>	<b>No Action</b>
Cultural and Historical Resources	No Effect	No Effect
Sensitive Species	May impact individuals, not likely to lead to a trend in federal listing.	May impact individuals, not likely to lead to a trend in federal listing.
Threatened and Endangered, and (except Colorado River Fish)	No Effect	No Effect
Colorado River Fish	May affect, likely to adversely affect	May affect, likely to adversely affect
Soil Crust	Negligible Effect	Negligible Effect
Vegetation	Negligible Effect	Negligible Effect
Noxious Weeds	Negligible Effect	Negligible Effect
Paleontological Resources	Minor negative and positive effects	Minor negative and positive effects
Land Uses	Negligible Effect	Negligible Effect
Environmental Justice	No Effect	No Effect

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## **CHAPTER 3**

# **AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

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This chapter describes the current conditions of the resources that might be affected and the likely consequences of the proposed action and no action alternative. Scoping was completed to evaluate the resources that needed to be analyzed based on the potential that they could be affected. Due to the nature of the project, including the short time frame and small area of effect, the proposed action is unlikely to have a substantial effect on most resources.

### **3.1 Cultural and Historical Resources**

#### **3.1.1 Affected Environment**

The history and prehistory of human use of the project area has been recently summarized in BLM Class I survey reports (Henderson, et al. 2009 and Nilsson, et al. 2009) for both Idaho and Wyoming. Additionally, BLM Phase I Class III surveys have been completed for over 190 miles (in one-mile survey blocks) along the proposed transmission line alignment, and documented in McNutt, et al. 2009 and Bevill, et al. 2009. These reports have documented a wide range of sites representing over 12,000 years of human activity. Of special interest in the project area are the National Historic Trails, including the Emigrant and Oregon trails. For trails, both the physical integrity and the integrity of the setting are important. Numerous trail segments across Wyoming and Idaho have been identified and assessed for physical integrity and integrity of setting.

#### **3.1.2 Direct and Indirect Effects**

##### **3.1.2.1 Proposed Action**

Implementation of the survey, reporting, and approval plan described in Section 2.1.3.1 would ensure that any previously known or newly recorded cultural resources would be avoided by access and drilling activities. There would be no direct impact (disturbance) on any National Historic Trails, as all drilling activities would be located a minimum of 100 feet from trail segments. No vegetation removal, road blading, or pad clearing would occur.

##### **3.1.2.2 No Action**

Protection of cultural resources in the no action would be the same as described for the proposed action; therefore, effects would be the same.

#### **3.1.3 Cumulative Effects**

As there would be no direct or indirect effects, there would be no cumulative effects.

### **3.2 Fish and Wildlife**

#### **3.2.1 Affected Environment**

Many wildlife species occur throughout the project area. Most would not be affected, or effects would be negligible, such as raptors, migratory birds, and small mammals due to the short term nature of the project and minimal disturbance. These groups will not be discussed further. Other species specific discussions occur in Section 3.3 - Threatened, Endangered, and Sensitive Species. Because big game have additional regulatory considerations, they are discussed below.

Of the big game species present, pronghorn, elk, and mule deer are the most common, while bighorn sheep, moose, and white-tailed deer are less common. The project area provides wintering habitat for these species. This habitat is important for the health of the populations of large ungulates because the winters, particularly on the Wyoming steppe and in the Idaho foothills, can be very harsh. Similarly, the project would cross through important calving/fawning areas.

## 3.2.2 Direct and Indirect Effects

### 3.2.2.1 Proposed Action

The project area includes big game winter and calving/fawning areas, however, there would be no temporary or permanent loss of habitat. The drilling and overland travel would not occur during calving/fawning periods in those areas important to big game. With the environmental protection measures in place, there would be no effect on big game due to the limited extent of each drilling and time frame of disturbance in each area, and seasonal restrictions on BLM lands. While seasonal restrictions would not apply to other ownership lands, the winter conditions that would make the winter range most important for these species would also likely result in delaying any drilling for crew safety, operational conditions, and sampling integrity. Therefore, there would be no effect on big game from drilling and overland travel on other ownerships as well.

### 3.2.2.2 No Action

The no action would have the same effects as the proposed action.

## 3.2.3 Cumulative Effects

There would be a negligible contribution of cumulative effects on wildlife, and no contribution of effects on big game.

## 3.3 Threatened, Endangered, and Special Status Species

### 3.3.1 Affected Environment

#### Threatened and Endangered Species

##### Wildlife

##### *Black-Footed Ferret (Endangered)*

Approximately 2,204,851 acres of suitable habitat have been mapped for the black-footed ferret within Wyoming (non-block-cleared areas). No habitat occurs in Idaho. Black-footed ferret habitat occurs within the Rawlins, Rock Springs, and Kemmerer Field Offices. The boreholes and overland access where suitable habitat for the black-footed ferret occurs are shown in **Appendix A** and **Appendix B**).

##### *Gray Wolf (Non-Essential Experimental Populations - Wyoming)*

As the gray wolf is considered a habitat generalist, and does not require a specific habitat type for survival, gray wolves could potentially be present along any portion of the project regardless of habitat type with the exception of heavily used agricultural land. The closest they have been documented to the project is near Cokeville, Wyoming in 2003. No critical habitat has been designated within Wyoming (USFWS 1978). Gray wolves will not be affected and will not be discussed further.

##### *North Platte and Colorado River Species (Endangered)*

Part of the project area drains into the Colorado River and the Platte River. The Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), bonytail (*Gila elegans*), humpback chub (*Gila cypha*) are all listed as endangered. Platte River species include the pallid sturgeon (*Scaphirhynchus albus*),

also listed as endangered, as are interior populations of the least tern (*Sterna antillarum*), piping plover (*Charadrius melodus*), whooping crane (*Grus americana*), and critical habitat for whooping crane.

**Plants**

Endangered and threatened plant species that may occur in the counties crossed are shown in **Table 3-1**. Several species are listed but have no potential to occur within the analysis area, including Goose Creek milkvetch, Christ’s paintbrush, blowout penstemon, Colorado butterfly plant, and desert yellowhead.

<b>Table 3-1 Federally Listed Threatened, Endangered, and Proposed Plant Species</b>					
<b>Species</b>	<b>Status</b>	<b>Habitat</b>	<b>Range</b>	<b>Potential for Occurrence</b>	
				<b>Idaho</b>	<b>Wyoming</b>
Western prairie fringed orchid <i>Platanthera praeclara</i>	T	Moist prairies and sedge meadows downstream of Wyoming	Does not occur in analysis area, but projects in North Platte River watershed in Wyoming that involve water depletions could affect this species.	None –no proposed or alternate facilities are in Platte River watershed	Eastern portions of the project are in the Platte River watershed.
Ute ladies’-tresses orchid <i>Spiranthes diluvialis</i>	T	Moist stream banks, wet meadows, and abandoned stream channels; 5100-5200 ft	Occurs in eight states, including ID and WY. May occur in all counties in analysis area in WY. In ID, occurs in Jefferson, Madison, Bonneville, and Fremont counties.	Unlikely – analysis area is outside known range in Idaho	May occur in analysis area wherever suitable habitat is present in Wyoming.
Slickspot peppergrass <i>Lepidium pappillium</i>	P	Slickspot microsites in sagebrush steppe	Reported from Ada, Canyon, Gem, Elmore, Payette, and Owyhee Counties, ID	Occurs in the Jarbidge and Four River Field Offices.	None – does not occur in Wyoming

Status: E = endangered, T = threatened, P = proposed

**BLM Sensitive and Other Special Status Species**

Bald eagle, northern leopard frog, and Preble’s meadow jumping mouse, would not be affected by the activities due to the timing, duration of activity, and extremely limited disturbance area. These species would not be discussed further.

*Black-Tailed Prairie Dog*

Current estimates indicate that there are only 229,607 acres of suitable prairie dog habitat within Wyoming (USFWS 2008). The suspected locations of black-tailed prairie dog colonies/complexes were mapped with the use of aerial photography (Tetra Tech, 2009). The project would cross through suspected black-tailed prairie dog colonies and complexes, on its very eastern portion.

*Burrowing Owl*

In Idaho, burrowing owls are distributed in patches throughout the southern half of the state. In Wyoming, they occur and breed throughout most of the state with highest concentrations in the south and east. Suitable habitat for the burrowing owl was mapped where the species range overlaps the project area. Habitat for the burrowing owl exists along the entire route.

*Columbian Sharp-Tailed Grouse*

Suitable habitat for the Columbian sharp-tailed grouse was mapped where the species range overlaps the project area. The project area occurs within 2 miles of 44 leks which have been active within the last 5 years.

### *Gray Wolf*

Gray wolf was removed from the endangered species list in Idaho on May 4, 2009 and is therefore considered a special status species by BLM. As the gray wolf is considered a habitat generalist, and does not require a specific habitat type for survival, gray wolves could be present regardless of habitat type with the exception of heavily used agricultural land. Gray wolves in Idaho would not be affected and will not be discussed further.

### *Greater Sage Grouse*

Greater sage grouse are widely distributed throughout sagebrush-dominated habitats in southern Idaho and throughout Wyoming. The state of Wyoming has established areas designated as core habitat and the state of Idaho has established key areas designated as crucial habitat for the greater sage grouse. These areas were delineated around high concentrations of leks and other suitable habitat features frequented by this species. The project area occurs within both Wyoming's core and Idaho's key habitat. However, core/key habitats do not consist entirely of suitable habitat, and are instead a matrix of suitable and unsuitable habitat. Forty-six boreholes would occur within 2 miles of a lek which have been active within the last 5 years.

### *Pygmy Rabbit*

Habitat for the pygmy rabbit exists within all portions of the project. The geotechnical drilling and overland travel would cross suitable habitat, which some would be considered quality habitat. In addition, the BLM has mapped areas where the pygmy rabbit could occur on BLM.

### *White-Tailed Prairie Dog*

The white-tailed prairie dog does not occur in Idaho. In Wyoming, it inhabits primarily the western two-thirds of the state. Suitable habitat was mapped where the species' range overlaps the project area.

### *Wyoming Pocket Gopher*

The known distribution of the Wyoming pocket gopher is restricted to the south-central portion of Wyoming, as it is known to inhabit an area along the Carbon and Sweetwater county lines. The closest historical record of a Wyoming pocket gopher near the project area was from 1976, and was located approximately 0.5 mile north of the project (WYNDD 2008) and probably occurs in other areas.

### *Mountain Plover*

The mountain plover does not occur in Idaho. In Wyoming, it occurs and breeds throughout most of the state. Suitable habitat for the mountain plover was mapped where the species' range occurs within the project area.

### *Sensitive Plants*

Sensitive plants that may occur within the project area and where habitat may be affected include 7 species in Wyoming and 35 species in Idaho. Sensitive plants may be found in all vegetation types listed in Table 3-7, although it is unlikely any would occur in the agriculture/disturbed vegetation type. For the effects analysis, it is assumed that sensitive plants are located at all boreholes and overland travel within suitable habitat for the particular plant species in its geographic range.

## **3.3.2 Direct and Indirect Effects**

### **3.3.2.1 Proposed Action**

#### **Threatened and Endangered Species**

##### **Wildlife**

All federally listed species except of Colorado River fish had a "No Effect" determination. **Table 3-2** gives justifications for these determinations.

**Table 3-2**  
**Justifications for Effects Determinations of Federally Listed Wildlife Species**

Common Name	Listing	Rationale
Black-Footed Ferret	Endangered	No effect – survey and avoid would eliminate drilling in colonies.
Canada Lynx	Threatened	No effect – no trees would be removed and therefore no denning or forage habitat would be affected. No lynx habitat will be impacted and there is no likelihood of encountering lynx due to the extremely short-term and small extent of the project.
Columbia Spotted Frog	Candidate	No effect – no drilling in or access through riparian habitats would occur.
Gray wolf - Wyoming	Experimental, non-essential	No impact – wolves not affected by this type of activity.
Idaho Ground Squirrel	Northern-Threatened/ Southern-Candidate	No effect – no habitat within project area.
Wyoming Toad	Endangered	No effect – no drilling in or access through riparian habitats would occur.
Yellow-Billed Cuckoo	Candidate	No effect – no drilling in or access through riparian habitats would occur.
Platte River Fish	Endangered	No effect – water depletion less than 100 acre-foot.
Colorado River Fish	Endangered	May affect, likely to adversely affect – any water depletion results in this determination.
Interior least tern	Endangered	No effect – water depletion less than 100 acre-foot.
Piping plover	Endangered	No effect – water depletion less than 100 acre-foot.
Whooping crane and critical habitat for whooping crane	Endangered	No effect – water depletion less than 100 acre-foot.

### North Platte and Colorado River Species

Endangered fish species, interior populations of the least tern, piping plover, whooping crane, and critical habitat for whooping crane are affected by activities that deplete or degrade the flow of waters in the Upper Colorado and North Platte River Basins. Both the North Platte and Upper Colorado basins would be used as a water source for drilling. Consumptive water depletions would occur. Water needed for drilling would be less than 50 gallons per borehole. The water depletion was calculated using 50 gallons per hole, considering all the boreholes (Table 3-3).

**Table 3-3**  
**Proposed Action Water Depletion by River Basin**

Ownership	North Platte Boreholes	Gallons	Acre-Feet	Upper Colorado Boreholes	Gallons	Acre-Feet
BLM	50	2,500	0.000071	47	2,350	0.000067
BOR	0	0	0	2	100	0.000003
Private	142	7,100	0.000203	110	5,500	0.000157
State	28	1,400	0.000040	1	50	0.000001
USFS	3	150	0.000004	0	0	0
<b>Total</b>	223	11,150	0.000318	160	8,000	0.000228

In addition to the 0.00007 acre-feet used on boreholes on BLM lands, boreholes would occur within the North Platte and Upper Colorado River basins on lands owned by others. The water usage in each basin was calculated using 50 gallons per borehole. Together, the proposed action boreholes would result in a total

depletion in the North Platte of 0.00035 acre-feet and in the Upper Colorado of 0.00027 acre-feet. For the North Platte, the total depletion is below the *de minimus* threshold of 0.1 acre-foot, therefore, no effects on Platte River species would occur. Any depletion in the Colorado River would result in a “may affect, likely to adversely affect” determination.

### Plants

Environmental protection measures requiring that surveys be conducted for threatened or endangered plants and avoiding overland travel and drilling where they are found would protect the species and individual plants from effects. Water depletions in the Platte River would not indirectly affect the Western prairie fringed orchid because they would be minimal (see **Table 3-3**). There would be no effect on threatened or endangered plants. **Table 3-4** summarizes the determinations and rationale.

Common Name	Listing	Rationale
Western prairie fringed orchid	Threatened	No impact – water depletion below <i>de minimus</i> threshold
Ute ladies’-tresses orchid	Threatened	No impact – suitable habitat to be surveyed and avoided.
Slickspot peppergrass	Proposed	No impact – suitable habitat to be surveyed and avoided.

### BLM Sensitive and Other Special Status Species

The project may impact individual BLM sensitive and other special status species analyzed, but is not likely to impact these species at a population level basis, nor is it likely to result in trends towards Federal listing of these species. With the exception of sage grouse, all special status species that are likely to be present in the analysis area on BLM managed lands would have surveys conducted and boreholes and overland travel that may affect them would be relocated. Sage grouse are addressed below.

#### Greater Sage-Grouse and Columbian Sharp-tailed Grouse

Due to the limited extent of the disturbance (0.037 acres per borehole) from trampling and the short-term nature of the activities (one-half day per boring), there is no potential direct and indirect impacts on greater sage-grouse or sharp-tailed grouse from direct habitat loss (leks or sagebrush) and fragmentation. Where the boring and overland travel would occur in greater sage-grouse or Columbian sharp-tailed grouse habitats the drilling and one-time overland travel would not cause surface disturbance or fragmentation of sagebrush habitat. Seasonal restrictions would apply, therefore increased human activity may disturb grouse and make them relocate for half a day, but not during critical periods. Effects on sage grouse and Columbian sharp-tailed grouse would be the temporary disturbance. The geotechnical boring and overland travel may impact individuals, but is not likely to contribute to a trend towards Federal listing or loss of viability for the greater sage-grouse or Columbian sharp-tailed grouse.

#### BLM Sensitive Plants

As discussed in the vegetation section, a total for the entire project of 2.1 acres would be disturbed to where plants may be affected, and 34 acres would be trampled (see Table 3-7). Trampling would likely not cause long-term effects on plants. Environmental Protection Measures would minimize the trampling from overland travel. Due to the minimal amount of disturbance, geotechnical boring and overland travel may impact individuals, but is not likely to contribute to a trend towards Federal listing or loss of viability. Surveys for sensitive plants on BLM managed lands would be conducted at the appropriate time to identify the presence of the species. Boreholes and overland travel locations can easily be moved to avoid impacts on sensitive plants. Should a plant or plant population be located, the borehole or overland travel would be relocated.

### 3.3.2.2 No Action

#### Threatened and Endangered Species

Protection measures for listed species would be the same as described for the proposed action, therefore the effects of the no action would be the same as the proposed action. None of the listed species would be affected, with the exception of Colorado River fish.

#### North Platte and Colorado River Fish

The water usage in each basin on other ownership lands was calculated using 50 gallons per borehole (**Table 3-3** minus BLM). The total depletion in the North Platte from drilling on other ownership would be 0.000279 acre-feet and the Upper Colorado would be 0.00024 acre-feet. For the North Platte, the total depletion is below the *de minimus* threshold of 0.1 acre-foot, therefore, no effects on Platte River species would occur. As under the proposed action, any depletions in the Colorado River would result in a “may affect, likely to adversely affect” determination for Colorado River fish.

#### Plants

Protection measures that apply to the proposed action would also apply to the no action. There would be no impact on threatened or endangered plant species.

### 3.3.3 Cumulative Effects

As there would be no direct or indirect effects on special status wildlife or plants from the proposed action or the no action, there would be no cumulative effects on these species with the exception of Colorado River fish and greater sage grouse.

The depletion in the North Platte River would have no direct or indirect effect on Platte River fish, therefore there would be no cumulative effects. The one-time, exceedingly small depletion would contribute negligible cumulative effects to the condition of the Colorado River fish.

Important greater sage grouse habitat was mapped and avoided in laying out the location of the drill holes and overland travel and timing restrictions would apply. The negligible effects on grouse from temporary disturbance would contribute to cumulative effects from past and present activities.

## 3.4 Soil Crust

Biological soil crusts refer to the algae, moss, liverwort, fungi, bacteria, and lichens that grow on soils between vegetation. They are important for maintaining soil moisture and prohibiting invasive plants. Crusts are important for enriching soils, reducing erosion, and affecting fire spread.

### 3.4.1 Affected Environment

The analysis area has not been uniformly surveyed for soil crusts, however, because of the ecosystems involved, it can be assumed that crusts occur on all of the BLM managed lands within the analysis area. Vegetation types of prairie, perennial grasslands, and sagebrush steppe have biological soil crust cover consisting of mosses, lichens, and green algae. Biological soil crusts are not common in heavily forested areas.

### 3.4.2 Direct and Indirect Effects

#### 3.4.2.1 Proposed Action

Soil crusts would be directly affected by the drilling and associated overland travel. Both activities would crush, bury, or displace biological crust. There is a risk that overland travel would interfere with the water supply to biological crust if rutting were to occur (USDI 2001). As environmental protection measures are in

place to avoid rutting, the risk of indirect effects would be minimal. Given that both the direct and indirect effects would occur on limited areas, effects on the scale of the travel path could be severe; however, landscape level effects would most likely be “light”. While crusts that are disturbed may take hundreds of years to recover from, single trips by two or three vehicles to and from the borehole would disturb very little of the crust on a landscape scale. The boreholes themselves would result in comparatively small areas of bare soils. Based on the vegetation types (grasses or shrub cover), **Table 3-5** indicates the number of boreholes in the proposed action that could have biological crusts near their locations.

Number of Boreholes	Miles of Overland Travel	Acres Potentially Affected <sup>1</sup>
722	5.1	37.2

Source: Based on Vegetation Mapping conducted for the Gateway West Transmission Line EIS, Tetra Tech 2009.

### 3.4.2.2 No Action

Based on the vegetation types (grasses or shrub cover), **Table 3-6** indicates the number of boreholes by landowner that could have biological crusts near their locations. The effects on soil crust from the no action would be the same as described for the proposed action. There would be fewer miles of overland travel and boreholes, the effects would be minor due to the minimal disturbance.

Number of Boreholes	Miles of Overland Travel	Acres Potentially Affected <sup>1</sup>
433	17.53	20.2

<sup>1</sup> Acres of trampling includes 1600 square feet of work area per borehole plus .06 acres per mile of overland travel

### 3.4.3 Cumulative Effects

Due to the limited extent of the effects and the scale, the project would contribute only minor negative effects to the soil crust due to the minimal amount of disturbance that would occur. Local effects, on the scale of the travel path, may be detectable for some time in the most sensitive locations but would be less noticeable in areas of greater vegetative diversity. Some damage to soil crusts may have already occurred as a result of previous recreational, grazing, road construction, and other ground disturbing activities in the past throughout the project area. In such cases, the disturbance created by the proposed actions would add to the total disturbance to the extent that the proposed and existing disturbances do not overlap.

## 3.5 Vegetation

### 3.5.1 Affected Environment

Vegetation types where the drilling and overland access would occur include agriculture (farmed areas), conifer forest, deciduous forest, greasewood, sagebrush, juniper, native grass, other shrub, sagebrush, saltbush, semi-natural grass, and wetland. Some of the greasewood and sagebrush types have been disturbed from their natural state. In a few areas, no data are available because the boreholes and overland travel routes were determined after the vegetation mapping occurred and fell outside those mapped areas. In these locations, vegetation types represented are assumed to be along the same percentages as the known sites.

## 3.5.2 Direct and Indirect Effects

### 3.5.2.1 Proposed Action

Overland travel to access the drilling sites would occur for approximately 38.5 miles. **Table 3-7** indicates how many miles of overland travel would occur in each vegetation type along with the disturbed acres and trampled acres. As the drill rig would avoid large plants, the effects would be crushing of small forbs and shrubs. Because access would be prohibited when soil conditions are wet, these plants would recover quickly.

Vegetation Type	Boreholes	Acres Disturbed <sup>1</sup>	Miles of Overland Travel	Acres Trampled <sup>2</sup>
Agricultural/Disturbed	188	0.4	7.59	8.8
Conifer forest	22	0.1	0.0	0.8
Deciduous forest	15	0.0	0.0	0.6
Juniper	3	0.0	2.70	0.8
Miscellaneous	4	0.0	0.0	0.1
Native grass	224	0.5	28.18	15.2
Other shrub	82	0.2	0.0	3.0
Rabbit brush	2	0.0	0.0	0.0
Sagebrush	354	0.8	0.0	13.1
Saltbush	20	0.0	0.0	0.7
<b>Total</b>	<b>915</b>	<b>2.1</b>	<b>38.47</b>	<b>33.9</b>

1 Acres disturbed includes soil dispersed from drilling, maximum per borehole of 10 feet by 10 feet (.0023 acres per borehole).

2 Acres of trampling includes 1600 square feet of work area per borehole plus .06 acres per mile of overland travel.

Disturbance caused by the drilling would disturb vegetation in a very small area (100 square feet per hole, maximum, .0023 acres) by burying some of it in up to 6 inches of soil (total of 2.1 acres distributed along the project routes). However, the actual drilling location would avoid vegetation. The 40 foot by 40 foot work area would trample 1,600 square feet (0.037 acres per drill hole). Only the actual boring (50 square inches per borehole) and the immediate area of boring spoils (100 square feet) would disturb vegetation enough to have an effect (dig up and kill plants or change the soil structure so that some vegetation does not return for a few years). Given this small amount of disturbance, the overall effect on vegetation would be negligible.

### 3.5.2.2 No Action

Approximately 25.1 miles of overland travel would occur as a result of the activities on other ownership lands. **Table 3-8** shows the mapped vegetation types where boreholes and overland travel would occur. Although there would be fewer boreholes occurring in the no action, the effects on vegetation would be the same as the proposed action.

## 3.5.3 Cumulative Effects

There would be negligible direct effects on vegetation; therefore the project would contribute negligible cumulative effects to the condition of the vegetation in the analysis area.

## 3.6 Noxious Weeds and Invasive Species

Noxious weed is a legal term, meaning any plant officially designated by a federal, state, or local agency as injurious to public health, agriculture, recreation, wildlife, or property (Shelley and Petroff 1999). Invasive

species are those whose introduction cause or is likely to cause economic or environmental harm or harm to human health.

**Table 3-8  
Other Ownership Boreholes and Miles of Overland Access by Vegetation Type**

Vegetation Type	Boreholes	Acres Disturbed <sup>1</sup>	Miles of Overland Travel	Acres Trampled <sup>2</sup>
Agricultural/Disturbed	170	0.4	7.59	2.2
Conifer forest	18	0.0	0.0	0.7
Deciduous forest	11	0.0	0.0	0.4
Juniper	3	0.0	2.12	0.5
Miscellaneous	3	0.0	0.0	0.1
Native grass	131	0.3	15.41	4.0
Other shrub	62	0.1	0.0	2.3
Sagebrush	232	0.5	0.0	8.6
Saltbush	5	0.0	0.0	0.2
<b>Total</b>	<b>636</b>	<b>2.1</b>	<b>25.12</b>	<b>19</b>

1 Acres disturbed includes soil dispersed from drilling, maximum per borehole of 10 feet by 10 feet (.0023 acres per borehole).

2 Acres of trampling includes 1600 square feet of work area per borehole plus .06 acres per mile of overland travel

### 3.6.1 Affected Environment

There are many invasive and noxious weed species that are known or expected to occur in the analysis area. Project-specific information is not consistently available. The BLM uses the Idaho and Wyoming State lists for managing weeds on federal lands, and the BLM in Wyoming also manages county declared species.

### 3.6.2 Direct and Indirect Effects

#### 3.6.2.1 Proposed Action

Overland travel could spread weeds and invasive plants if plant parts are attached to the vehicles when they leave the roadway. This would be of particular concern if the vehicle had left an infested area previously, and then entered an area that was not infested. The requirement to periodically wash and blow off plant parts from the vehicles would minimize this impact.

The drilling would cause an exceedingly small amount of disturbed area which would be a new place for weeds and invasive species to become established, however, the environmental protection measures would prevent or minimize the spread of weeds. The drilling would slightly increase the risk of weeds.

#### 3.6.2.2 No Action

As in the proposed action, the no action would occur in areas where weeds and invasive plants are known to occur. As the environmental protection measures to prevent the spread of weeds are the same for the no action as the proposed action, the effects would be the nearly the same, although fewer areas would be crossed so there is a slightly lower risk of spreading weeds and invasive plants.

### 3.6.3 Cumulative Effects

Either alternative would add to the risk of spreading noxious weeds and invasive plants. Impacts would continue as a result of natural conditions and/or existing development in the analysis area.

## 3.7 Paleontological Resources

### 3.7.1 Affected Environment

Paleontological resources (fossils) are important scientific and educational resources because of their use in (1) documenting the presence and evolutionary history of particular groups of now extinct organisms, (2) reconstructing the environments in which these organisms lived, and (3) in determining the relative ages of the strata in which they occur. Fossils are also important in determining the geologic events that resulted in the deposition of the sediments in which they were buried.

Paleontological resources are recognized as nonrenewable scientific resources and are afforded protection by Federal statutes and policies including the Antiquities Act of 1906, the Federal Land Policy Management Act of 1976, and the Omnibus Public Land Management Act of 2009 also includes requirements for the management of paleontology on public lands.

The BLM has a system of rating the sensitivity of geologic units known as the Potential Fossil Yield Classification (BLM 2008). The five basic levels are:

1. Very low – not likely that a geologic unit has recognizable fossil remains.
2. Low – not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils
3. Moderate or unknown - various significance, abundance, and predictable occurrence or unknown fossil potential
4. High – high occurrence of significant fossils
5. Very High - highly fossiliferous and predictable or significant fossils that are at risk of adverse impacts or degradation

The project crosses numerous geologic units ranging in age from very old Precambrian granites to late Quaternary sediments. Likewise, the classifications of the units crossed include all five sensitivity levels. For the Wyoming portion, the records of the Geological Museum of the University of Wyoming in Laramie were utilized. Those of the Idaho Museum of Natural History, Pocatello, Idaho were employed for the Idaho portion.

### 3.7.2 Direct and Indirect Effects

Numerous geologic units of moderate to high paleontological sensitivity occur within the proposed segment alignments and alternative routes of the project that would be subjected to drilling activities. Direct impacts to potentially important fossil remains would be minimal, consisting of drilling into sensitive formations. Disturbance due to drilling activities affords the opportunity to recover specimens and associated scientific information. The drilling program would also furnish information regarding the amount of soil overlying sensitive formations, helping to determine the need for additional monitoring during construction of the transmission line should it be approved.

#### 3.7.2.1 Proposed Action

Drilling has the potential for minor direct impacts to sensitive geologic units. Because the individual drill holes are so small and the number of holes is low compared with the extent of the geologic units, impacts would be insignificant. Offsetting these impacts is the opportunity to better define soil coverage and location of sensitive formations along the proposed alignment.

### 3.7.2.2 No Action

The no action drilling would occur under the same condition as the proposed action and therefore the effects on paleontological resources would be the same as described under the proposed action.

### 3.7.3 Cumulative Effects

Because the impacts of the proposed drilling are minor, any contribution to a regional destruction of sensitive fossil remains would be insignificant. Collection of samples from sensitive geologic units could add minor contributions to the knowledge of the fossil record.

## 3.8 Land Uses

### 3.8.1 Affected Environment

Land uses on BLM managed lands include grazing, farming, rights-of-way, and roads. Vegetation mapping was used to identify which land uses exist where boreholes or overland travel would occur. Agriculture was a vegetation type that was identified. It was assumed that all vegetation types except forest, wetlands, and developed areas on BLM-administered lands had grazing occurring on them, although it is likely that not all of them would be. The location of the boreholes and access roads compared to the mapped land uses indicate that rights-of-way and roads would not be directly affected by the project.

### 3.8.2 Direct and Indirect Effects

#### 3.8.2.1 Proposed Action

Overland travel would not affect farming or grazing. There would be 41 locations where overland travel would occur on BLM-managed lands assumed to be used for grazing. It is likely that some of these locations would require crossing a fence, although the extent is unknown. As the drillers would be required by the Environmental Protection Measures to repair any damages to their original condition before they leave the area, there would be no effect on grazing from overland travel.

Drilling would affect up to 0.037 acres per hole. In agricultural land uses on BLM-administered lands, this amounts to one-tenth of an acre total of the farmed area and 9.7 acres in grazing. These acres would be distributed along the 1,150 miles of the project. The vegetation within the drilling working area would be trampled. The minor extent of the impact and the short-term nature of one time impact means there would be no impact on grazing or farming.

All drilling locations would have a utility clearance completed before access to the sites would be permitted. This would ensure that current rights-of-way or easements would not be affected by the project.

Areas of agriculture and grazing would be distributed along the 1,150 miles of the project (**Table 3-9**). The vegetation within the drilling working area would be trampled. The minor extent of the impact and the short-term nature of one time impact means there would be no impact on grazing. Drilling actively farmed fields would not occur without the landowner's permission.

<b>Land Use Based on Vegetation Mapping</b>	<b>Number of Boreholes</b>	<b>Acres Disturbed<sup>1</sup></b>	<b>Miles of Overland Travel</b>	<b>Acres Trampled<sup>2</sup></b>
Agriculture (farming)	188	0.4	7.6	8.8
Grazing	665	1.0	30.9	26.5

<sup>1</sup> Acres disturbed includes soil dispersed from drilling, maximum per borehole of 10 feet by 10 feet (.0023 acres per borehole).

<sup>2</sup> Acres of trampling includes 1600 square feet of work area per borehole plus .06 acres per mile of overland travel

Boreholes would not have any effects on land uses that occur on BLM-administered lands because immediately following completion of the sampling, the boreholes would be filled.

All drilling locations would have a utility clearance completed before access to the sites would be permitted. This would ensure that current rights-of-way would not be affected by the project.

Boreholes would not have any effects on land uses because immediately following completion of the sampling, the boreholes would be filled.

**3.8.2.2 No Action**

In agricultural land uses, acres affected would amount to 5 acres total of the farmed area and 25 acres in grazing. These acres would be distributed along the 1,150 miles of the project. The vegetation within the drilling working area would be trampled. The minor extent of the impact and the short-term nature of one time impact means there would be no impact on grazing. Drilling actively farmed fields would not occur without the landowner’s permission.

All drilling locations would have a utility clearance completed before access to the sites would be permitted. This would ensure that current rights-of-way or easements would not be affected by the project.

Boreholes would not have any effects on land uses because immediately following completion of the sampling, the boreholes would be filled.

<b>Land Use Based on Vegetation Mapping</b>	<b>Number of Boreholes</b>	<b>Acres Disturbed<sup>1</sup></b>	<b>Miles of Overland Travel</b>	<b>Acres Trampled<sup>2</sup></b>
Agriculture (farming)	170	0.4	7.6	8.1
Grazing	433	1.0	20.3	20.3

1 Acres disturbed includes soil dispersed from drilling, maximum per borehole of 10 feet by 10 feet (.0023 acres per borehole).

2 Acres of trampling includes 1600 square feet of work area per borehole plus .06 acres per mile of overland travel

**3.8.3 Cumulative Effects**

There would be no cumulative effects on land uses, because there would be no direct or indirect effects.

**3.9 Environmental Justice**

**3.9.1 Affected Environment**

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires each Federal agency to make the achievement of environmental justice part of its mission by identifying and addressing disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low income populations. The Order further stipulates that the agencies conduct their programs and activities in a manner that does not have the effect of excluding persons from participation in, denying persons the benefits of, or subjecting persons to discrimination because of their race, color, or national origin.

Guidelines provided by the Council on Environmental Quality (CEQ) (1997) and U.S. Environmental Protection Agency (US EPA) (1998) indicate that a minority community may be defined as either: 1) where the minority population comprises more than 50 percent of the total population, or 2) where the minority population of the affected area is meaningfully greater than the minority population in the general population

of an appropriate benchmark region used for comparison. Minority communities may consist of a group of individuals living in geographic proximity to one another, or a geographically dispersed set of individuals who experience common conditions of environmental effect. Further, a minority population exists if there is “more than one minority group present and the minority percentage, as calculated by aggregating all minority persons, meets one of the above-stated thresholds” (CEQ 1997, p. 26).

### **Race and Ethnicity**

The populations of Wyoming and Idaho are predominantly white, comprising 84 percent and 86 percent of the estimated populations in these states in 2007, compared to 66 percent in the United States as a whole. Hispanic or Latinos are the largest minority group ranging from 27 percent of the population in Power County to 3 percent of the population in Bear Lake and Oneida counties.

None of the potentially affected counties had minority populations in 2000 that exceeded 50 percent of the total population. The percent of the population identifying as White alone in the 2000 Census exceeded 50 percent in all cases, with shares ranging from 67 percent to 99 percent. As a result, none of these areas met the definition of a “minority community” based on the criteria that the minority population comprises more than 50 percent of the total population.

To determine whether a “minority population in the general population of an appropriate benchmark region used for comparison” occurs in the analysis area, the demographics of census block groups was evaluated in comparison to the county demographics. The most recent year that census race and ethnicity data are available at the census block group level is 2000. The percent of population in each census block group was also compared with its respective county percentage in 2000. This comparison identified five census block groups where the share of the population comprised of persons of Hispanic or Latino origin was more than 10 percent higher than the county average (U.S. Census Bureau 2000a).

### **Income and Poverty**

The percent of the population below the poverty level in Wyoming in 2007 was lower than the national average (9.5 percent versus 13.0 percent) while the percent of the population below the poverty level in Idaho in 2007 was also lower than the national average (12.1 percent versus 13.0 percent).

The most recent year that income and poverty data are available at the census block group level is 1999. One of the affected census block groups had more than 20 percent of its population below the poverty level in 1999. Four others had between 19.5 percent and 20 percent of their population below the poverty level. The U.S. Census Bureau defines a poverty area as a census tract or other area where at least 20 percent of residents are below the poverty level (U.S. Census Bureau 2008a).

## **3.9.2 Direct and Indirect Effects**

### **3.9.2.1 Proposed Action**

While there are minority and low income communities in the vicinity of the proposed action, the proposed action would not generate disproportionately high and adverse human health or environmental effects on nearby communities, because there would be no impacts on human health and the negligible environmental effects would not occur near the low income or minority populations more than other places.

### **3.9.2.2 No Action**

The no action would occur in the same counties as the proposed action and the effects of the no action are the same as described under the proposed action.

### **3.9.3 Cumulative Effects**

As there would be no direct or indirect effects from the proposed action or no action alternative, neither would have cumulative effects on environmental justice populations.

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**Appendix A**  
**BLM Survey Requirements**  
(Applies to Proposed Action)

In addition to the species specific requirements for surveys listed in **Table A-1** and **Table A-2**, surveys are required prior to drilling or overland travel for all BLM special status plants.

<b>Table A-1 Proposed Action Drill Site Surveys on BLM Lands</b>		
<b>BoringID</b>	<b>Field Office</b>	<b>Surveys Needed</b>
08-481	Four Rivers	LEPA Potential Habitat
08-485	Four Rivers	LEPA Potential Habitat
08-495	Four Rivers	LEPA Potential Habitat
08-498	Four Rivers	LEPA Potential Habitat
08-502	Four Rivers	LEPA Potential Habitat
08-509	Four Rivers	LEPA Potential Habitat
08-512	Four Rivers	LEPA Potential Habitat
08-514	Four Rivers	LEPA Potential Habitat
08-519	Four Rivers	LEPA Potential Habitat
08-895	Four Rivers	LEPA Potential

<b>Table A-1 Proposed Action Drill Site Surveys on BLM Lands</b>		
<b>BoringID</b>	<b>Field Office</b>	<b>Surveys Needed</b>
		Habitat
04-205	Kemmerer	Year-round restrictions
04-206	Kemmerer	Year-round restrictions
04-208	Kemmerer	Year-round restrictions
04-783	Kemmerer	Black-footed ferret
04-790	Kemmerer	Black-footed ferret
04-791	Kemmerer	Black-footed ferret
04-792	Kemmerer	Black-footed ferret
04-793	Kemmerer	Black-footed ferret
02-144	Rawlins	Black-footed ferret
02-147	Rawlins	Mountain Plover Black-footed ferret
02-571	Rawlins	Black-footed ferret
03-152	Rawlins	Black-footed ferret
03-156	Rawlins	Black-footed ferret
04-176	Rock Springs	Black-footed ferret
04-199	Rock Springs	Black-footed ferret

In addition to surveys for all BLM special status plants, **Table A-2** indicates where surveys are required prior to drilling or overland travel for black-footed ferret, burrowing owl, mountain plover, and Ute ladies'-tresses.

<b>Table A-2 Proposed Action Overland Road Surveys</b>			
<b>Field Office</b>	<b>Overland ID</b>	<b>Miles</b>	<b>T&amp;E Surveys Needed</b>
Four Rivers	724	0.083	Slickspot Peppergrass
Four Rivers	724	0.031	Slickspot Peppergrass
Four Rivers	724	0.042	Slickspot Peppergrass
Four Rivers	769	0.046	Slickspot Peppergrass
Four Rivers	769	0.108	Slickspot Peppergrass
Four Rivers	769	0.021	Slickspot Peppergrass
Four Rivers	769	0.027	Slickspot Peppergrass

<b>Table A-2 Proposed Action Overland Road Surveys</b>			
<b>Field Office</b>	<b>Overland ID</b>	<b>Miles</b>	<b>T&amp;E Surveys Needed</b>
Four Rivers	769	0.417	Slickspot Peppergrass
Four Rivers	771	0.012	Slickspot Peppergrass
Kemmerer	2670	0.207	Black-footed ferret
Rawlins	1768	0.596	Black-footed ferret
Rawlins	1768	0.000	Black-footed ferret
Rawlins	2623	0.116	Black-footed ferret
Rock Springs	2635	0.000	Black-footed ferret

**Appendix B**  
**Other Ownership Survey Requirements**  
(Applies to Proposed Action and No Action Alternatives)

The boreholes listed in **Table B-1** are located in area where surveys for federally listed Threatened and Endangered or Proposed species may occur on other ownership. Surveys would be performed before drilling occurs, and if the species is located, the borehole would be moved to avoid impacts on the listed species. Most boreholes on other ownership land do not occur in areas where threatened and endangered species could occur and are not listed in the table.

<b>Table B-1 Other Ownership Boreholes Where Surveys Are Required</b>		
<b>Borehole</b>	<b>Owner</b>	<b>Survey Needed</b>
02-1	Private	blowout penstemon, Ute ladies'-tresses
02-139	Private	black-footed ferret
02-140	Private	black-footed ferret
02-141	Private	black-footed ferret
02-142	Private	black-footed ferret
02-143	Private	black-footed ferret
02-145	Private	black-footed ferret
02-146	Private	black-footed ferret
02-572	Private	black-footed ferret
02-587	Private	blowout penstemon
02-588	Private	blowout penstemon
02-596	Private	black-footed ferret
02-597	Private	black-footed ferret
02-600	Private	black-footed ferret
03-149	Private	black-footed ferret
03-150	Private	black-footed ferret
03-151	Private	black-footed ferret
03-152	Private	black-footed ferret
03-153	Private	black-footed ferret
03-154	Private	black-footed ferret
03-155	Private	black-footed ferret
03-573	Private	black-footed ferret
03-601	Private	black-footed ferret
04-173	Private	black-footed ferret
04-175	Private	black-footed ferret
04-177	Private	black-footed ferret
04-178	Private	black-footed ferret
04-180	Private	black-footed ferret
04-201	Private	black-footed ferret
04-202	Private	black-footed ferret
04-203	Private	black-footed ferret
04-204	Private	black-footed ferret
04-207	Private	black-footed ferret

<b>Table B-1 Other Ownership Boreholes Where Surveys Are Required</b>		
<b>Borehole</b>	<b>Owner</b>	<b>Survey Needed</b>
04-209	Private	black-footed ferret
04-210	Private	black-footed ferret
04-211	Private	black-footed ferret
04-614	Private	black-footed ferret
04-720	Private	black-footed ferret
04-776	Private	black-footed ferret
04-777	Private	black-footed ferret
04-778	Private	black-footed ferret
04-779	Private	black-footed ferret
04-784	Private	black-footed ferret
04-785	Private	black-footed ferret
04-786	Private	black-footed ferret
04-787	Private	black-footed ferret
04-788	Private	black-footed ferret
04-789	Private	black-footed ferret
04-794	Private	black-footed ferret
08-484	Private	slickspot peppergrass
08-487	Private	slickspot peppergrass
08-491	Private	slickspot peppergrass
08-494	State	slickspot peppergrass
08-496	State	slickspot peppergrass
08-497	Private	slickspot peppergrass
08-499	Private	slickspot peppergrass
08-502	Private	slickspot peppergrass
08-503	Private	slickspot peppergrass
08-504	Private	slickspot peppergrass
08-505	Private	slickspot peppergrass
08-506	Private	slickspot peppergrass
08-507	Private	slickspot peppergrass
08-508	Private	slickspot peppergrass
08-515	State	slickspot peppergrass
08-520	State	slickspot peppergrass

**Table B-2** indicates which overland travel routes on other ownership that need surveys for Federally Listed Threatened and Endangered species may occur. Surveys would be performed before drilling occurs, and if the species is located, the area would be flagged so that overland travel would avoid impacts on the listed species. Most overland travel on other ownership lands does not occur in areas where threatened and endangered species could occur and routes are not listed in the table.

<b>Table B-2 Other Ownership Overland Travel Requiring Survey</b>			
<b>Route</b>	<b>Owner</b>	<b>Survey Needed</b>	<b>Miles</b>
5	Private	blowout penstemon	0.115
6	Private	blowout penstemon	0.035
522	Private	black-footed ferret	0.249
524	Private	black-footed ferret	0.478
588	Private	black-footed ferret	0.324
589	Private	black-footed ferret	0.103
608	Private	black-footed ferret	0.762
609	Private	black-footed ferret	0.359
611	Private	black-footed ferret	1.073
732	Private	black-footed ferret	0.638
734	Private	black-footed ferret	0.320
738	Private	black-footed ferret	0.274
982	Private	black-footed ferret	0.190
984	Private	black-footed ferret	0.051
1232	Private	black-footed ferret	0.038
1233	Private	black-footed ferret	0.153
1241	Private	black-footed ferret	0.285
1523	Private	blowout penstemon	0.007
1594	Private	black-footed ferret	0.012
1596	Private	black-footed ferret	0.012
1598	Private	black-footed ferret	0.061
1599	Private	black-footed ferret	0.457
1782	Private	black-footed ferret	0.086
1783	Private	black-footed ferret	0.566
1785	Private	black-footed ferret	0.002
1838	Private	black-footed ferret	0.119
1839	Private	black-footed ferret	0.194
1843	Private	black-footed ferret	0.144
2355	Private	slickspot peppergrass	0.112
2394	Private	slickspot peppergrass	0.040

<b>Table B-2 Other Ownership Overland Travel Requiring Survey</b>			
<b>Route</b>	<b>Owner</b>	<b>Survey Needed</b>	<b>Miles</b>
2402	Private	slickspot peppergrass	0.265
2404	Private	slickspot peppergrass	0.187
2405	State	slickspot peppergrass	0.554
2408	Private	slickspot peppergrass	0.139
2408	Private	slickspot peppergrass	0.444
2409	State	slickspot peppergrass	0.032
2409	State	slickspot peppergrass	1.621
2410	Private	slickspot peppergrass	0.013
2411	State	slickspot peppergrass	0.873
2416	Private	slickspot peppergrass	1.650
2423	Private	slickspot peppergrass	0.903
2441	Private	slickspot peppergrass	0.061
2462	Private	slickspot peppergrass	0.260
2464	Private	slickspot peppergrass	0.530
2582	Private	slickspot peppergrass	0.126
2584	Private	slickspot peppergrass	0.417
2590	Private	slickspot peppergrass	0.049
2673	State	slickspot peppergrass	0.437
2677	Private	slickspot peppergrass	0.042
2698	Private	slickspot peppergrass	0.070
3360	Private	slickspot peppergrass	0.169
3360	Private	slickspot peppergrass	0.364
3361	State	slickspot peppergrass	0.004
3361	State	slickspot peppergrass	0.780
3481	Private	slickspot peppergrass	0.003
3481	Private	slickspot peppergrass	0.422
3487	Private	slickspot peppergrass	0.087
3505	Private	slickspot peppergrass	0.046
3509	State	slickspot peppergrass	0.920