

# Environmental Assessment

## Endurance/Barricade Gas Infrastructure Project

**BLM**

Rawlins Field Office

August 2013



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 BLM 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-13/025+1310**

**DOI-BLM-WY-030-2013-0151-EA**

**Environmental Assessment  
DOI-BLM-WY-030-2013-0151-EA  
August 2013**

**Endurance/Barricade Gas Infrastructure Project  
Sweetwater County, Wyoming**

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**Location:** Township 13 N, Range 91 W, Sections: 4, 5, 6, 7  
Township 13 N, Range 92 W, Sections: 10, 11, 12, 15, 17, 19, 20  
Township 13 N, Range 93 W, Sections: 19, 20, 21, 22, 23, 24  
Township 13 N, Range 94 W, Sections: 13, 18, 19, 21, 22, 23, 24  
Township 13 N, Range 95 W, Sections: 3, 4, 10, 13, 14, 15  
Township 14 N Range 96 W, Sections: 1, 12, 13  
Township 14 N Range 95 W, Sections: 1, 4, 5, 6, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20,  
21, 29, 32, 33  
Township 14 N Range 94 W, Section: 6  
Township 15 N Range 95 W, Sections: 4, 9, 16, 17, 20, 21, 28, 29, 31, 32, 33  
Township 16 N Range 95 W, Sections: 28, 33  
Sweetwater County, Wyoming

**Applicants/Addresses:** Samson Resources Company  
370 17<sup>th</sup> Street, Suite 3000  
Denver, CO 80202

Mountain Gas Resources, LLC  
1099 18<sup>th</sup> Street, Suite 1800  
Denver, CO 80202

**U.S. Department of the Interior  
Bureau of Land Management  
Rawlins Field Office  
1300 North Third Street  
P.O. Box 2407  
Rawlins, WY 82301  
Phone: (307) 328-4200  
Fax: (307) 328-4224**

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## ACRONYMS AND ABBREVIATIONS

1	AO	Authorized Officer
2	AUM	animal unit month
3	BBL	barrel
4	CEQ	Council on Environmental Quality
5	dba	decibel
6	DFPA	Desolation Flats Project Area
7	EA	environmental assessment
8	EIS	environmental impact statement
9	ENAR	Endurance Northern Access Road
10	ESA	Endangered Species Act
11	FLPMA	Federal Land Policy and Management Act
12	FONSI	Finding of No Significant Impact
13	HMA	herd management area
14	hp	horsepower
15	HUC	Hydrologic Unit Code
16	ID	Interdisciplinary
17	MLA	Mineral Leasing Act of 1920
18	MMSCF/D	million standard cubic feet per day
19	Mph	Miles Per Hour
20	NAAQS	National Ambient Air Quality Standards
21	NEPA	National Environmental Policy Act
22	NI	not impacted
23	NO <sub>2</sub>	Nitrogen dioxide
24	NOS	Notice(s) of Staking
25	NP	not present
26	NRHP	National Registry of Historic Places
27	NWI	National Wetland Inventory
28	O <sub>3</sub>	Ozone
29	PI	potential impact
30	PM <sub>10</sub>	Particulate matter with a diameter greater than 10 microns
31	POD	plan of development
32	RFO	Rawlins Field Office
33	RMP	Resource Management Plan
34	ROD	Record of Decision
35	ROW	right(s)-of-way
36	SHPO	State Historic Preservation Office
37	SSRP	Site-Specific Reclamation Plans
38	USACE	U.S. Army Corps of Engineers
39	USGCRP	U.S. Global Change Research Program
40	VRM	visual resource management
41	WAAQS	Wyoming Ambient Air Quality Standards
42	WDEQ	Wyoming Department of Environmental Quality
43	WGFD	Wyoming Game and Fish Department

## CHAPTER 1 – INTRODUCTION AND NEED FOR PROPOSED ACTION

1 THIS ENVIRONMENTAL ASSESSMENT IS TIERED TO AND REFERENCES THE DESOLATION FLATS  
2 NATURAL GAS FIELD DEVELOPMENT PROJECT FINAL ENVIRONMENTAL IMPACT STATEMENT  
3 AND RECORD OF DECISION

### 4 Identifying Information

5 **Title:** Endurance/Barricade Gas Infrastructure Project Environmental Assessment.

6 **EA Number:** DOI-BLM-WY-030-2013-0151-EA.

7 **Proposed Action:** Construct a new access road, install two pipelines (one 16-inch and one 20-inch  
8 pipeline) along the new access road, construct two new compressor sites, obtain right-of-way (ROW)  
9 access to these compressor sites, and install high and low pressure loop pipelines.

10 **Location:** Township 13N, Ranges 91-95W, Township 14N, Ranges 94-96W, Township 15N, Range 95W,  
11 and Township 16N, Range 95W, across a total of 66 Sections in Sweetwater County, Wyoming

12 **Preparing Office:** Rawlins Field Office (RFO).

13 **Lease/Case File Number:** See Table 1-1.

### 1.1 Applicants: Samson Resources Company and Mountain Gas Resources, LLC.

### 1.2 Introduction

14 The Samson Resources Company and Mountain Gas Resources, LLC (Applicants) submitted SF-299  
15 applications to the Bureau of Land Management (BLM), RFO for ROW grants, (WYW numbers and dates  
16 listed in Table 1-1) in the Desolation Flats Natural Gas Field Development Project Area (DFPA) located in  
17 Township 13N, Ranges 91-95W, Township 14N, Ranges 94-96W, Township 15N, Range 95W, and  
18 Township 16N, Range 95W, across a total of 66 Sections in Sweetwater County ( Project or Project Area).  
19 The Project would result in approximately 495 acres of initial surface disturbance and 33 acres of long-  
20 term surface disturbance on BLM land.

**Table 1-1. Applicants' Proposed Actions Submitted to the BLM**

Applicant	Proposed Action	Location	BLM Serial Number
Samson Resources Company	Construct New Access Road	T16N, R95W: Sec. 33 T15N, R95W: Sec. 4, 9, 16, 17, 20	WYW-170826
Mountain Gas Resources	Install Two Pipelines (one 16-inch and one 20-inch diameter pipeline)	T16N, R95W: Sec. 33 T15N, R95W: Sec. 4, 9, 16, 17, 20, 21, 28	WYW-170827 WYW-181188
Mountain Gas Resources	Construct Two New Compressor Sites	T14N, R95W: Sec. 9, 10, 15 (East Site) T14N, R96W: Sec. 1 (West Site)	WYW-181513 (East) WYW-181512 (West)
Mountain Gas Resources	Obtain ROW Access to Proposed Compressor Sites	T13N, R91W: Sec. 4, 5, 6, 7 T13N, R92W: Sec. 10, 11, 12, 15, 17, 19, 20 T13N, R93W: Sec. 19, 20, 21, 22, 23, 24 T13N, R94W: Sec. 13, 18, 19, 21, 22, 23, 24 T13N, R95W: Sec. 3, 4, 10, 13, 14, 15 T14N, R95W: Sec. 9, 10, 16, 17, 18, 20, 29, 32, 33 T14N, R96W: Sec. 1, 12, 13	WYW-182142
Mountain Gas Resources	Install a High (16-inch diameter) and Low Pressure Loop Pipeline (one 20-inch diameter)	T15N, R95W: Sec. 28, 29, 31, 32, 33; T14N, R96W: Sec. 1, 12, 13; T14N, R95W: Sec. 1, 4, 5, 6, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, 20, 21 T14N, R94W: Sec. 6	WYW-181267 (Pressure Reducing Loop) WYW-181470 (High Pressure Loop)

### 1.3 Purpose and Need

1 The purpose of the proposed action is to provide the Applicants access to a limited number of  
2 appropriate locations for oil and gas infrastructure developments in the Project Area. The construction  
3 of a new access road, the Endurance Northern Access Road (ENAR), would provide needed access to the  
4 Endurance and Barricade Units from the Wamsutter production area. Installation of two pipelines (one  
5 16-inch and one 20-inch pipeline) along the ENAR, the high pressure and pressure reducing loop  
6 pipelines (16-inch and 20-inch pipelines), and the Barricade East and Barricade West compressor sites  
7 supports oil and gas development while allowing for the efficient gathering and delivery to the market  
8 of existing and future natural gas developed in the Endurance and Barricade unit(s). Obtaining ROW to  
9 access the compressor sites is necessary for construction and maintenance. The need of the proposed  
10 action is to respond to the Federal Land Policy and Management Act of 1976 (FLPMA) and Mineral  
11 Leasing Act of 1920 (MLA) ROW requests, listed in Table 1-1, to construct a new access road, install two  
12 pipelines (one 16-inch and one 20-inch pipeline) along the new access road, construct two new  
13 compressor sites, obtain ROW to access the compressor sites, and install high and low pressure loop  
14 pipelines on public lands administered by the BLM RFO.

### 1.4 Decisions to be Made

15 The BLM will decide whether or not to grant the ROW applications and if so, under what terms and  
16 conditions.

## 1.5 Scoping

1 *Internal Scoping:* On-site inspections of the proposed action were conducted with the Applicants on July  
2 18, 2012, and May 21, 2013. In addition, the BLM conducted internal on-site inspections for specific  
3 resources in 2012 and 2013. A kickoff meeting was held on November 27, 2012. The meeting included  
4 the BLM interdisciplinary (ID) team, the Applicants, and the third-party contractor. On March 5, 2013,  
5 the BLM held another project meeting with the ID Team, the Applicants, and the third-party contractor  
6 to discuss the Proposed Action. The ID Team reviewed the Proposed Action and determined issues of  
7 concern for multiple resources identified in Appendix A, which are addressed in this environmental  
8 assessment (EA).

9 The BLM reviewed the Applicants' proposed activities to assess the type and magnitude of potential  
10 impacts to resources and resource uses on the BLM-administered land. Appendix A, ID(ID) Team  
11 Checklist contains a list of all resources considered. The "Potentially Impacted" (PI) resources, as  
12 identified by the BLM as part of internal scoping, are listed below with issue statements describing the  
13 potential impact. These resources are carried forward for description in the Affected Environment  
14 section (Chapter 3) and analysis in the Environmental Consequences section (Chapter 4) of this EA.  
15 Resources that the BLM identified as "Not Impacted" (NI) by the Proposed Action or "Not Present" (NP)  
16 in the Project Area, as documented in the ID Team Checklist (Appendix A), were not carried forward for  
17 detailed analysis.

18 *External Scoping:* Formal external scoping was not conducted on this project as the Project Area is  
19 located within and tiered to findings in the -DFPA Environmental Impact Statement (EIS), which has been  
20 analyzed and assessed in compliance with National Environmental Protection Act (NEPA) standards.  
21 The BLM issued a news release and sent notifications regarding the availability of this EA and its review  
22 period to local governments, individuals, non-governmental organizations, allotment holders, and other  
23 stakeholders on the project mailing list. See Chapter 5 for consultation and coordination details.

## CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

1 This EA analyzes three alternatives, the Applicants' Proposed Action (Alternative A), the 14-foot ENAR  
2 Roadway (Alternative B), and the No Action Alternative (Alternative C). No additional action alternatives  
3 have been identified. The No Action Alternative is considered and analyzed to provide a baseline for  
4 comparison of the impacts of the Proposed Action. The Proposed Action and Alternative C integrate the  
5 terms and conditions in the DFPA record of decision (ROD) (BLM 2004a).

### 2.1 Alternative A – Proposed Action

6 **Overview:** The Proposed Action would include construction of the ENAR (approximately 4.59 miles),  
7 one 16-inch and one 20-inch pipeline (approximately 7.20 miles) along the ENAR, construction of two  
8 new compressor sites and associated access roads, road ROW access to the compressor sites  
9 (39.05 miles), and installation of high and low pressure loop pipelines (approximately 39.56 miles). The  
10 Applicants anticipate the life of the project to last up to 30 years, with the option for increased duration  
11 if the Endurance and Barricade Units remain productive for oil and gas operations.

12 The proposed 16-inch and 20-inch ENAR pipelines would be within a 100 foot construction ROW and  
13 would connect with the proposed high pressure and pressure reducing loop pipelines. The high  
14 pressure and pressure reducing loop pipelines would be located in the same 75-foot ROW (Appendix D).  
15 The Applicants would construct two compressor sites and the associated access road, to facilitate the  
16 flow of gas through new and existing pipelines.

17 The construction period would commence upon project approval and may require approximately 60  
18 working days to complete, contingent upon weather conditions. The construction workforce for the  
19 ENAR and pipeline routes would include 10 to 12 workers during periods of peak construction. No work  
20 camps would be required. The Barricade West compressor would be constructed simultaneously with  
21 the ENAR and during installation of the proposed pipelines (Figure D-2). The Barricade East compressor  
22 would be built approximately one year later, depending on production volumes. Up to 20 workers  
23 would be required for construction of each compressor site.

#### 2.1.1 Construction and Design Features

24 The Project was designed in accordance with the BLM Manual Section 9113 - Roads, the BLM Manual  
25 Section 9112 – Bridges and Major Culverts, the DFPA Final EIS, and in the joint BLM/U.S. Forest Service  
26 publication: *Surface Operating Standards for Oil and Gas Exploration and Development (Fourth Edition)*  
27 (USDI and USDA 2007). The location, orientation, and layout of proposed project components are  
28 depicted on the exhibits submitted with the Applicants' plans of development (PODs). Site-specific  
29 conditions may require slight deviations from exhibits filed with the PODs. However, the Applicants  
30 would not exceed the proposed area of disturbance. Based on the proposed alignment and profile, the  
31 Applicants would require sand or gravel supplies from public land to surface the roadway. The  
32 Applicants have permitted use through 2017 from a gravel mine in the NE quadrant of Township 14N,  
33 Range 95W, Section 6 for use on all existing and future BLM ROWs and access roads and well locations  
34 in the Endurance and Barricade Units. The Applicants would use sand and gravel from this mine, if  
35 necessary, and would supplement additional needs purchased from a commercial sand and gravel  
36 company in Baggs, Wyoming.

### 2.1.2 Access Road

1 The ENAR would be engineered in accordance with BLM standards as outlined in the BLM Road  
2 Standards Manual 9113. Design, materials, construction, operation, maintenance, and termination  
3 practices shall be in accordance with safe and proven engineering practices. The Applicants would  
4 acquire any necessary permits and ROW documents, and notify the BLM at least 48 hours prior to the  
5 start of construction activities. Road construction would require approximately 60 days for completion,  
6 contingent upon weather conditions.

7 The proposed ENAR would be approximately 4.59 miles in length with a 20-foot width (running surface)  
8 and a design speed of 30 miles per hour (mph). Maximum grade would be two3 percent. Development  
9 of the ENAR would initially disturb approximately 28 acres in the Project Area. A scraper or motor  
10 grader with a blade would be used to knock down vegetation, such as sagebrush, in the ROW during  
11 construction. Up to six inches of top soil would be salvaged and stock piled on the side of the ROW.  
12 Stockpiled soil would be spread on the surface-disturbed areas where feasible after the final grading.  
13 The proposed ENAR is already partially disturbed by an existing two-track sandy road, which may result  
14 in a reduced amount of available topsoil. Disturbances to sand dunes would be avoided where possible;  
15 however, some minor disturbances to the edges of sand dunes may occur.

16 The ENAR would be graveled and would include one major culvert structure. The ENAR would include  
17 various smaller culvert placements and low water crossings where the road intersects existing natural  
18 drainages. All sensitive areas and drainage crossings would be evaluated for appropriate construction  
19 stormwater best management practices, which are included in the BLM approved site-specific  
20 reclamation plans (SSRPs) for this project.

21 The ENAR would be routinely inspected by foot or vehicle for erosion issues, potholes, wash boarding,  
22 drainage issues, or any other potential safety hazards. The Applicants would be responsible for routine  
23 annual maintenance of the ENAR throughout the life of the ROW grant. Maintenance actions may  
24 require physical upkeep or repair of wear and damage, maintaining road shape, grading, and  
25 maintenance of road drainage features to ensure adequate erosion control.

### 2.1.3 Pipelines

26 Under the Proposed Action, a total of two different pipeline routes, the Endurance Northern Pipeline  
27 and the Barricade High Pressure and Pressure Reducing Pipeline Loop, would be installed in the Project  
28 Area (Appendix D, Figure D-2).

29 The Endurance Northern Pipeline would include installation of one 16-inch and one 20-inch buried  
30 pipeline, and would follow the same route as the proposed ENAR. The Barricade high pressure pipeline  
31 loop would include one 16-inch buried pipeline and the Barricade pressure reducing pipeline loop would  
32 include one 20-inch buried pipeline, to be installed within the same ROW where possible. The  
33 Endurance Northern pipelines would require a total permanent ROW of 100 feet for the life of the  
34 Project, and the Barricade High Pressure and Pressure Reducing Pipeline Loop would require a total  
35 permanent ROW of 75 feet for the life of the Project. After pipeline construction is completed, pipeline  
36 markers would be installed at specified intervals to identify pipeline locations.

37 Each pipeline route would contain two separate lines in adjacent ROWs, which would be offset  
38 centerline to centerline by 35 feet. The Endurance Northern Pipeline would be part of the proposed  
39 Barricade high and low pressure loop systems. Proposed pipelines would range from 16- to 20-inches,  
40 and would be made of steel with a 0.25 to 0.5-inch wall thickness, and Grade X-42 pipe, and a maximum  
41 operating pressure of approximately 1,200 pounds per square inch. All proposed pipelines in the Project

1 Area would have automated pig launching to clean the lines and check for corrosion and scaling issues.  
2 The average pipeline operating temperature is between 50 degrees Fahrenheit (°F) and 60 °F, and  
3 associated pipeline facilities would include valving and metering stations. Any above ground facilities,  
4 piping, or valving would be a flat, non-contrasting color to match with the surrounding landscape.

5 All design, material, construction, operation, maintenance, and termination practices shall be in  
6 accordance with safe and proven engineering practices. The proposed pipelines would be installed  
7 adjacent to existing and proposed roadways where practicable and would use existing surface scars to  
8 the extent possible. Locations for proposed pipelines are based on the most practical route in relation  
9 to existing well locations and the nearest collector pipeline. Additionally, pipeline route locations were  
10 selected in areas which would most efficiently utilize reservoir pressure from wells and thereby reduce  
11 the need for additional pipelines for future operations.

12 All surface disturbances resulting from pipeline installation would be subsequently reclaimed, and  
13 reduce overall surface disturbance. Proposed pipeline trenches would be mechanically cut and  
14 excavated to an average depth of 48 inches using trenching equipment, such as a wheel trencher.  
15 Disturbance of the topsoil in the Project Area ROWs would be kept to a minimum. Pipe installation  
16 associated with waterways and drainages, such as Slot Canyon, Sand Creek, and Willow Creek, would  
17 require additional erosion controls to stabilize the area including water bars and/or straw wattles. The  
18 BLM identified boring beneath Slot Canyon, Sand Creek, and Willow Creek as a term and condition of  
19 approval to minimize potential impacts (Appendix B). During buried pipeline construction, up to six  
20 inches of topsoil would be removed and windrowed on the non-working side of the route for later  
21 reclamation uses. A motor grader or caterpillar dozer would be used to replace stockpiled soil back into  
22 the trench, wheel pack soil, and leave a four-inch berm to accommodate settling. Soil, large debris, and  
23 rocks removed from the earth during trenching would be distributed evenly to match natural contours  
24 to the extent possible in the Project Area ROWs.

25 Existing and proposed roadways would be utilized for pipeline construction and staging, where possible.  
26 All pipeline materials would be hauled to the job by truck, as needed, and strung along ROWs upon  
27 arrival. Pipe would be strung to cause the least interference with the current land uses.

28 Installed pipelines would be hydrostatic tested for eight hours to verify pipeline integrity by pressurizing  
29 incremental segments of pipe to at least 1.25 times of designed operating pressure. The Applicants  
30 would supply the water for hydrostatic testing, and upon completion of each test, used water would be  
31 disposed of at a state approved waste disposal site.

#### 2.1.4 Compressor Sites

32 Under the Proposed Action, the Applicants propose to construct two compressor sites in the Project  
33 Area to facilitate the flow of gas from existing and potential future well locations (Figure D-2). The  
34 Barricade West Compressor Site would be built in 2013 and the Barricade East Compressor Site would  
35 be constructed approximately one year later, dependent upon production volumes. Each compressor  
36 site would be approximately 19,800 horsepower (hp) to accommodate approximately 120 million  
37 standard cubic feet per day (MMSCF/D) of natural gas flow and associated fluids from the Endurance  
38 and Barricade Units. Once developed, each compressor site would require a permanent ROW of  
39 approximately 10 acres for the life of the Project. Areas disturbed during the construction of the  
40 compressor sites and attachment of associated pipelines would be reclaimed in accordance with the  
41 BLM standards upon Project completion. All initially disturbed areas would be re-contoured so that the  
42 disturbed area blends into the surrounding terrain.

1 Associated facilities with each compressor site may include eight Waukesha 7044GSIs, four CAT 3606LEs  
2 1580 hp, four-30 MMSCFD dehydrators, inlet slug catcher & liquids handling, four-400 barrel (BBL)  
3 atmospheric storage tanks, flare/incinerators, up to four-500 BBL methanol tanks, glycol storage tanks,  
4 genset, fuel conditioning skid, electric generator, shed, drainage and chain link fencing and associated  
5 access roads. All permanent above ground facilities, piping, and valving would be painted a flat, non-  
6 contrasting color harmonious with the surrounding landscape. The Applicants would secure any  
7 required road and/or utility permits prior to the start of construction.

8 Construction equipment and vehicular access into each compressor site would remain on existing roads  
9 and proposed ROW corridors. As needed, construction materials would be hauled into the Project Area  
10 by truck and placed at proposed compressor locations upon arrival. Vegetation would be cleared  
11 through use of a motor grader with a blade in the permanent ROW as needed to provide a safe working  
12 area. All design, material, construction, operation, maintenance, and termination practices shall be in  
13 accordance with safe and proven engineering practices. Hospital grade industrial silencers would be  
14 installed as needed to mitigate audible noise from each compressor site.

15 The Applicants are requesting ROW access to the compressor sites on approximately 39 miles of existing  
16 road on the BLM-administered and private lands. The Applicants have obtained permission to cross  
17 private lands. Existing culverts and low water crossings would be maintained using the road  
18 maintenance agreement with other ROW holders.

### 2.1.5 Operations and Maintenance

19 The Applicants would be responsible for routine maintenance of all components included under the  
20 Proposed Action throughout the life of the Project. The ENAR and pipeline routes would be routinely  
21 patrolled and inspected by the Applicants through foot or vehicular means. The proposed compressor  
22 sites would be remotely monitored via a 20-foot freestanding communication tower which would be co-  
23 located on the existing Endurance 22-28 well location. Monitoring for all components would be conducted  
24 to check for problems including site erosion, ROW condition, unauthorized encroachment on the ROW,  
25 and any other situations which would result in safety hazard or require preventive maintenance.

### 2.1.6 Surface Disturbance Summary

26 All activities under the Proposed Action would occur across approximately 42,240 acres of the BLM-  
27 administered lands. The Project Area does not contain state lands. Table 2-1 summarizes the construction  
28 activities associated with the Proposed Action, and represents the standard activities the Applicants  
29 anticipate for the Project Area. Construction activities for all pipelines, roadways, and infrastructure would  
30 follow practices and procedures outlined in subsequent individual conditions of approval appended  
31 thereto by the BLM. In addition, actions associated with the Project would follow guidelines and standards  
32 as set forth in the *Surface Operating Standards for Oil and Gas Exploration and Development (Fourth  
33 Edition)* (USDI and USDA 2007). Table 2-1 indicates the construction of the project components under the  
34 Proposed Action would result in approximately 495 acres of initial surface disturbance and 33 acres of  
35 long-term surface disturbance.

**Table 2-1. Proposed Action Development and Estimated Surface Disturbances**

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Facility	Length (feet/miles)	Width (feet)	Initial Surface Disturbance (acres)	Long Term Surface Disturbance (acres)
<b>Compressor Sites</b>				
Proposed Barricade East Compressor Site	740	600	10.1	10.1
Proposed Barricade West Compressor Site	660	660	10.0	10.0
<b>Roads</b>				
Proposed Endurance Northern Access Road <sup>1,5</sup>	24,235/4.59	50	27.88	13.35
ROW Access to Compressor Sites <sup>6</sup>	39	NA	NA	NA
<b>Buried Natural Gas Pipelines</b>				
Proposed Endurance Northern 16- and 20-inch Pipelines <sup>2,3</sup>	37,994/7.20	100	87.22	0
Proposed Barricade High Pressure 16-inch Pipeline Loop <sup>4</sup>	111,100/21.04	75	191.29	0
Proposed Barricade Pressure Reducing 20-inch Pipeline Loop <sup>4</sup>	97,768/18.52	75	168.33	0
<b>Surface Disturbance Total</b>			<b>494.76</b>	<b>33.45</b>

Sources: Samson Resources 2013 and MGR 2013

NOTE: Complete reclamation in the long term is anticipated for buried pipelines. Therefore, the long-term surface disturbance associated with these features is assumed to be zero acres.

NA not applicable

<sup>1</sup> Assumes a 50-foot construction width to make road passable for project equipment.

<sup>2</sup> The separate 16-inch and 20-inch pipelines would be buried in the same ROW, offset centerline to centerline by 35 feet. The length (feet) represents the total length of the pipelines in the ROW and assumes a 100-foot ROW.

<sup>3</sup> Surface disturbances from buried pipelines in new road ROWs are assumed to be in the new road disturbance.

<sup>4</sup> Assumes a 75-foot construction ROW.

<sup>5</sup> Assumes a 20-foot running surface with a 24-foot permanent sub-grade.

<sup>6</sup> The access road is existing and there would be no construction or upgrades associated with this road.

### 2.1.7 Reclamation

1 Interim reclamation practices would begin as soon as practical, and would reclaim approximately 93  
 2 percent (461 acres) of initial surface disturbed areas. All reclamation practices would be done in  
 3 compliance with the *Surface Operating Standards for Oil and Gas Exploration and Development (Fourth*  
 4 *Edition)* (USDI and USDA 2007) and the BLM Rawlins Resource Management Plan (RMP) (2008a) and  
 5 would include: placing fill in the trench, compacting the fill, regrading cut-and-fill slopes to restore  
 6 original contour, replacing topsoil, installing appropriate erosion controls, and revegetating the site  
 7 where needed.

8 At the end of the project’s useful life, the Applicants, or their successor, would obtain any necessary  
 9 authorization to abandon project roadways, pipelines, and infrastructure from the appropriate  
 10 regulatory agency. The proposed compressor sites and all aboveground pipeline infrastructures would  
 11 be removed and all unsalvageable materials would be disposed of at authorized sites. Following  
 12 removal activities, the Applicants, or their successor, would meet with the BLM to inspect the Project  
 13 Area ROWs and jointly agree on an acceptable rehabilitation and termination plan. Reclamation  
 14 practices are discussed further in the DFPA Final EIS (BLM 2004b) and the Applicant submitted Site-  
 15 Specific Reclamation Plans (SSRPs). BLM supplied terms and conditions, and reclamation practices,  
 16 which are detailed further in Appendix B and C of this document.

### 2.1.8 Applicant-Committed Environmental Protection Measures

1 The following applicant-committed environmental protection measures would be considered design  
2 features of the Proposed Action: the DFPA ROD (BLM 2004a) Appendix A – Criteria for Meeting  
3 “Acceptable Plan”, Appendix B - Standard Mitigation Measures, and Appendix C - Reclamation Plan;  
4 Appendix B – Terms and Conditions, and Appendix C – Reclamation Methodologies of this EA; and the  
5 best management practices identified in the Applicants’ individual SSRPs for the Proposed Action  
6 (Samson 2012; MGR 2012).

## 2.2 Alternative B – 14-Foot ENAR Roadway

7 All proposed project activities, design features, operations, maintenance, mitigation, and reclamation  
8 practices would be the same as described under the Proposed Action, with the exception of the ENAR,  
9 which would have a smaller running surface (14 feet) and multiple turnouts. For brevity, only the  
10 actions associated with the ENAR under Alternative B are discussed below.

### 2.2.1 Access Road

11 Under Alternative B, the proposed ENAR would be the same length as the Proposed Action (4.59 miles),  
12 but with a 14-foot wide running surface and 100-foot long turnouts, which would result in  
13 approximately 24 acres of initial surface disturbance. Turnouts would be constructed at a maximum  
14 spacing of 1,000 feet, for a total of approximately 24 turnouts. As under the Proposed Action, the ENAR  
15 would be graveled, require a single major culvert structure, and would include various small culvert  
16 placements and low water crossings where the roadway intersects existing natural drainages.

17 The ENAR would be constructed and engineered in the same manner as described under the Proposed  
18 Action Alternative. Road construction would require approximately 60 days for completion, contingent  
19 upon weather conditions.

## 2.3 Alternative C – No Action

20 Under the No Action Alternative, the BLM would deny the Applicants’ Proposed Action. The BLM already  
21 analyzed the No Action Alternative in the DFPA EIS, which the BLM has tiered this EA to. Please see the  
22 DFPA EIS for the description and analysis of the No Action Alternative considered for this EA.

## 2.4 Alternatives Considered but Eliminated from Further Analysis

### 23 Roads

24 The BLM considered an alternative to the proposed ENAR where oil and gas contractors would access  
25 the Endurance and Barricade Units via an existing two-track road to the west of the proposed route  
26 along the rim above Willow Creek, adjacent to the Adobe Town Wilderness Study Area. This alternative  
27 route would have been designed to reduce overall surface disturbances in the Willow Creek area and  
28 reduce potential impacts with existing natural resources. The existing two-track road adjacent to the  
29 Adobe Town Wilderness Study Area would have been upgraded to provide both a northern access route  
30 to Wamsutter Road for oil and gas field operations, and facilitate improved recreational and hunting  
31 access for the public into the area. In mid-2012, Samson acquired mineral leases from the Wyoming  
32 State Land Board for Township 15N, Range 95W, Sections 9, 7, and 20, which are in the Willow Creek

1 Rim area, north of the Endurance Unit. These newly leased lands were in addition to Samson's existing  
2 mineral leases in the area. Upon closer review, Samson determined a new access road would be  
3 required for the development of Samson's new and existing leases, which would have resulted in  
4 development of two new roadways. This route was eliminated from further analysis based on the need  
5 for a new access road within the Willow Creek area to accommodate oil field operations, and to reduce  
6 surface disturbances associated with development of a second road.

7 The initial ENAR included three proposed routes in the Willow Creek area. Two of the originally  
8 proposed routes were removed from further consideration due to complications associated with  
9 sensitive cultural resources and potential for roadway wash out from adjacent water drainages.

10 The BLM also considered alternative primary access routes to the proposed ENAR where oil and gas  
11 contractors would access the Endurance and Barricade Units via a northern access road with routes  
12 considered along Eureka Headquarters Road, Barrel Springs Road, and BLM Roadway 4414. This  
13 alternative was eliminated from further analysis because the Applicants were unable to secure ROW  
14 access across private lands.

### 15 **Pipelines**

16 The BLM considered an alternative to the proposed high pressure and pressure reducing loop pipeline  
17 systems detailed under the Proposed Action. The alternative route would have placed the pipelines in a  
18 straight line across the middle of the currently proposed loop at the narrowest point. This alternative  
19 was removed from further analysis due to topographic issues and creation of new surface disturbances.

20 The BLM considered and evaluated an option to bypass the Slot Canyon pipeline crossing, with an  
21 alternative route which extended south around the canyon area, adjacent to existing roadways. This  
22 alternative was eliminated from further analysis as it would have required approximately 20 miles of  
23 additional pipeline and had an increased area of surface disturbance compared to the Proposed Action  
24 and other alternatives considered.

### 25 **Compressor Sites**

26 The BLM considered and evaluated four potential compressor site locations in addition to those detailed  
27 under the Proposed Action. The four additional locations considered included:

- 28 • Township 14N, Range 96W, NW Section 12 (10 acres)
- 29 • Township 15N, Range 95W, N2N2 Section 28 (10 acres)
- 30 • Township 14N, Range 95W, SW Section 10 (15 acres)
- 31 • Township 14N, Range 95W, SE Section 16, (6.9 acres plus 5.2 acres for access roadway for a total  
32 of 12.1 acres)

33 These four potential locations were removed from further analysis due to potential conflicts with  
34 existing site drainages, visual impacts, need for new access roads, and poor locations which would  
35 require an increase to the compressor site horsepower, and would result in a larger site footprint with  
36 increased emissions.

37 All alternatives considered for the Barricade East compressor were removed from further analysis as  
38 they would require construction of new access roads. In addition to the sites detailed above, the BLM  
39 considered the option for co-locating the Barricade West compressor with an existing saltwater disposal  
40 well in Township 14N, Range 96W, Section 1. This option was removed from further analysis as the

1 location would require additional horsepower, and therefore would result in a larger site footprint that  
2 would create conflicts with hydrological resources and an active Greater Sage-Grouse lek in the area.

3 The BLM also considered the potential for a single compressor site to facilitate operations in the  
4 Endurance and Barricade Units. This alternative was eliminated from further analysis as the single site  
5 would require approximately 1,000 more total horsepower compared to the two compressor site  
6 option, and would result in increased emissions and surface disturbances.

### 7 **Conformance with the Land Use Plan**

8 This Proposed Action is subject to the Approved Rawlins RMP, approved on December 24, 2008. The  
9 RMP has been reviewed to determine if the proposed action conforms to the land use plan as required  
10 by 43 Code of Federal Regulations (CFR) 1610.5-3. Authorization of transportation and utility system  
11 ROWs is covered on pages 2-16 to 2-18 of the RMP. The proposed action is in conformance with the  
12 RMP Management Objective to respond to internal and external requests (e.g., pipelines, access roads)  
13 for land authorizations.

14 The BLM uses the RMP as a guiding document in its environmental review of the leasing, exploration,  
15 and development of mineral resources. As a result of initial ID Team environmental review of the  
16 proposed action, appropriate standard operating procedures, best management practices, and site-  
17 specific mitigation measures were identified that would be considered during the analysis of  
18 environmental impacts and applied as terms and conditions of the grants if the ROWs are approved.

### 19 **Consistency with the Desolation Flats EIS**

20 The BLM developed this EA to provide a site-specific analysis of potential impacts that would result from  
21 the implementation of the Proposed Action or alternatives to the Proposed Action. This EA is tiered to  
22 and incorporates analysis from the DFPA Final EIS and ROD (BLM 2004a, 2004b). The DFPA Final EIS  
23 analysis described resources and resource uses in the DFPA, and analyzed the potential effects to these  
24 resource and resource uses from the development of oil and gas resources. References to specific  
25 information from the DFPA Final EIS are used throughout this analysis and are provided in the text. The  
26 Applicants' proposed project activities involve oil and gas infrastructure development in the DFPA,  
27 making the information, analyses, and decisions in those documents relevant. The DFPA Final EIS and  
28 ROD documents are available for public inspection on the BLM RFO website  
29 (<http://www.blm.gov/wy/st/en/info/NEPA/documents/rfo/desflats.html>).

## **2.5 Relationships to Statutes, Regulations, or Other Plans**

30 This EA has been prepared in accordance with the NEPA and is in compliance with all applicable  
31 regulations and laws passed subsequent thereto, including the Council on Environmental Quality (CEQ)  
32 regulations (40 CFR 1500-1508), U.S. Department of the Interior requirements contained in Department  
33 Manual 516, Environmental Quality (USDI 1980), guidelines listed in the BLM Manual Handbook, H-  
34 1790-1 (BLM 1998), and Guidelines for Assessing and Documenting Cumulative Impacts (BLM 1994).  
35 The proposed project would be consistent with other federal, state and local laws, rules and regulations.

## CHAPTER 3 – AFFECTED ENVIRONMENT

1 The ID Team evaluated the affected environment of the Project Area as documented in the ID Team  
2 Checklist (Appendix A). The checklist indicates which resources of concern are present, which resources  
3 would be affected by the alternatives and require analysis in the EA, and which resources are either not  
4 present in the Project Area or would not be affected to a degree that requires detailed analysis. The  
5 description of the affected environment in this section focuses on those resources identified as “PI”  
6 (present and potentially affected by the Project; impact analyzed in detail in the EA) in the ID Team  
7 Checklist (Appendix A).

8 The ENAR, ENAR pipelines, Barricade high pressure and pressure reducing pipeline loops, and Barricade  
9 East and West compressor sites (including access roads) would be located in the Endurance and  
10 Barricade Units on the BLM-administered lands in the Wyoming BLM RFO (Appendix D). This EA is tiered  
11 to the DFPA ROD (BLM 2004a), and incorporates the DFPA Final EIS (BLM 2004b) by reference; as a  
12 result, this chapter summarizes and cites the affected environment description from the DFPA Final EIS  
13 and provides additional site-specific information, where appropriate.

### 3.1 Air Quality and Greenhouse Gas Emissions

#### 3.1.1 Air Quality

14 Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS)  
15 are health based criteria for the maximum acceptable concentrations of air pollutants in public areas as  
16 established by the Environmental Protection Agency. Incremental increases in the ambient  
17 concentration of criteria pollutants are regulated under the Prevention of Significant Deterioration (PSD)  
18 program. Air pollutant concentrations above the WAAQS and the NAAQS represent a risk to human  
19 health.

20 On June 15, 2012, the Wyoming Air Quality Monitoring Network’s Wamsutter, Wyoming station  
21 (<http://www.wyvisnet.com/site.aspx?site=WAMS1>) recorded that no exceedance was occurring for  
22 Ozone (O<sub>3</sub>), Particulate Matter (PM<sub>10</sub>), or Nitrogen Dioxide (NO<sub>2</sub>) as of 10:40 AM Mountain Time. On  
23 March 31, 2011, the Wyoming Department of Environmental Quality (WDEQ) released the 2010 Annual  
24 Summary for the Wamsutter air quality monitoring site. Within this report, WDEQ identified zero days  
25 which exceeded the ambient air quality standards; all monitored values were within or below air quality  
26 standard limits. The first and second quarter reports for 2011 are available and do not show any  
27 exceedance in air quality thresholds from the Wamsutter station. Based on recent air quality  
28 monitoring data, existing air quality throughout the RFO area is in attainment of all ambient air quality  
29 standards.

30 Further discussion on air quality associated with the Project Area can be found in the DFPA EIS, Section  
31 3.2 *Climate and Air Quality*, pages 3-11 to 3-23.

#### 3.1.2 Greenhouse Gas Emissions

32 Greenhouse gases keep the planet’s surface warmer than it otherwise would be. However, as  
33 concentrations of these gases increase, the Earth’s temperature is climbing above past levels. According  
34 to National Oceanic and Atmospheric Administration and National Aeronautics and Space  
35 Administration data, the Earth’s average surface temperature has increased approximately 1.2°F to

1 1.4°F in the last 100 years. The eight warmest years on record (since 1850) have all occurred since 1998,  
2 with the warmest year being 1998. However, according to the British Meteorological Office's Hadley  
3 Centre (BMO 2009), the United Kingdom's foremost climate change research center, the mean global  
4 temperature has been relatively constant for the decade after the warming trend from 1950 through  
5 2000. Predictions of the ultimate outcome of global warming remain to be seen.

6 The analysis of the Regional Climate Impacts prepared by the U.S. Global Change Research Program  
7 ([USGCRP] 2009) suggests temperatures in the region (including the Project Area) are expected to  
8 increase, largely in the form higher average daily minimum temperatures. Precipitation is anticipated to  
9 decrease across the region, although with substantial variability in inter-annual conditions. The USGCRP  
10 concludes that this warming is causing a decline in spring snowpack and reduced flows in the Colorado  
11 River Basin. Neither the Environmental Protection Agency, nor the WDEQ, has established limits for  
12 greenhouse gas emissions.

13 Further discussion of greenhouse gases associated with the Project Area is provided in the DFPA EIS,  
14 Section 3.2 *Climate and Air Quality*, pages 3-11 to 3-23.

## 3.2 Cultural Resources

15 Intensive Class III cultural resource inventories were conducted for each component of the Proposed  
16 Action. The Class III cultural inventories identified a total of 46 sites including 25 newly documented  
17 sites and 21 previously documented sites in the Project Area. The site types include prehistoric  
18 campsites and lithic scatters, and historic debris scatters. Five of the sites are evaluated as eligible for  
19 inclusion in the National Registry of Historic Places (NRHP) because of their potential to yield data  
20 important to history and prehistory. The Project Area also includes areas that have the potential for  
21 undetected buried cultural deposits.

22 Further discussion on cultural resources is provided in the DFPA EIS, Section 3.11 *Cultural Resources*,  
23 pages 3-78 to 3-86.

## 3.3 Fish and Wildlife including Special Status Species

24 The DFPA EIS, Section 3.7 *Wildlife*, pages 3-53 to 3-58, includes a detailed account of wildlife species  
25 potentially occurring in the Project Area. The section below provides general information on wildlife  
26 species with potential to occur in or proximate to the Project Area and proposed project activities.  
27 Species identified as being absent or outside of the Project Area are not discussed in this EA.

### 3.3.1 General Wildlife

28 The Project Area provides habitat for migrant songbirds, small mammals, reptiles, and some  
29 amphibians. Specific general wildlife species observed in the Project Area during on-site surveys include  
30 various songbirds, northern harrier (*Circus cyaneus*), coyote (*Canus latrans*), desert cottontail (*Sylvilagus*  
31 *audubonii*), mule deer (*Odocoileus hemionus*), pronghorn (*Antilocapra americana*), white-tailed  
32 jackrabbit (*Lepus townsendii*), and 13-lined ground squirrel (*Ictidomys tridecemlineatus*) (HWA 2012).  
33 Although these species are important members of ecological communities, many are common and have  
34 a wide distribution within the DFPA, state, and region. Consequently, the relationship of most of these  
35 species to the proposed project is not discussed in the same depth as species which are threatened,  
36 endangered, rare, or are otherwise of high interest or unique value. Waterways in the Project Area are  
37 ephemeral or intermittent in nature and no impacts to fish species or amphibians are anticipated.

1 Further discussion on general wildlife species associated with the Project Area can be found in the DFPA  
2 EIS, Section 3.7 *Wildlife*, page 54.

### 3.3.2 Big Game Species

3 Several big game species including elk (*Cervus canadensis*), mule deer (*Odocoileus hemionus*), and  
4 pronghorn antelope (*Antilocapra americana*; hereafter referred to as pronghorn) occur in the general  
5 vicinity of the Project Area based on the species distribution and habitat information in the *Atlas of*  
6 *Birds, Mammals, Amphibians, and Reptiles in Wyoming* (Orabona et al. 2012). On-site surveys  
7 confirmed the presence of pronghorn and mule deer along the ENAR and proposed pipeline routes  
8 (HWA 2012).

9 The Project Area overlaps Hunt Area 430 of the Powder Rim Elk Herd Unit (EL430). No population data  
10 is currently collected for this herd unit; however, the Wyoming Game and Fish Department (WGFD)  
11 suspects that the population has increased over the last five years for which data has been reported  
12 (WGFD 2011). Overpopulation is an important management concern in this herd unit due to the  
13 presence of non-productive habitats, which are highly susceptible to overgrazing.

14 Big game species utilize winter/yearlong ranges throughout the year, but these areas experience an  
15 additional influx of animals from adjacent seasonal ranges during the winter months. Multiple migration  
16 routes for pronghorn and mule deer intersect, abut, or are located in close proximity to the Project Area  
17 (WGFD 2012). No identified big game parturition areas are located in the Project Area.

18 The Project Area overlaps Hunt Area 100 of the Baggs Mule Deer Herd Unit (MD427). In 2011, this herd  
19 unit was approximately 12 percent below its population objective of 18,200 individuals (WGFD 2011).  
20 Population increases are likely due to favorable weather conditions and large fawn crop in 2011, but  
21 difficult to model due to interchange with mule deer populations in Colorado. Mule deer winter range  
22 in the Project Area may be experiencing greater pressure due displacement from to oil and gas  
23 development in adjacent areas. The nearest crucial range is located approximately seven miles south of  
24 the Project Area.

25 The Project Area overlaps Hunt Area 57 of the Bitter Creek pronghorn antelope herd unit (PR414).  
26 There are 896 acres of crucial winter/yearlong pronghorn habitat in the Project Area. According to the  
27 most recent WGFD Big Game Herd Unit Report for the Green River Wildlife Region, this herd unit has  
28 remained well below its population objective since the winter of 2007/2008, when the population  
29 declined by approximately 31 percent (WGFD 2011). The most recent population estimate of 6,000  
30 individuals in 2011 was approximately 70 percent below the population objective. Current models  
31 predict that a modest population increase will reverse the current downward trend; however, the WGFD  
32 cites continuing oil and gas development in the area as a potential concern for the recovering  
33 population.

34 Further discussion on big game species associated with the Project Area can be found in the DFPA EIS,  
35 Section 3.7 *Wildlife*, page 54.

### 3.3.3 Raptor Species

36 Raptor species nest in a variety of habitats including, but not limited to, native and non-native  
37 grasslands, agricultural lands, live and dead trees, cliff faces, rock outcrops, and tree cavities. Raptors  
38 also exhibit opportunistic behaviors by perching or nesting on overhead distribution lines and support  
39 structures. Potentially suitable nesting and roosting habitats for raptors are present throughout the

1 Project Area. On-site ground surveys were performed on May 2, June 13, and July 5, 2012, within one  
 2 mile of the proposed development. Four previously documented and one new raptor nest sites were  
 3 located within one mile of the proposed development and included three golden eagles (*Aquila*  
 4 *chrysaetos*), one red-tailed hawk (*Buteo jamaicensis*), and one burrowing owl (*Athene cunicularia*) (HWA  
 5 2012). Only the burrowing owl nest was observed to be active at the time of survey and one of the  
 6 golden eagle nests was deteriorated beyond viable use (HWA 2012).

7 Further discussion on raptor species associated with the Project Area can be found in the DFPA EIS,  
 8 Section 3.7 *Wildlife*, page 64.

### 3.3.4 Migratory Bird Species

9 Species that may occur in these vegetation types in northeast Wyoming, according to the Wyoming Bird  
 10 Conservation Plan (Nicholoff 2003), appear in Table 3-1 grouped by level as identified in the plan. Most  
 11 of the birds listed in Table 3-1 typically nest either on the ground or in shrubs. Several migratory  
 12 species are also BLM special status (sensitive) species and are discussed in the Special Status Wildlife  
 13 Species section of this document.

**Table 3-1. Wyoming Bird Conservation Plan Priority Migratory Bird Species Potentially in the Project Area**

Common Name	Scientific Name	Habitat Type <sup>1</sup>	Distribution <sup>2</sup>
<b>Level I Species (Conservation Action)</b>			
Ferruginous hawk**	<i>Buteo regalis</i>	SS/SGP	B
Long-billed curlew**	<i>Numenius americana</i>	SGP, M	O/b
Mountain plover***	<i>Charadrius montanus</i>	SS, SGP	B/b
Burrowing owl*	<i>Athene cunicularia</i>	SGP	B
<b>Level II Species (Monitoring)</b>			
Loggerhead shrike*	<i>Lanius ludovicianus</i>	SS	B/b
Lark bunting*	<i>Calamospiza melanocorys</i>	SS, SGP	B
<b>Level III Species (Local Interest)</b>			
Northern harrier*	<i>Circus cyaneus</i>	W, M	B

\* Presence documented in HWA 2012

\*\* Presence documented in BLM surveys

\*\*\* Presence documented in both HWA and BLM surveys

<sup>1</sup> GAP vegetation cover types (BLM 1996) were identified through GIS analysis and mapped to the following avian habitat groupings (Nicholoff 2003):

M Meadows  
 SS Shrub-steppe  
 SGP Shortgrass prairie  
 W Wetlands

<sup>2</sup> Orabona et al. 2012. Definitions for symbols used to report Wyoming Distribution Areas are as follows:

B Nest or young dependent upon parent birds was observed.  
 b Circumstantial evidence of nesting.  
 O The species has been observed, but there was no evidence of nesting.

<sup>3</sup> BLM 2010

### 3.3.5 Special Status Species

#### Threatened, Endangered, and Candidate Species

1 There are 18 Endangered, Threatened, Proposed and/or Candidate species that have the potential to be  
2 found, or may be affected, by projects that may occur within the RFO. Based on Project Area surveys,  
3 no threatened or endangered species, or their habitat are located in or adjacent to the Project Area  
4 (Hayden-Wing Associates, LLC, No Date). Refer to Section 3.8 – *Special Status Plant, Wildlife, and Fish*  
5 *Species*, pages 3-64 to 3-75 of the DFPA EIS for additional details on threatened, endangered, and  
6 candidate species in the region.

7 One candidate species the Greater Sage-Grouse (*Centrocercus urophasianus*), is present and may have  
8 the potential to be affected by the proposed project. The project is located outside of Greater Sage-  
9 Grouse Core Habitat. Greater Sage-Grouse are also the BLM Wyoming sensitive species and a WGFD  
10 species of greatest conservation need because of population decline and ongoing habitat loss. The BLM  
11 Instruction Memorandum WY-2012-019 establishes interim management policies for proposed activities  
12 on the BLM-administered lands, including federal mineral estate. There are four known Greater Sage-  
13 Grouse leks located in close proximity to the proposed project activities. In addition portions of the  
14 proposed activities are located within identified Greater Sage-Grouse nesting and brood-rearing habitat  
15 (BLM 2008a). Riparian habitat, including intermittent and ephemeral drainages, is located within and  
16 adjacent to the Project Area where hens will bring their young during the early summer months. At this  
17 time, no known winter habitat has been identified within this project area for grouse.

18 Further discussion on special status species associated with the Project Area can be found in the DFPA  
19 EIS, Section 3.8 *Special Status Plant, Wildlife, and Fish Species*, pages 64-70.

#### BLM Sensitive Species

20 Sensitive species known or suspected to occur in the Project Area potentially affected by the project  
21 include Greater Sage-Grouse (*Centrocercus urophasianus*), ferruginous hawk (*Buteo regalis*), Brewer's  
22 sparrow (*Spizella breweri*), sage sparrow (*Amphispiza belli*), mountain plover (*Charadrius montanus*),  
23 burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), sage thrasher (*Oreoscoptes*  
24 *montanus*).

25 Refer to Section 3.8.2, *Sensitive Plant, Wildlife, and Fish Species*, pages 3-70 to 3-74 of the DFPA EIS for  
26 additional details on the BLM sensitive species associated with the Project Area.

### 3.4 Livestock Grazing and Rangeland Health Standards

27 The Project Area is located in the Willow Creek allotment (allotment number 10528), which is an active  
28 sheep and cattle livestock allotment. The BLM has seasonally approved this grazing area for the months  
29 of November 1 through February 28 for sheep, and April 1 through June 25 for cattle. There are  
30 currently 399 animal unit months (AUMs) designated for sheep and 1,280 AUMs designated for cattle in  
31 the Willow Creek allotment (BLM 2013). There are some range improvements in the Project Area.

32 The Willow Creek allotment overlaps with the Adobe Town Wild Horse Herd Management Area (HMA)  
33 which has led to increased competition for available forage between livestock and wild horse  
34 populations. Livestock operations have employed voluntary nonuse of livestock AUMs in the Adobe  
35 Town HMA in the past 10 years due to increased competition with wild horses, wildlife, and invasion of  
36 noxious, poisonous plants such as Halogeton (BLM 2008a).

1 Further discussion on livestock and rangeland health can be found in the DFPA EIS, Section 3.6.1 *Range*  
2 *Resources*, page 3-52.

### 3.5 Noise

3 Noise is generally described as unwanted or disturbing sound, and is measured by intensity (loudness) as  
4 pure sound pressure in decibels (dBA). Noise levels are measured and represented by the average of  
5 acoustic energy, typically in eight or 24-hour time periods, but may include long periods of time such as  
6 years (EPA 2013). Average ambient noise levels associated with rural recreation and agricultural  
7 practices ranges between 30 to 40 dBA; levels of 55 dBA or higher are considered disruptive and  
8 prolonged exposure to levels over 70 dBA would increase the risk of hearing loss (EPA 2013).

9 Wind is the most prevalent noise in the Project Area. Ongoing oil and gas drilling and production  
10 operations and localized vehicular traffic on the existing road network create modest sound  
11 disturbances in and directly adjacent to the Project Area.

12 Refer to Section 3.15 of the DFPA EIS, page 3-100 for additional details on noise in the Project Area.

### 3.6 Socioeconomics

13 Socioeconomic conditions potentially affected by the Proposed Action and alternatives include  
14 employment and earnings (in the oil and gas industry and other sectors of the economy), population,  
15 housing, local government facilities and services, local, state and federal fiscal conditions and local  
16 attitudes. Sweetwater County, Wyoming is the primary area of analysis for potential socioeconomic  
17 effects.

18 Further discussion on socioeconomic conditions associated with the Project Area are discussed in  
19 Section 3.12 *Socioeconomics*, pages 3-86 to 3-98 of the DFPA EIS.

### 3.7 Soils

20 Soils located in the Project Area were documented during the 2012 on-site pre-disturbance soil and  
21 vegetation surveys (Samson 2012). Soils and their reclamation potential in the Project Area differ with  
22 topographic location, slope, and elevation. Where present the amount of topsoil available for  
23 reclamation ranges from 0.5-inch to six inches. The Project Area is primarily comprised of loamy sand  
24 and sandy loam textures, to clays and clay loam textures. Portions of the Project Area proposed ROWs  
25 are located adjacent to the Kandaly sand dunes, and other areas contain Quaternary sands, which have  
26 a dune-like appearance. The majority of the Project Area has a low reclamation potential due to the  
27 dominance of sodic, saline, and sandy soils.

28 Soil formation is a very slow process and most soils cannot renew eroded surfaces or productivity while  
29 erosion continues. Current impacts to soils in the Project Area are the result of existing oil and gas  
30 development, traditional activities such as livestock grazing, and natural activities such as spring runoff  
31 and wildlife use.

32 Further discussion of soils that occur in the Project Area, their limitations, and reclamation potential can  
33 be found in the DFPA EIS, Section 3.3 *Soils*, pages 3-22 to 3-33. Additional detailed information  
34 regarding soils and ecological sites in and adjacent to the Project Area is also located on the BLM RFO  
35 Ecological Site Description website (BLM 2011c) and from existing BLM soil surveys of the Overland  
36 Area (BLM 1981). Table 3-2 details the dominant and important soils in the Project Area.

**Table 3-2. Dominant or Important Soils and Ecological Sites in the Project Area**

Map Unit Symbol	Map Unit Name	Ecological Site(s)	Soil Limiting Factor	Reclamation Stabilization Category
235	Blazon-Shinbara Complex	Shallow Loamy (SwLy) Green River and Great Divide Basins	Thin Soils; Clay Soils	Fair 3 (A)
332	Bittercreek-Haterton-Haterton Alkali Complex	Loamy (Ly) Green River and Great Divide Basin	Clay Soils	Fair 3 (A)
350	Kandaly-Glenderson-Riverwash Complex; 0 to 5 percent slopes	Sands (Sa) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty; Clay Soils under 4 inches	Fair 3 (A)
404	Otterson-Riverwash-Quealman Complex; 0 to 2 percent slopes	Sands (Sa) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty	Fair 3 (A)
440	Youjay-Westvaco Complex; 0 to 6 percent slopes	Shale (Sh) Green River and Great Divide Basins	Clay Soils	Fair 3 (A)
449	Dines-Dines Occasionally Flooded Silty Loam; 0 to 2 percent slopes	Saline Upland (SU) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty; Poor-High pH	Poor 3 (A) – without any amendments; Fair 3 (A) with amendments
453	Horsley-Youjay-Rock Outcrop Complex; 6 to 40 percent slopes	Shale (Sh) Green River and Great Divide Basins	Clay Soils; Sandy Soils	Fair 3 (A)
455	Thayer Fine Sandy Loam	Saline Upland (SU) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty	Fair 3 (A)
460	Badlands	Badlands	Clay Soils; Thin Soils; Sandy, high erosion hazard potential, droughty	Poor 3 (A)
463	Kandaly-Horsley-Westvaco Complex; 2 to 20 percent slopes	Sands (Sa) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty	Fair 3 (A)
466	Huguston Rock Outcrop-Terada Complex	Shallow Sandy (SwSy) Green River and Great Divide Basins	Thin Soils; Sandy, high erosion hazard potential, droughty	Good 3 (A)
472	Leckman-Kandaly Complex	Sandy (Sa) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty	Fair 3 (A)
479	Cotopaxi Fine Sand; 1 to 20 percent slopes	Sands (Sa) Green River and Great Divide Basins	Sandy, high erosion hazard potential, droughty	Fair 3 (A)
495	Bittercreek-Sagecreek Loams; 2 to 10 percent slopes	Loamy (Ly) Green River and Great Divide Basins	None	Fair 3 (A)

Source: InterTech 2013

### 3.8 Transportation and Access

1 Primary roadway access into the Project Area is provided by I-80, Wyoming State Highway 789 (WYO  
2 789), Colorado Highway 13 (CO 13), and Sweetwater County Road 23/Carbon County Road 701 (SCR  
3 23/CCR 701), also known as Wamsutter/Dad Road.

4 Roadways in and directly adjacent to the Project Area include routinely maintained graded, graveled  
5 roads, and unmaintained two-track roadways. Portions of existing roadways are not currently built to  
6 the BLM Roadway Manual 9113 minimum standards. The existing road network was primarily  
7 developed to service prior and ongoing oil and gas drilling and production, and livestock grazing  
8 activities. Current traffic volumes vary based on seasonal daily vehicle trips primarily associated with oil  
9 and gas activities, and to a lesser degree, livestock grazing activities.

10 Levels of Service, average daily traffic, and average accidents associated with the existing roadway  
11 network were assessed in the DFPA EIS (BLM 2004b). Refer to Section 3.13 *Transportation*, pages 3-98  
12 to 3-100 of the DFPA EIS, for additional details on existing transportation and access conditions in the  
13 Project Area.

### 3.9 Vegetation

14 Vegetation communities located in the Project Area were documented during the 2012 on-site pre-  
15 disturbance soil and vegetation surveys (Samson 2012). These surveys were conducted in October,  
16 therefore, some plant species or communities may not have been observed since surveys were  
17 performed outside of the growing season. Primary vegetation community types identified in the Project  
18 Area include sagebrush shrubland (shrub steppe) and desert shrub vegetation, typical of the semi-arid  
19 Wyoming Basin. The western portion of the Project Area, near the Willow Creek Rim, contains badlands  
20 vegetation cover type. Badlands are comprised of a high volume of exposed surface and very sparse  
21 vegetative cover. Primary vegetation in the badlands cover type of the Project Area includes saltbush  
22 (*Atriplex spp.*), Indian ricegrass (*Achnatherum hymenoides*), greasewood, and stemless goldenweed  
23 (*Haplopappus acaulis*). Additional site-specific occurrences of vegetation species were collected during  
24 on-site pre-disturbance surveys as part of the SSRPs. Based on these vegetation surveys, the bare  
25 ground component represented anywhere from 38 to 82 percent of the basal ground cover throughout  
26 the Project Area. Table 3-3 details vegetation species observed in the Project Area during on-site pre-  
27 disturbance surveys. No federal or state listed special status vegetation species or habitats are known  
28 to occur in the Project Area.

29 Refer to Section 3.5 *Vegetation and Wetlands*, pages 3-46 to 3-60 of the DFPA EIS for additional details  
30 on vegetation communities, including invasive plants and noxious weeds, present in the Project Area.

Table 3-3. Vegetation Species Observed in the Project Area

Scientific Name	Common Name
<b>Shrubs</b>	
<i>Artemisia tridentata</i>	Big sagebrush
<i>Artemisia pedatifida</i>	Birdsfoot sage
<i>Callistemon spp.</i>	Bottlebrush
<i>Picrothamnus desertorum</i>	Bud sage
<i>Atriplex gardneri</i>	Gardner's saltbush
<i>Sarcobatus vermiculatus</i>	Greasewood
<i>Artemisia arbuscula</i>	Low sagebrush
<i>Ericameria nauseosa</i>	Rubber rabbitbrush
<i>Atriplex confertifolia</i>	Shadscale saltbrush
<i>Grayia spinosa</i>	Spiny hopsage
<i>Chrysothamnus viscidiflorus</i>	Yellow rabbitbrush
<i>Krascheninnikovia lanata</i>	Winterfat
<b>Grasses and Forbs</b>	
<i>Rhynchospora spp.</i>	Beaksedge
<i>Eriogonum spp.</i>	Buckwheat
<i>Eriogonum ovalifolium</i>	Cushion buckwheat
<i>Achnatherum hymenoides</i>	Indian ricegrass
<i>Distichlis spicata</i>	Inland salt grass
<i>Hesperostipa comata</i>	Needle and thread
<i>Machaeranthera canescens</i>	Hoary tansyaster
<i>Antennaria spp.</i>	Pussytoes
<i>Poa secunda</i>	Sandberg's bluegrass
<i>Muhlenbergia spp.</i>	Sandy muhly
<i>Phlox hoodii</i>	Spiny phlox
<i>Elymus elymoides</i>	Squirreltail
<i>Bassia prostrata</i>	Summer cypress
<i>Stenotus acaulis</i>	Stemless mock goldenweed
<i>Pascopyrum smithii</i>	Western wheatgrass
<b>Cacti</b>	
<i>Opuntia polyacantha</i>	Prickly pear
<b>Invasive Plants and Noxious Weeds<sup>1</sup></b>	
<i>Alyssum allysoides</i>	Alyssum
<i>Bromus tectorum</i>	Cheatgrass
<i>Cardaria draba</i>	Whiteweed
<i>Halogeton glomeratus</i>	Halogeton
<i>Salsola tragus</i>	Prickly Russian thistle

Sources: Samson Resources 2012; Anadarko Petroleum Corporation 2012

<sup>1</sup>There are no known species or populations of state designated noxious weeds present in the Project Area.

### 3.9.1 Invasive Non-Native Plants and Noxious Weeds

1 Section 3.5 *Vegetation and Wetlands*, page 3-49 of the DFPA EIS, provides a general description of  
2 invasive and non-native species with potential to occur in the Project Area. Refer to Table 3-3 which  
3 identifies invasive plants and noxious weeds known to occur in the Project Area. No state invasive  
4 species or noxious weeds were observed in the Project Area during on-site pre-disturbance surveys.  
5 Locations of tamarisk (*Tamarix spp.*) and whitetop (*Cardaria draba*), two state designated noxious  
6 species, are present outside of the Project Area along portions of Sand Creek and Willow Creek, and  
7 existing access roadways north of the Project Area.

8 On-site pre-disturbance surveys identified presence of four invasive species, alyssum (*Alyssum*  
9 *allysoides*), cheatgrass (*Bromus tectorum*), Halogeton (*Halogeton glomeratus*), and prickly Russian thistle  
10 (*Salsola tragus*), in the Project Area (Samson Resources 2012). Halogeton is an opportunistic plant  
11 species that thrives on sodic and saline soils, can limit reclamation potential through chemical induced  
12 changes to soils, and is lethal to sheep. Per the BLM requirements, the Applicants' SSRPs include a weed  
13 management plan to address weed control measures in Project Area ROWs.

### 3.10 Visual Resources

14 The existing visual landscape is characterized by low lying vegetation with areas of open, barren ground,  
15 sand dunes, badland breaks and buttes, numerous small drainages, rural livestock operations, and  
16 locations of exiting oil and gas developments. The BLM-administered lands in the Project Area are  
17 classified as Visual Resource Management Class III (VRM III), as identified in the 2008 RMP. The BLM  
18 objective for VRM III areas is to partially retain the existing character of the landscape.

19 Refer to Section 3.10 *Visual Resources*, pages 3-75 to 3-75 of the DFPA EIS for additional details on visual  
20 resources associated with the Project Area.

### 3.11 Water Resources and Quality (including Stormwater)

21 The Project Area is located in the Little Snake River drainage basin (Hydrologic Unit Code [HUC]  
22 1400003) which is part of the larger Colorado River Basin. Waterways associated with the Colorado  
23 River Basin (including those in the Project Area) are subject to review by the Colorado River Basin  
24 Salinity Control forum. There are no U.S. Geological Survey streamflow gauging stations or surface  
25 water quality stations in the Project Area. There are currently no waterways or drainages in the Project  
26 Area listed on the State of Wyoming's 303(d) List of Impaired Waters.

27 The Project Area is primarily drained by Sand Creek, Willow Creek, and numerous unnamed drainages,  
28 which are tributaries to the Little Snake River. All waterways in the Project Area are intermittent to  
29 ephemeral in nature. The erosive nature of soils in the Project Area results in relatively high potential  
30 for transfer of suspended sediments into waterways during high water flow events. Runoff from rainfall  
31 and snowmelt also flushes accumulated concentrations of salt from bedrock surfaces, soils, and channel  
32 deposits downstream, which increases salt loading into the Colorado River system. Based on the DFPA  
33 EIS (BLM 2001), surface water quality in the Project Area is not suitable for domestic uses and is  
34 marginally suitable for livestock and industrial uses.

35 Based on definitions provided in 40 CFR 230.3 (s), Sand Creek, Willow Creek, and all unnamed tributaries  
36 in the Project Area, which connect to the Little Snake River are considered waters of the U.S. Section  
37 404 of the Clean Water Act and will require a permit from the U.S. Army Corps of Engineers (USACE)  
38 prior to discharging dredged or fill material into waters of the U.S. as defined by 33 CFR Part 328. A

- 1 permit is required for both permanent and temporary discharges into waters of the U.S.; larger  
2 discharges require an individual permit, while smaller discharges may be granted a nationwide permit.  
3 Refer to Section 3.4.2 *Surface Water*, pages 3-34 to 3-39 of the DFPA EIS, for additional detailed  
4 discussion on water resources, water quality, and waters of the U.S. within the Project Area.

### 3.12 Wild Horses

- 5 The Project Area is located in the Adobe Town Wild Horse HMA. Horse health in the HMA is good with  
6 few apparent problems. However, the present population has been influenced by escaped saddle stock  
7 from adjacent areas (BLM 2011a). The Adobe Town HMA overlaps the Willow Creek sheep and cattle  
8 grazing allotment, which has led to increased competition between wild horses and livestock for  
9 available forage. Wild horses were observed throughout the Project Area during project on-sites and  
10 resource surveys, with concentrations typically found near water sources or suitable habitat. Refer to  
11 Section 3.7.5 *Wild Horses*, pages 3-58 to 3-60 of the DFPA EIS for additional information on wild horses  
12 in the Project Area.

## CHAPTER 4 – ENVIRONMENTAL CONSEQUENCES

1 This chapter describes the environmental consequences of Alternative A – the Proposed Action and  
2 Alternative B – the 14-foot ENAR Roadway. Alternative C – the No Action Alternative was discussed in  
3 Section 2.3.

4 The Applicants would apply all applicable criteria from Appendix A and mitigation measures from  
5 Appendices A and C of the DFPA ROD (BLM 2004a) and Applicant supplied best management practices,  
6 as identified in the SSRPs, to all proposed activities under the Proposed Action and Alternative B.  
7 Appendix B and C of this document includes a list of terms and conditions and additional reclamation  
8 methodologies, which the Applicants would use where applicable to reduce surface-disturbing impacts  
9 on resources. Impacts assessed in the Chapter 4 resource sections are those which would occur after  
10 implementation of the mitigation measures, best management practices, terms and conditions, and  
11 reclamation methodologies referenced above and in Appendix B and C of this document. Cumulative  
12 impacts associated with the proposed project and other past, present, and reasonably foreseeable  
13 developments are discussed at the end of Chapter 4.

### 4.1 Air Quality and Greenhouse Gas Emissions

#### 14 Alternative A – Proposed Action

15 Under the Proposed Action, construction of the ENAR, proposed pipelines, and compressor sites is  
16 expected to take approximately 60 days, weather permitting. Activities described in the Proposed  
17 Action would result in localized short-term increases in emissions during brush clearing of the ROWs,  
18 construction of access roads, topsoil stockpiling, trenching, pipe delivery, pipeline installation,  
19 backfilling, and reclamation. Pollutants generated during construction activities would include gas and  
20 diesel equipment combustion emissions and fugitive dust (PM<sub>10</sub> and PM<sub>2.5</sub>) associated with construction  
21 equipment and vehicles. Emissions from earth-moving equipment, vehicle traffic, construction and  
22 maintenance activities, daily tailpipe and fugitive dust emissions, and other sources would potentially  
23 contribute to greenhouse gas emissions. However, once construction activities are complete, air quality  
24 impacts and greenhouse gas emissions associated with these activities would cease.

25 Following construction, traffic volumes in the Project Area would increase above current levels to  
26 include an additional six truck trips per day for the 30-year life of the project. Due to the short duration  
27 of proposed project construction activities and small volume of increased vehicle traffic from existing  
28 levels, impacts to air quality and increase greenhouse gas emissions are anticipated to be negligible.

29 Refer to Section 4.2 *Air Quality*, pages 4-7 to 4-31 of the DFPA EIS for additional detailed discussion of  
30 impacts on air quality and greenhouse gases associated with natural gas developments.

#### 31 Alternative B – 14-foot ENAR Roadway

32 Potential impacts to air quality and greenhouse gas emissions associated with proposed activities under  
33 Alternative B would be similar to those discussed under the Proposed Action.

## 4.2 Cultural Resources

### 1 Alternative A – Proposed Action

2 Cultural resources, including five sites evaluated as eligible for the NRHP, were identified during the  
3 Class III cultural resource inventories for the proposed project. Based on the project design, all of the  
4 eligible sites would be avoided by the proposed project activities. No historic properties would be  
5 adversely affected by the Proposed Action.

6 Surface-disturbing activities have the potential to disturb or displace buried cultural deposits and result  
7 in unanticipated discoveries. Because of the potential for the discovery of cultural materials during  
8 construction in these areas, the stipulation would be applied which requires a BLM permitted  
9 archaeologist to monitor construction activities to ensure any discoveries are properly addressed.

10 Refer to Section 4.1.1, pages 4-97 to 4-100 of the DFPA EIS for further discussion on impacts to cultural  
11 resources in the general location of the Proposed Action.

### 12 Alternative B – 14-foot ENAR Roadway

13 The impacts to cultural resources under Alternative B would be similar to those described under the  
14 Proposed Action, but slightly less due to less initial surface disturbance.

## 4.3 Fish and Wildlife including Special Status Species

### 4.3.1 General Wildlife

#### 15 Alternative A – Proposed Action

16 Implementation of the Proposed Action would result in approximately 495 acres of initial surface  
17 disturbance that would affect general wildlife species. For less mobile species, construction would  
18 increase the risk of direct impacts such as mortality and risk of vehicle collisions. Indirect impacts to  
19 general wildlife would include loss of habitat, increased habitat fragmentation effects as a result of  
20 increased noise levels and human presence, dispersal of noxious and invasive weed species that displace  
21 palatable vegetation, and dust effects from unpaved road traffic, and disruptive activities. However,  
22 these impacts would decrease after completion of construction and successful interim reclamation  
23 (Appendix C). Habitat loss would occur on 33 acres after interim reclamation and would have a  
24 negligible effect on general wildlife species. Further discussion on impacts to general wildlife species in  
25 the Project Area can be found in Section 4.7.3.1.1, *General Wildlife* page 4-59 of the DFPA EIS.

#### 26 Alternative B – 14-foot ENAR Roadway

27 The impacts to general wildlife under Alternative B would be similar to those described under the  
28 Proposed Action, but long-term loss of general wildlife habitat is less under this alternative, as the ENAR  
29 would result in seven fewer acres of long-term surface disturbance.

### 4.3.2 Big Game Species

#### 30 Alternative A – Proposed Action

31 Implementation of the Proposed Action would result in approximately 495 acres of initial surface  
32 disturbance that would affect elk, mule deer, and pronghorn habitat in the Project Area. Long-term

1 impacts would remain from the ENAR and compressor sites on 33 acres. Resulting direct effects to big  
2 game species would include increased potential for mortality due to the increased risk of vehicle  
3 collisions. Indirect impacts to big game species generally would include incremental long-term surface  
4 disturbance and habitat loss associated with construction of proposed pipelines, road, and compressor  
5 sites, habitat fragmentation effects as a result of increased noise levels and human presence, dispersal  
6 of noxious and invasive weed species that displace palatable vegetation, dust effects from unpaved road  
7 traffic, and disruptive activities.

8 The extent of development and the success of reclamation efforts for existing disturbed areas are likely  
9 to influence big game habitat utilization and migration patterns. The Sublette Mule Deer Study (Phase  
10 II) found that mule deer avoidance around well pads and associated facilities increased commensurate  
11 with the level of human activity in the area, while unmanned well pads were avoided less (Sawyer et al.  
12 2009). Similarly, mule deer were found to avoid roadways with high traffic levels, and showed an  
13 increased presence along roads with low to no use. During the drilling season, 39 daily vehicle trips on  
14 the ENAR may result in avoidance by big game, but this potential for avoidance would be reduced during  
15 the non-drilling season, when only 8.6 vehicle trips per day are anticipated (Table 4-1).

16 The ENAR and pipelines would intersect pronghorn crucial winter/year-long range, resulting in 14 acres  
17 of initial surface disturbance and three acres of long-term surface disturbance to pronghorn habitat.  
18 Once reclaimed, initial surface disturbances would return to habitat, but habitat loss associated with  
19 placement of the roadway and increased risk of vehicle collisions from the access road would remain as  
20 long-term impacts to pronghorn.

21 The adverse impacts to big game species described above could contribute to pronghorn and mule deer  
22 populations not achieving population objectives in herd units that overlap the Project Area, as described  
23 in Section 3.3.2 of this document. Further discussion on impacts to big game species associated can be  
24 found in Section 4.7 *Wildlife*, pages 4-56 to 4-73 of the DFPA EIS.

#### 25 Alternative B – 14-foot ENAR Roadway

26 The impacts to big game under Alternative B would be similar to those described under the Proposed  
27 Action, but long-term loss of big game habitat would be less under this alternative, as the ENAR would  
28 result in seven fewer acres of long-term surface disturbance.

### 4.3.3 Raptor Species

#### 29 Alternative A – Proposed Action

30 The Proposed Action would result in 116 acres of initial surface disturbance within one mile of  
31 ferruginous hawk and golden eagle nest sites and 82 acres of disturbance within  $\frac{3}{4}$  mile of other raptor  
32 nests. This short-term disturbance would result in temporary habitat loss until disturbed areas are  
33 reclaimed. The Proposed Action would also result in long-term habitat loss of the ENAR and compressor  
34 sites, with five acres of long-term disturbance occurring within one mile of ferruginous hawk and golden  
35 eagle nest sites, and seven acres occurring within  $\frac{3}{4}$  mile of other raptor nest sites. Implementing the  
36 Proposed Action would result in direct impacts to Raptors (e.g. collisions with vehicles, harassment,  
37 displacement, and noise) and indirect impacts (e.g. degradation or loss of habitats important to prey  
38 species) that may result in nest abandonment, and habitat fragmentation.

39 Certain life history characteristics, including typically long life spans, slow reproductive rates, and  
40 specific habitat requirements for nesting and foraging, make raptor populations particularly vulnerable  
41 to disturbances. Raptors may temporarily or permanently abandon their roosting area or nests in

1 response to disturbance. Ferruginous hawks and golden eagles are especially sensitive to human  
2 activity. The BLM would not allow surface-disturbing activities within one mile of ferruginous hawk and  
3 golden eagle nests from February 1 to July 15 and March 1 to July 31, respectively. The BLM would also  
4 prohibit surface-disturbing activities within  $\frac{3}{4}$  mile of other raptor nest sites during sensitive nesting  
5 periods as established in the RFO RMP (BLM 2008a). Under the Proposed Action, no above-ground  
6 structures would occur within  $\frac{3}{4}$  mile of a documented raptor nest site.

7 Where active nests are documented during pre-construction surveys, timing stipulations would prohibit  
8 construction during the nesting season. No surface-disturbing activities are proposed to occur within  $\frac{3}{4}$   
9 mile of the lone active raptor nest documented in 2012. Other mitigation measures implemented for  
10 mountain plover and Greater Sage-Grouse discussed in the *Special Status Species - Animals* section and  
11 Appendix B and C of this document would also reduce the potential adverse impacts to raptors.

12 Given the application of these mitigation measures and where surface disturbance is proposed in  
13 relation to documented raptor nest sites, impacts to raptor nesting locations are not anticipated.  
14 Further discussion on impacts to raptors can be found in Section 4.7 *Wildlife*, pages 4-56 to 4-73 of the  
15 DFPA EIS.

#### 16 Alternative B – 14-foot ENAR Roadway

17 The impacts to raptors under Alternative B would be similar to those described under the Proposed  
18 Action, but long-term loss of raptor foraging habitat would be less under this alternative, as the ENAR  
19 would result in seven fewer acres of long-term surface disturbance.

### 4.3.4 Migratory Bird Species

20 Table 3-1 lists the Wyoming Bird Conservation Plan priority migratory bird species potentially occurring  
21 in the Project Area that could be affected by the proposed project. This section addresses potential  
22 affects to migratory bird species.

#### 23 Alternative A – Proposed Action

24 The Proposed Action would result in initial loss of approximately 495 acres of potential breeding,  
25 nesting, and foraging habitat of migratory birds on federally administered lands during construction of  
26 the proposed ENAR, buried pipelines, and compressor sites. Most of these impacts would be  
27 temporary, depending on the level of success following reclamation procedures. The ENAR and  
28 compressor sites would result in long-term loss of approximately 33 acres of habitat for migratory birds.  
29 Additional impacts from the Proposed Action would include displacement from suitable habitats due to  
30 increased noise levels and visual disturbances on the landscape; reduced habitat values in foraging areas  
31 due to prey displacement or weed invasion; and an increased potential for collisions with vehicles  
32 traveling in the Project Area. Development would also result in indirect impacts including habitat  
33 fragmentation, habitat degradation by dispersal of noxious and invasive weed species, and dust effects  
34 from unpaved road traffic. Research has indicated that the density of breeding Brewer's sparrows  
35 declined by 36 percent and breeding sage sparrows declined by 57 percent within 100 meters of dirt  
36 roads in a natural gas field (Ingelfinger and Anderson 2004).

37 If project development and production activities were to occur during the breeding season (April 1 - July  
38 31 for passerine species) then nest or nesting territory abandonment or loss of eggs or young could  
39 occur. However, the degree of these potential impacts would depend on a number of variables  
40 including the location of the nest site, species relative sensitivity, breeding phenology, and possible

1 topographic shielding. Loss of an active nest site, incubating adults, eggs, or young would violate the  
2 Migratory Bird Treaty Act.

3 No timing limitations on surface-disturbing activities specifically for migratory birds are included as part  
4 of the Proposed Action; however, timing limitations associated with raptor, mountain plover, and  
5 Greater Sage-Grouse would also serve to mitigate impacts to nesting migratory birds.

#### 6 Alternative B – 14-foot ENAR Roadway

7 The impacts to migratory bird species under Alternative B would be similar to those described under the  
8 Proposed Action, but long-term loss of potential nesting, cover, and foraging habitat would be less  
9 under this alternative, as the ENAR would result in seven fewer acres of long-term surface disturbance.

### 4.3.5 Special Status Species

#### Threatened, Endangered, and Candidate Species

10 The only threatened, endangered, or candidate species potentially affected by the proposed project is  
11 Greater Sage-Grouse (candidate species and the BLM sensitive species).

#### 12 Alternative A – Proposed Action

13 Research has indicated that development within two to four miles of Greater Sage-Grouse leks can have  
14 an adverse effects on lek persistence and nesting success (BLM 2011b) and anthropogenic noise related  
15 to energy development has been shown to cause declines in male lek attendance (Manier et al. 2013).  
16 The Proposed Action would result in initial surface disturbance on 110 acres from the ENAR, pipeline  
17 installation, and compressor site construction within two miles, and identified nesting and brood-rearing  
18 habitat, of Greater Sage-Grouse leks. Interim reclamation practices would be initiated as soon as  
19 practical, and would reclaim 90 percent (100 acres) of initial surface disturbed areas. No surface  
20 disturbance is proposed with  $\frac{1}{4}$  mile of leks. The BLM would prohibit surface-disturbing and/or  
21 disruptive activities from March 1 to July 15 within two miles of a lek, and identified nesting and brood-  
22 rearing habitat to protect grouse during this sensitive time period. The protective buffer and seasonal  
23 timing stipulation would reduce potential surface disturbing impacts to these areas from surface  
24 disturbing activities and during critical breeding time periods.

25 Long-term impacts from anthropogenic noise would result from the vehicle traffic on the ENAR and  
26 noise from the compressor sites. In an interium study, traffic noise was determined to have a much  
27 more detrimental impact on sage-grouse than more continuous ambient noise (Blickley et al. 2012;  
28 Patricelli, et al. 2012; Blickley & Patricelli 2012). Topographic features may help to reduce potential  
29 noise impacts. Additionally, the Applicants would install hospital grade industrial silencers on  
30 compressor sites as needed to avoid noise impacts to Greater Sage-Grouse leks and nesting and  
31 brooding habitat. Potential noise impacts from vehicle traffic would be less during the non-drilling  
32 season, as well as during the later production phase. Additional terms and conditions which limit  
33 surface-disturbing activities discussed in Appendix B would further reduce potential impacts to Greater  
34 Sage-Grouse.

#### 35 Alternative B – 14-foot ENAR Roadway

36 The impacts to Greater Sage-Grouse under Alternative B would be similar to those described under the  
37 Proposed Action.

### BLM Sensitive Species

1 Section 4.3.3 *Raptor Species* addresses the BLM sensitive raptors species potentially occurring in the  
2 Project Area including ferruginous hawk and burrowing owl. Section 4.3.4, *Migratory Bird Species*  
3 addresses effects to the BLM sensitive migratory birds potentially occurring in the Project Area including  
4 Brewer's sparrow, loggerhead shrike, sage sparrow, and sage thrasher. Potential effects to mountain  
5 plover are discussed below.

#### 6 Alternative A – Proposed Action

7 The Proposed Action would result in eight acres of initial surface disturbance within mountain plover  
8 habitat, resulting in the temporary loss of habitat depending on how conditions return to pre-  
9 disturbance conditions following reclamation procedures. Less than one acre of long-term surface  
10 disturbance in mountain plover habitat would result from the Proposed Action. Additional impacts from  
11 the Proposed Action would include displacement from suitable habitats due to increased noise levels  
12 and visual disturbances on the landscape; reduced habitat values in foraging areas due to prey  
13 displacement or weed invasion. Further discussion on mountain plover can be found in Section 4.8  
14 *Special Status Plan, Wildlife, and Fish Species*, page 4-75 of the DFPA EIS.

#### 15 Alternative B - 14-foot ENAR Roadway

16 The impacts to mountain plover under Alternative B would be similar to those described under the  
17 Proposed Action.

## 4.4 Livestock Grazing and Rangeland Health Standards

#### 18 Alternative A – Proposed Action

19 Implementation of the Proposed Action would result in surface-disturbing activities on approximately  
20 495 acres before interim reclamation resulting in an overall reduction in livestock forage, and a  
21 subsequent reduction in the available AUMs in the Willow Creek grazing allotment. For the purpose of  
22 assessing impacts to range resources, acres of disturbance were converted to a reduction in AUMs  
23 based upon an average of 12 acres/AUM for the project (BLM 2004b). Initial surface disturbances  
24 associated with the Proposed Action would result in a maximum reduction of approximately 41 AUMs in  
25 the Project Area. Reclamation would occur on 461 acres, placing approximately 38 AUMs back into  
26 forage, with continuing disturbance on 33 acres (3 AUMs), which represents less than one percent of the  
27 total average AUMs available in the Willow Creek allotment. Livestock may also be minimally disturbed  
28 from increased human activity during construction and reclamation phases of the project, and the  
29 potential spread of invasive or noxious weeds into surface-disturbed areas. Halogeton (*Halogeton*  
30 *glomeratus*), a potentially lethal plant to livestock if consumed, is present in and adjacent to the Project  
31 Area and would increase the risk of this species spreading into areas where it currently does not occur.  
32 Impacts from implementation of the Proposed Action are not anticipated to require an adjustment of  
33 the livestock stocking rate.

34 Further discussion on livestock grazing and rangeland health standards can be found in Section 4.6 *Range*  
35 *Resources and Other Land Uses*, pages 4-52 to 4-56 of the DFPA EIS.

#### 36 Alternative B – 14-foot ENAR Roadway

37 Under Alternative B, impacts to livestock grazing and rangeland health standards would be similar, but  
38 slightly less than under the Proposed Action. Construction of the ENAR under Alternative B would result

1 in less initial surface disturbance (24 acres) compared to the Proposed Action (28 acres). This decrease  
2 in surface disturbance would result in a negligible difference in loss of AUMs in the Willow Creek  
3 allotment compared to the Proposed Action.

## 4.5 Noise

### 4 Alternative A – Proposed Action

5 The Proposed Action would result in 60 days of elevated construction and traffic noise from project  
6 related construction and development activities. The proposed action would add noise to the area  
7 which can exceed 55 dBA, however, these noises are transient and short-term in nature. The greatest  
8 increase would be along access roadways, from operation of equipment at material staging and  
9 construction areas, from development of the compressor sites, and construction of the pipeline  
10 alignment during trenching, pipe placement, backfilling/recontouring, and seedbed preparation.

11 These levels could potentially affect human comfort and resident wildlife in the area as noise intensity  
12 increases with the levels of activity that an area receives. There has been a growing recognition in recent  
13 years that noise pollution may have profound and widespread impacts on wildlife, yet we know  
14 remarkably little about the extent and magnitude of these impacts. One way that noise may affect  
15 animals is by disrupting communication, which plays a central role in animal social and reproductive life.  
16 (Blickley et al. 2012; Patricelli, et al. 2012; Blickley & Patricelli 2012). Noise from oil and gas activities  
17 could cause recreationalist to find alternative areas in order to enjoy wide-open spaces free from human  
18 induced noise. These higher noise levels would likely occur over a small area because the project  
19 components would be installed in a planned sequence at specified locations in the Project Area. Further  
20 discussion on noise can be found in Section 4.15 *Noise*, pages 4-127 to 4-130 of the DFPA EIS.

### 21 Alternative B – 14-foot ENAR Roadway

22 Potential noise related impacts associated with proposed activities under Alternative B would be similar  
23 to those discussed under the Proposed Action.

## 4.6 Socioeconomics

### 24 Alternative A – Proposed Action

25 Developments under the Proposed Action could have positive impacts on the local economies of  
26 Sweetwater County, and nearby areas of Carbon County through the creation of additional  
27 opportunities in the oil and gas industry and in supporting trades and services. Implementation of the  
28 Proposed Action would have indirect positive impacts by opening up the area for added development  
29 associated with oil and gas projects, which would result in added job opportunities and increased tax  
30 revenues. Sweetwater County would receive increased sales tax, property tax, and royalty revenues.  
31 Sales tax revenues would also benefit nearby communities in both Sweetwater and Carbon counties.  
32 Development of the Proposed Action could also result in negative social impacts (e.g. changing the  
33 recreational character of the area, reducing scenic quality, increasing dust levels especially during  
34 construction, and increasing traffic), potentially resulting in reduced recreational and tourism income.  
35 Additionally, the project could contribute to the strain on nearby local communities' infrastructure,  
36 housing, etc. However, U.S. natural gas prices have dropped in recent years from \$9.96 per thousand  
37 cubic feet (MCF) in May 2008 to \$1.94/MCF in May 2012 (USDOC 2012), reducing natural gas

1 development activity in Sweetwater County, so the existing community infrastructure would be  
2 expected to absorb the staffing required from this project.

3 Further discussion on socioeconomics associated with the region can be found in Section 4.12  
4 *Socioeconomics*, pages 4-100 to 4-120 of the DFPA EIS.

#### 5 Alternative B – 14-foot ENAR Roadway

6 Potential impacts to socioeconomic resources associated with proposed activities under Alternative B  
7 would be similar to those discussed under the Proposed Action.

## 4.7 Soils

### 8 Alternative A – Proposed Action

9 The Proposed Action would result in approximately 495 acres of new soil disturbance in the Project Area  
10 during project implementation and construction activities. Impacts from project implementation would  
11 include loss of vegetation, mixing of soil horizons and rutting, compaction, increased erosion, soil loss,  
12 and loss of soil productivity. The potential for soil erosion following precipitation and spring runoff  
13 events would increase as a function of slope and proximity to drainages. Additionally, less desirable  
14 inorganic compounds such as carbonates, salts, or weathered materials could be relocated and affect  
15 revegetation.

16 Development of the ENAR would result in widening of an existing roadway and new surface disturbance  
17 in the road ROW for a combined total of 28 acres before interim reclamation, and approximately 13  
18 acres of long-term surface disturbance. Surface disturbances associated with the proposed 16-inch and  
19 20-inch pipeline installations along the ENAR and high pressure and pressure reducing loops would  
20 result in approximately 447 acres of initial surface disturbance before initial reclamation. Construction  
21 of the Barricade East and West compressor sites would result in 20 acres of long-term surface  
22 disturbance.

23 Interim reclamation practices would begin as soon as practicable after the initial surface disturbances,  
24 resulting in a post-reclamation area of new disturbance of approximately 33 acres. Complete  
25 reclamation in the long term is anticipated for all buried pipelines. However, interim reclamation  
26 activities may experience difficulties due to the poor reclamation potential for soils in the Project Area  
27 from excess salts and presence of erosive soils.

28 Further discussion on soils can be found in Section 4.3.2 *Soils*, pages 4-31 to 4-38 of the DFPA EIS.

### 29 Alternative B – 14-foot ENAR Roadway

30 Impacts to soil resources would be similar to those described under the Proposed Action for all project  
31 components except for the ENAR. Under Alternative B, the ENAR would be constructed with a 14-foot  
32 running surface and approximately 24 turnouts, for a total surface disturbance of approximately 24  
33 acres. Impacts to soil resources would be less in comparison to the Proposed Action due to the reduce  
34 amount of surface disturbance. Reclamation procedures and mitigation methodologies are the same as  
35 those described under the Proposed Action.

## 4.8 Transportation and Access

### 1 Alternative A – Proposed Action

2 All project components would require routine maintenance and monitoring after construction is  
 3 complete in addition to traffic increases associated with use of the new infrastructure. Vehicle traffic  
 4 would include truck trips for delivery of the pipe, fittings, and related materials; mobilization and  
 5 demobilization of heavy equipment; construction, inspection, and supervision; reclamation; and daily  
 6 commuting of the workforce.

7 Based on data supplied by Samson Resources, implementation of the Proposed Action would result in an  
 8 average annual increase of six additional truck trips per day for the life of the project to accommodate  
 9 oil and gas condensate transport through the Project Area from the Applicants’ existing well pads.  
 10 Seasonally, the proposed project would result in approximately 39 daily vehicle trips during the drilling  
 11 season and approximately eight vehicle trips in the non-drilling season (Table 4-1). Increases in average  
 12 daily traffic along BLM roads would primarily occur during construction. Additional vehicle traffic could  
 13 increase the risk of traffic accidents on new and existing roadways from daily travel of project-related  
 14 employees and operations. Additional impacts could include increases in air emissions, fugitive dust,  
 15 noise, increased potential access to remote areas, an increased risk of vehicle collisions with livestock  
 16 and wildlife, and visual intrusion of project-related vehicles and activities.

17 Table 4-1 identifies the vehicular traffic estimates (non-round trips) for the Project Area.

**Table 4-1. Vehicular Traffic Estimate under the Proposed Action**

Traffic Direction	Vehicle Type	Average Daily Trips During Drilling Season	Average Daily Trips During Non-Drilling Season
Southbound	Semi	9	0.4
Southbound	Light Duty	9	6.2
Northbound	Semi	3	0.0
Northbound	Light Duty	18	two
<b>Total Daily Vehicle Trips</b>		<b>39</b>	<b>8.6</b>

Source: Samson Resources 2013

18 Construction of all project components would be completed in a planned sequence along proposed  
 19 routes, and require approximately 60 working days to complete. The ENAR would be constructed as a  
 20 collector road, as defined in the BLM Roadway Manual 9113, and would include a 20-foot running  
 21 surface with a minimum design speed of 30 miles per hour. Associated traffic visits would be spread  
 22 across the Project Area based on the planned sequence of construction; only a portion of the traffic  
 23 estimates would be realized in any one location of proposed project construction.

24 All vehicles would be licensed to meet U.S. Department of Transportation regulations. Road  
 25 maintenance would be performed as needed by the Applicants and other companies with ROW access,  
 26 or as required by managing agencies. Roads developed for the proposed project would be built to  
 27 include all water control structures (e.g., wing ditches, culverts, relief ditches, low water crossings,  
 28 surfacing, etc.) and would be surfaced with sufficient gravel to prevent erosion of the road surface and  
 29 allow safe operation.

1 Further discussion on transportation and traffic can be found in Section 4.13 *Transportation*, pages 4-  
2 120 to 4-124 of the DFPA EIS.

### 3 Alternative B – 14-foot ENAR Roadway

4 All project components and potential impacts would be similar to those discussed under the Proposed  
5 Action, except for the ENAR. Under Alternative B, the ENAR would be constructed as a resource road as  
6 defined in the BLM Roadway Manual 9113, and would include a 14-foot running surface, approximately  
7 24 turnouts (100 feet in length each) spaced at a maximum of 1,000 feet apart. Design speed, water  
8 control structures, road surface, and increase in average daily traffic would be the same as discussed in  
9 the Proposed Action.

## 4.9 Vegetation

### 10 Alternative A – Proposed Action

11 Implementation of the Proposed Action would result in approximately 495 acres of soil disturbance and  
12 vegetation removal in the Project Area. As identified in Chapter 3 and the SSRPs, the bare ground  
13 component represents anywhere from 38 to 82 percent of the basal ground cover. However, since on-  
14 site surveys were performed in October, additional vegetation communities may be present which were  
15 not visibly present during on-site surveys. In productive areas, primary vegetation communities that  
16 would be impacted from project activities include sagebrush shrubland (shrub steppe) and desert shrub  
17 vegetation. Primary impacts to existing vegetation under the Proposed Action include loss of habitat,  
18 habitat fragmentation, increased potential for invasive and noxious weed introduction and spread, soil  
19 compaction, and altered vegetation composition and structure.

20 The Applicants would begin reclamation practices as soon as practicable after the initial surface  
21 disturbances, which would eventually result in a post-reclamation disturbance area of approximately 33  
22 acres. Refer to Appendix B and C of this document for additional information on terms and conditions,  
23 and reclamation methodologies associated with the Project Area. Interim vegetation reclamation would  
24 experience difficulties due to the presence of sensitive soils (soils with excess salts, steep slopes, and  
25 high erosion hazard potentials) and the Project Area climate. Further discussion on vegetation can be  
26 found in Section 4.5 *Vegetation and Wetlands*, pages 4-48 to 4-51 of the DFPA EIS.

### 27 Alternative B – 14-foot ENAR Roadway

28 Impacts to vegetation resources under Alternative B from project activities would be similar to those  
29 described under the Proposed Action for all project components, except for the ENAR. Under  
30 Alternative B, development of the ENAR would result in approximately 24 acres of initial surface  
31 disturbance before interim reclamation efforts, compared to the Proposed Action (28 acres). Less  
32 surface disturbance under Alternative B would result in a slight reduction in loss of vegetation habitat  
33 and reduced potential for the spread of invasive and noxious weed species.

### 4.9.1 Invasive Non-native Plants and Noxious Weeds

#### 34 Alternative A – Proposed Action

35 Under the Proposed Action, planned project activities would result in approximately 495 acres of  
36 vegetation removal and soil disturbance. Construction activities, increased soil disturbance, and higher  
37 traffic volumes would create conditions favorable for the spread of undesirable and invasive and

1 noxious species. In addition, seeds and plant propagules could be spread by livestock and wildlife,  
2 construction machinery, and other human activities. Mitigation measures would be used during  
3 construction and reclamation activities would begin as soon as feasible after the initial surface  
4 disturbances to reduce the potential for spread of invasive plants and noxious weeds (Appendix B and  
5 C). Further discussion on invasive non-native plants and noxious weeds can be found in Section 4.5  
6 *Vegetation and Wetlands*, pages 4-48 to 4-51 of the DFPA EIS.

#### 7 Alternative B – 14-foot ENAR Roadway

8 The potential for spread and establishment of invasive plants and noxious weeds under Alternative B  
9 would be similar, but slightly less, than under the Proposed Action.

### 4.10 Visual Resources

#### 10 Alternative A – Proposed Action

11 All project related developments under the Proposed Action are located in VRM Class III areas. Project  
12 components under the Proposed Action would alter the existing landscape through the introduction of  
13 contrasting elements within the landscape in the form of new lines, colors, forms, and textures.  
14 Construction related activities would result in a temporary increase in the presence of heavy equipment  
15 and vehicular traffic, with an associated temporary increase in fugitive dust. Further discussion on visual  
16 resources can be found in Section 4.10 *Visual Resources*, pages 4-94 to 4-97 of the DFPA EIS.

#### 17 Alternative B – 14-foot ENAR Roadway

18 Potential impacts to visual resources associated with proposed activities under Alternative B would be  
19 similar to those discussed under the Proposed Action.

### 4.11 Water Resources and Quality (including Stormwater)

#### 4.11.1 Surface Water

#### 20 Alternative A – Proposed Action

21 Pipeline crossings and construction of the ENAR would result in impacts to surface water quality from  
22 disturbances associated with removal of vegetation, exposure of the underlying soil surface, traffic,  
23 waste management, and increased potential for sedimentation to surface waters. Actions which  
24 remove vegetation and compact soil would result in temporary increases in surface runoff following  
25 precipitation events, erosion, and transfer of dissolved solid concentrations (i.e., salt) into the Colorado  
26 River Basin. Under the Proposed Action, project pipelines would cross multiple ephemeral waterways,  
27 Willow Creek, and Sand Creek, with most impacts occurring in Sand Creek. Proposed pipelines would  
28 cross Sand Creek in two locations, and would result in approximately 0.5 acre of surface disturbance.  
29 Project pipelines would intersect other waterways, including Willow Creek, once and would result in less  
30 than 0.01 acre of surface disturbance per crossing.

31 Trenching for pipeline installation and placement through Sand Creek and Willow Creek would result in  
32 changes to existing channel morphology, removal of channel stabilizing vegetation, and potential loss of  
33 channel stability. Reduced channel stability can lead to increased transfer of sediments, including salt,  
34 into waterways and the Colorado River Basin. Other substances associated with construction-related  
35 activities could be carried by runoff into surface waters. Since most of the drainages in the Project Area

1 are ephemeral in nature, and the current surface water quality is considered as poor to very poor, it is  
2 unlikely the quality of surface water would be adversely impacted under the Proposed Action.

3 The Applicants would hydrostatically test each pipeline following installation. Although safeguards are  
4 required by the BLM and the Wyoming State Department of Environmental Quality/Water Quality  
5 Division to prevent accidental spillage, erosion, or scouring of the natural channels, such unintentional  
6 impacts occasionally result. In the unlikely event of such discharge, the Applicants would be held  
7 responsible for any erosion or scouring resulting from such discharge.

8 The BLM would require the Applicants to bore proposed pipelines beneath Sand Creek and Willow Creek  
9 in the effort to reduce impacts to these waterways from erosion, and to protect stream bank stability.  
10 Use of boring techniques would require two 50-foot by 100-foot temporary workspaces per crossing  
11 (total of approximately 0.23 acre of surface disturbance) for boring equipment. Temporary workspaces  
12 would be located adjacent to waterways to avoid channel degradation, which may result in some short-  
13 term erosion, sedimentation, and salts into the Colorado River Basin. However, boring Sand and Willow  
14 Creeks would decrease potential for erosion, sedimentation, and salts into the Colorado River Basin,  
15 over the long term, compared to trenching directly into the streambeds.

16 In accordance with the Clean Water Act, the BLM may require the Applicants to obtain a formal  
17 jurisdictional determination by the USACE and necessary permits prior to any construction that could  
18 affect waters of the U.S. or verification that the impacts do not require a permit. If permitting is  
19 required, channel crossing at Sand Creek and other waters of the U.S. in the Project Area would likely  
20 receive expedited authorization from the USACE through General Permit 98-08, which authorizes  
21 activities associated with oil and gas exploration and development in the State of Wyoming (BLM  
22 2004b).

23 Further discussion on water resources and quality can be found in Section 4.4.3.1.1 *Surface Water*,  
24 pages 4-40 to 4-44 of the DFPA EIS.

#### 25 Alternative B – 14-foot ENAR Roadway

26 Impacts to surface water quality under Alternative B from planned project development would be  
27 similar to those described under the Proposed Action for all project components, except for the ENAR.  
28 There would be less surface disturbance associated with development of the ENAR under Alternative B  
29 (24 acres) compared to the Proposed Action (28 acres). Less surface disturbance and less roadway  
30 surface could reduce the potential for impacts to surface water quality resulting from surface runoff,  
31 erosion and sedimentation. Mitigation and reclamation methodologies would be the same as discussed  
32 under the Proposed Action.

## 4.12 Wild Horses

### 33 Alternative A – Proposed Action

34 The Project Area is located in the Adobe Town HMA. Surface disturbances associated with  
35 implementation of planned activities under the Proposed Action would impact approximately 495 acres  
36 of wild horse habitat in the Adobe Town HMA before interim reclamation. Project construction,  
37 maintenance, and operation activities would result in loss of approximately 41 AUMs of available forage,  
38 increased human activity which could affect wild horse natural roaming behavior, and potential  
39 displacement of horses from the area. Loss of habitat could further increase competition for forage  
40 between wild horses and livestock in the in the area. At this time it is not known what impacts the

1 activities and increased amount of human presence may have upon the behavioral patterns of wild  
2 horses (BLM 2004b).

3 Further discussion on wild horses associated with the Adobe Town HMA can be found in Section  
4 4.7.3.1.3 *Wild Horses*, page 4-64 of the DFPA EIS.

#### 5 Alternative B – 14-foot ENAR Roadway

6 Impacts to wild horses would be similar to the Proposed Action, except slightly less. Under Alternative  
7 B, development of the ENAR would result in fewer acres of surface disturbance before interim  
8 reclamation, compared to the Proposed Action.

### 4.13 Cumulative Impacts

9 Cumulative impacts are those impacts that result from the incremental impact of a proposed project  
10 when added to other past, present, and reasonably foreseeable actions, regardless of which agency or  
11 person undertakes such actions. Cumulative impacts associated with oil and gas developments in and  
12 adjacent to the Project Area were assessed in the DFPA EIS (2004b). As a result, the cumulative impact  
13 analysis in this chapter tiers to and incorporates by reference the analysis in the DFPA EIS, with the DFPA  
14 as the cumulative impacts assessment area.

15 As of September 2012, the BLM had permitted 223 wells total in the DF EIS Project Area. 158 of the 223  
16 were permitted prior to the DFPA ROD (2004a). The BLM analyzed the potential development of 385  
17 wells in the DFPA EIS (2004b). As of September 2012, the BLM permitted 64 Producing Wells and one  
18 disposal well. The DFPA EIS (2004b) analyzed 4,900 acres of short term disturbance. As of September  
19 2012, the estimate for on lease permitted disturbance is 475 acres, since the DFPA ROD (2004a). Some  
20 other disturbances from main access roads, some pipelines, new compressor stations, gas plants, and  
21 evaporation ponds had not yet been calculated, but total surface disturbance remains within the analyzed  
22 footprint of the Desolation EIS (2004b). Samson cancelled 32 Notices of Staking (NOS) near the Project  
23 Area (25 NOS on March 26, 2013, and 7 NOS on April 2, 2013). If these were later to be re-staked, and  
24 found to be economically viable, the company, or successor, may pursue additional gas activities in or  
25 near these formerly staked areas again. Additionally, Samson has had three applications with the Rock  
26 Springs Field Office nearby on the Desolation Road Unit (DRU) also tiered to the DFPA EIS (BLM 2004a).  
27 Samson applications include an existing well (DRU 34-21). A recently dropped well (DRU 31-28) and a  
28 currently proposed well (DRU 11-34).

29 Although 461 acres (approximately 93 percent) of the new surface disturbance from the proposed  
30 project would be reclaimed, the initial increase in surface disturbance in conjunction with existing and  
31 reasonably foreseeable development projects and other development projects would contribute to a  
32 change in the area from a relatively open, high desert landscape to an area exhibiting increased human  
33 intrusion and occupancy. Traffic volumes associated with oil and natural gas developments may  
34 increase if future developments include producing oil or natural gas well locations. Continued growth  
35 associated with oil and natural gas development and needs associated with other future projects would  
36 provide opportunity for increased job growth and revenue in the local economy. Visitors to the area  
37 would experience the increased sights and sounds of industrial development.

38 Cumulative surface disturbances would incrementally reduce and fragment existing wildlife habitat,  
39 potentially affect movement patterns, migration corridors, and forage resources. Recent research  
40 suggests that the cumulative and synergistic effects of current and foreseeable oil and gas development  
41 within the vicinity of Greater Sage-Grouse nesting, brood-rearing, nesting, breeding habitats have the  
42 potential to impact local Greater Sage-Grouse populations, cause declines in lek attendance, and may

1 result in local extirpation (BLM 2011b). Construction, transportation, production and maintenance  
2 activities would cause interactive cumulative impacts to wildlife species, especially during sensitive  
3 breeding and wintering time periods. Vegetation removal along with other activities in the area may  
4 result in an incremental increase in invasive non-native plants and noxious weeds. Increased future  
5 developments and human presence would contribute to existing impacts on soil, vegetation, and water  
6 resources, including increased potential for sedimentation and reduced population viability.

7 Potential impacts to social conditions include changes in population, such as fluctuations caused by  
8 economic boom-and-bust cycles; changes in the demand for housing and community services, along  
9 with community fiscal conditions, which can impact the ability of state, regional, and local governments  
10 to supply community services such as education; and changes in community character, culture, and  
11 social trends. The BLM does not directly manage social conditions in the planning area. However, the  
12 BLM management actions have the potential to indirectly impact social conditions and contribute  
13 cumulatively to the growth of local communities. Approval of this project would create job opportunities  
14 for Sweetwater and Carbon Counties residents, potentially contributing to population growth in  
15 communities near the planning area. However, since natural gas prices have substantially decreased,  
16 U.S. natural gas prices have dropped in recent years from \$9.96 per thousand cubic feet (MCF) in May  
17 2008 to \$1.94/MCF in May 2012 (USDOC 2012), the incremental impact from this project would be  
18 expected to be small.

19 Further discussion of cumulative impacts can be found in Chapter 5 of the DFPA EIS, *Cumulative Impacts*  
20 *Analysis*, pp. 5-1 to 5-28. This project would not exceed the cumulative effects analyzed in the DFPA EIS.

## CHAPTER 5 – CONSULTATION AND COORDINATION

### 5.1 List of Preparers

1 Table 5-1 identifies the list of preparers for this environmental assessment.

**Table 5-1. List of Preparers**

Individual	Discipline	Organization
John Russell	Project Manager	BLM
Victoria Stamps	Realty Specialist	BLM
Ben Smith	Wild Horse/Burro	BLM
Bruce Estvold	Civil Engineer	BLM
David Hullum	Recreation/VRM	BLM
Jennifer Fleuret	Hydrology	BLM
Kelly Owens	Hydrology	BLM
John Sjogren	NRS	BLM
Marcell Astle	Range	BLM
Mary Read	Wildlife Biologist	BLM
Patrick Walker	Archaeology	BLM
Susan Foley	Soils	BLM
Madeline Terry	Project Manager	ICF International
Bill Knapp	Project Coordinator	ICF International
Lucas Bare	Natural Resource Specialist	ICF International
Dan Nally	Natural Resource Specialist	ICF International
Eric Pitcher	GIS Analyst	ICF International

### 5.2 Agency and Tribal Consultation

2 **U.S. Fish and Wildlife Service:** The BLM conducted programmatic consultation with the U.S. Fish and  
 3 Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA) as part of the DFPA EIS  
 4 process. The BLM initiated formal consultation on February 24, 2004, by submitting the Biological  
 5 Assessment to the USFWS. The USFWS concluded consultation by signing the Biological Assessment on  
 6 April 1, 2004. For documentation of this process and additional information, refer to Appendix F of the  
 7 DFPA ROD (BLM 2004a). No impacts which would exceed the scope of the DFPA Biological Assessment  
 8 or require additional USFWS consultation are anticipated as part of the Proposed Action or Alternative  
 9 B. The BLM notified the USFWS regarding the availability of this EA and the opportunity to review and  
 10 comment during the 14-day public review period.

11 **Wyoming State Historic Preservation Office:** The Wyoming State Historic Preservation Office (SHPO)  
 12 Cultural Records Office was contacted before the Class III cultural resource inventories were conducted  
 13 in 2012 to identify any cultural resources that had been previously recorded in the Project Area.  
 14 Consultation on the findings from the Class III cultural resource inventories was completed with the

1 SHPO, as required in *the Programmatic Agreement among the BLM, the Advisory Council on Historic*  
2 *Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner*  
3 *in which the BLM Will Meet Its Responsibilities Under the National Historic Preservation Act, State*  
4 *Protocol Between the Wyoming BLM State Director and the Wyoming State Historic Preservation Officer.*  
5 The SHPO concurred with the findings in the reports and with the stipulation that construction activities  
6 be monitored by a qualified archaeologist. The BLM notified the SHPO regarding the availability of this  
7 EA and the opportunity to review and comment during the 14-day public review period.

8 **Tribal Consultation:** The BLM initiated Government-to-Government consultation with eight potentially  
9 affected and interested Native American Tribes as part of the DFPA EIS process. Letters were sent to the  
10 Shoshone Tribal Cultural Center, the Eastern Shoshone Tribal Council, the Comanche Business Council,  
11 the Northern Arapaho Tribal Business Council, the Fort Hall Business Council, the Northern and Southern  
12 Ute Tribes, and the Medicine Wheel Coalition. No issues or properties of traditional religious and  
13 cultural importance to the tribes were identified with the Project Area. Based on the Cultural Class III  
14 surveys, no new sites or unanticipated discoveries that may be sensitive to the tribes have been found  
15 associated with the Proposed Action or Alternative B. The BLM notified all potentially affected tribes  
16 regarding the availability of this EA and the opportunity to review and comment during the 14-day  
17 public review period.

### 5.3 Summary of Public Participation

18 The BLM posted notification of this EA on the Wyoming BLM's Environmental Notification Bulletin Board  
19 on August 20, 2013. The EA will be posted on the BLM RFO website and sent out to federal agencies and  
20 those parties who have expressed interest in the project for a 14-day public review period. The BLM  
21 issued a news release and sent notifications regarding the availability of this EA and its review period to  
22 local governments, individuals, non-governmental organizations, allotment holders, and other  
23 stakeholders on the project mailing list.

**CHAPTER 6 – REFERENCES CITED**

- 1 Anadarko Petroleum Corporation. 2012. Site Specific Reclamation Plans for the Endurance Northern  
2 Pipeline, Barricade High Pressure and Pressure Reducing Pipelines, and Barricade East and West  
3 Compressor Sites.
- 4 Blickley, Jessica I., Diane Blackwood, and Gail I. Patricelli. 2012. Experimental Evidence for the Effects of  
5 Chronic Anthropogenic Noise on Abundance of Greater Sage-Grouse at Leks. *Conservation Biology*.  
6 Vol. 26.No. 3. 461-471.
- 7 Blickley, Jessica I. and Gail I. Patricelli. 2012. Chapter 3 Potential Acoustic Masking of Greater Sage-Grouse  
8 (*Centrocercus urophasianus*) Display Components by Chronic Industrial Noise. *Ornithological*  
9 *Monographs*. Vol. 74. 23-35.
- 10 British Meteorological Office (BMO). 2009. British Meteorological Office's Hadley Centre, 2009. Accessed  
11 June 2013. Available online: <http://www.metoffice.gov.uk/climatechange/science/monitoring/>.
- 12 BLM. 1981. (Soil and Land Use Technology, Inc.) Soil inventory of the Overland Area, Wyoming. Volume  
13 one of two.
- 14 BLM. 1994. Guidelines for Assessing and Documenting Cumulative Impacts. Washington D.C.
- 15 BLM. 1996. Wyoming Gap Analysis Land Cover (vegetation types) for Wyoming 2nd Edition. Laramie,  
16 Wyoming. University of Wyoming, Spatial Data and Visualization Center. Available online:  
17 <http://www.sdvc.uwyo.edu/24k/landcov.html>.
- 18 BLM. 1998. BLM National Environmental Policy Act Handbook H-1790-1. BLM Office of the Assistant  
19 Director, Renewable Resources and Planning. Washington, DC 20240. 184 pages. Available online:  
20 [http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning\\_general.Par.2116.File.d](http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.2116.File.dat/Handbook.NEPA.H-1790-1.2k8.01.30[1].pdf)  
21 [at/Handbook.NEPA.H-1790-1.2k8.01.30\[1\].pdf](http://www.blm.gov/pgdata/etc/medialib/blm/ak/aktest/planning/planning_general.Par.2116.File.dat/Handbook.NEPA.H-1790-1.2k8.01.30[1].pdf).
- 22 BLM. 2001. Draft Environmental Impact Statement for the Desolation Flats Natural Gas Field  
23 Development Project in Sweetwater and Carbon Counties, Wyoming.
- 24 BLM. 2004a. Record of Decision for the Desolation Flats Natural Gas Field Development Project in  
25 Sweetwater and Carbon Counties, Wyoming.
- 26 BLM. 2004b. Final Environmental Impact Statement for the Desolation Flats Natural Gas Field  
27 Development Project in Sweetwater and Carbon Counties, Wyoming.
- 28 BLM. 2008a. RFO RMP and Proposed Final EIS. BLM 2008. Available online:  
29 [http://www.blm.gov/wy/st/en/programs/Planning/rmps/rawlins/feis\\_prmp.html](http://www.blm.gov/wy/st/en/programs/Planning/rmps/rawlins/feis_prmp.html).
- 30 BLM. 2010. BLM Wyoming Sensitive Species Policy and List. Available online:  
31 <http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2010.Par.41285.File.dat/wy>  
32 [2010-027atch2.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wy/resources/efoia/IMs/2010.Par.41285.File.dat/wy).
- 33 BLM. 2011a. RFO Wild Horse Herd Management Areas. Adobe Town HMA. Accessed 6/12/2013.  
34 Available online: [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/wh.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/wh.html).
- 35 BLM. 2011b. A Report on National Greater Sage-Grouse Conservation Measures. Sage-grouse National  
36 Technical Team. BLM-1342.
- 37 BLM 2011c. RFO Ecological Site Descriptions. Accessed 7/11/13. Available online:  
38 [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/reclamation/esd.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/reclamation/esd.html).

- 1 BLM. 2013. BLM Resource Specialists ID Team Onsite Data Sheets. 2013.
- 2 Environmental Protection Agency (EPA). 2013. EPA Identifies Noise Levels Affecting Health and Welfare.  
3 Available online: <http://www.epa.gov/history/topics/noise/01.html>.
- 4 Hayden-Wing and Associates (HWA). 2012. Samson Resources Company: Wildlife Surveys, Endurance  
5 Northern Access Road and Pipeline. Prepared for Samson Resources Company by Hayden Wing and  
6 Associates, Laramie, Wyoming.
- 7 Hayden-Wing Associates LLC. No Date. Samson Resources Company: Presence/Absence of Wyoming  
8 Pocket Gopher (*Thomomys clusius*) within the Endurance Northern Access Road Prepared for Samson  
9 Resources Company by Hayden Wing and Associates, Laramie, Wyoming.
- 10 Ingelfinger, F. and S. Anderson. 2004. Passerine response to roads associated with natural gas extraction  
11 in a sagebrush steppe habitat. *Western North American Naturalist* 64:385-395.
- 12 Intertech. 2013. Site Specific Reclamation Plans for the Endurance/Barricade Gas Infrastructure Project.  
13 Laramie, Wyoming, 82070.
- 14 Manier, D.J., Wood, D.J.A., Bowen, Z.H., Donovan, R.M., Holloran, M.J., Juliusson, L.M., Mayne, K.S., Oylar-  
15 McCance, S.J., Quamen, F.R., Saher, D.J., and Titolo, A.J., 2013, Summary of science, activities,  
16 programs, and policies that influence the rangewide conservation of Greater Sage-Grouse  
17 (*Centrocercus urophasianus*): U.S. Geological Survey Open-File Report 2013-1098, 170 p. Available  
18 online: <http://pubs.usgs.gov/of/2013/1098/>.
- 19 Mountain Gas Resources (MGR). 2013. Plan of Development for the Endurance/Barricade Gas  
20 Infrastructure Project.
- 21 Nicholoff, S.H., compiler. 2003. Wyoming Bird Conservation Plan, Version two. Wyoming Partners in  
22 Flight. Wyoming Game and Fish Department, Lander, WY.
- 23 Orabona, A., C. Rudd, M. Grenier, Z. Walker, S. Patla, and B. Oakleaf. 2012. Atlas of Birds, Mammals,  
24 Amphibians, and Reptiles in Wyoming. Wyoming Game and Fish Department Nongame Program,  
25 Lander, Wyoming. 232 pp.
- 26 Patricelli, G.L., Blickley, J.L., and Hooper, S.L. 2012. The impacts of noise on greater sage grouse: a  
27 discussion of current management strategies in Wyoming with recommendations for further research  
28 and interium protections.
- 29 Samson Resources. 2012. Predisturbance Soil and Vegetation Monitoring Reclamation and Monitoring  
30 Plan for Endurance Northern Access Road and Pipeline ROW.
- 31 Samson Resources. 2013. Plan of Development for the Endurance/Barricade Gas Infrastructure Project.
- 32 Sawyer, H., R. Nielson, and D. Strickland. 2009. Sublette Mule Deer Study (Phase II): Final Report 2007.  
33 Western Ecosystems Technology, Inc. Cheyenne, Wyoming, USA.
- 34 Department of the Interior (USDI). 1980. Department Manual, Part 516 National Environmental Policy Act  
35 of 1969. Available online:  
36 [http://www.blm.gov/wo/st/en/prog/planning/nepa/webguide/departmental\\_manual.html](http://www.blm.gov/wo/st/en/prog/planning/nepa/webguide/departmental_manual.html).
- 37 U.S. Department of the Interior and U.S. Department of Agriculture. 2007. Surface Operating Standards  
38 and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+3071/Rev 07.  
39 BLM. Denver, Colorado. 84 pages.
- 40 U.S. Department of Commerce (USDOC). 2012. Census Bureau.

- 1 U.S. Global Change Research Program (USGCRP). 2009. Global Climate Change Impacts in the United  
2 States. Cambridge University Press.
- 3 WGF. 2011. Wyoming Game and Fish Department Commission 2011 Annual Report. 261 pages.  
4 Available online:  
5 [http://wgfd.wyo.gov/web2011/Departments/WGFD/pdfs/WGFDANNUALREPORT\\_20110001745.pdf](http://wgfd.wyo.gov/web2011/Departments/WGFD/pdfs/WGFDANNUALREPORT_20110001745.pdf).
- 6 WGF. 2012. Big Game GIS Data. Available online: [http://wgfd.wyo.gov/web2011/wildlife-](http://wgfd.wyo.gov/web2011/wildlife-1000819.aspx)  
7 [1000819.aspx](http://wgfd.wyo.gov/web2011/wildlife-1000819.aspx).

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*Endurance/Barricade Gas Infrastructure Project*

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## *Appendix A*

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ID Team Checklist

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1 **APPENDIX A. ID TEAM CHECKLIST**  
 2 **Samson Resources and Mountain Gas Resources Proposal for the Endurance/Barricade Gas**  
 3 **Infrastructure Project, Endurance and Barricade Units, Sweetwater County, Wyoming**

4 **Environmental Assessment DOI-BLM-WY-030-2013-0151-EA**

5 **DETERMINATION OF STAFF: (Choose one of the following abbreviated options for the left column)**

- 6 • NP = not present in the area impacted by the proposed or alternative actions  
 7 • NI = present, but not affected to a degree that detail analysis is required  
 8 • PI = present and potentially affected by the project; impact analyzed in detail in the EA

Determination	Resource	Rationale for Determination
RESOURCES AND ISSUES CONSIDERED (INCLUDES SUPPLEMENTAL AUTHORITIES APPENDIX 1 H-1790-1)		
PI	Air Quality	<p>Emissions from earth-moving equipment, vehicle traffic, construction and maintenance activities, daily tailpipe and fugitive dust emissions, and other sources could affect air quality. Measurable amounts of fugitive dust may be produced during construction and production activities; however, these increases would primarily be limited to the 60-day construction period and low weekly occurrence production vehicular traffic. Traffic volumes are anticipated to increase slightly above current levels to include a total of six additional truck trips per day for the life of the project.</p> <p>Compressor site pads, road, and pipeline construction is expected to take approximately 60 days. Activities described in the Proposed Action would result in localized short-term increases in emissions during brush clearing of the ROW, construction of access roads, topsoil stockpiling, trenching, pipe delivery, pipeline installation, backfilling, and reclamation. Pollutants generated during construction activities would include gas and diesel equipment combustion emissions and fugitive dust associated (PM<sub>10</sub> and PM<sub>2.5</sub>) with construction equipment and vehicles. Once construction activities are complete, air quality impacts associated with these activities would cease.</p>
NP	ACECs	None present per 2008 Rawlins RMP and ROD review.
NP	BLM Natural Areas	None present per 2008 Rawlins RMP and ROD review.
PI	Cultural Resources	<p>Cultural resources were identified during onsite Class III cultural resource inventories and will be avoided by the proposed project.</p> <p>The Class III cultural inventories identified a total of 46 sites including 25 newly documented sites and 21 previously documented sites in the Project Area. The site types include prehistoric campsites and lithic scatters, and historic debris scatters. Five of the sites are evaluated as eligible for inclusion in the NRHP because of their potential to yield data important to history and prehistory. The Project Area includes areas that have the potential for undetected buried cultural deposits. Project construction will operate under a standard BLM cultural stipulation where a BLM permitted archaeologist will monitor construction activities.</p> <p>Indirect long-term cumulative impacts from increased access and the presence of project personnel could result in a range of impacts to known and undiscovered cultural resources in the vicinity of the project location. These impacts could range from accidental damage or vandalism to illegal collection and excavation.</p>

Determination	Resource	Rationale for Determination
NP	Environmental Justice	No minority or economically disadvantaged communities or populations would be disproportionately adversely affected by the proposed action or alternatives because none are present in or adjacent to the Project Area.
NP	Farmlands (Prime or Unique)	No prime or unique farmlands, as designated by the NRCS, exist in the Project Area.
PI	Fish and Wildlife Excluding Special Status Species	<p>Portions of the Project Area are located in big game crucial habitat for pronghorn antelope and mule deer. Additionally, prairie dog towns and suitable prairie dog habitat are located in the Project Area. As a result, proposed project activities may impact habitat for these species.</p> <p>A seasonal surface-disturbance timing stipulation would apply for affected locations of pronghorn crucial habitat and mule deer. The Applicants would apply the criteria and mitigation measures detailed in Appendices A, B, and C of the DFPA ROD (BLM 2004) for protection of pronghorn antelope, mule deer, prairie dogs, and their habitat. Additionally the Applicants would apply practices established in Appendix E of the DFPA ROD (BLM 2004) for further identification and protection of prairie dog habitat.</p>
NP	Floodplains	None of the proposed project components cross inventoried floodplains and would not be of concern under Executive Order 11988 for Flood Plain Management.
NI	Fuels/Fire Management	The Project Area is located in an area designated for use of wildland fire methods; however, the proposed project would not conflict with fire management activities due to the presence and use of existing and proposed oil and gas operations.
NI	Mineral Resources/ Energy Production	Natural gas and oil are the only mineral/energy resources that could be impacted by the proposed project. However, the proposed project allows for the recovery of natural gas and oil per 43 CFR 3162.1(a), under existing federal leases.
PI	Greenhouse Gas Emissions	<p>Emissions from earth-moving equipment, vehicle traffic, construction and maintenance activities, daily tailpipe and fugitive dust emissions, and other sources could contribute to GHG emissions.</p> <p>However, due to the short duration of approximately 60 days for proposed project construction activities and small volume of increased vehicle traffic from existing levels, contributions to GHGs would be negligible.</p>
PI	Hydrologic Conditions (stormwater)	<p>The construction of project components under the Proposed Action would alter the topography of the area to a small degree and could change surface water flow patterns. The Applicants would install culverts where the ENAR intersects existing drainages. The Applicants would adhere to the ACEPMs detailed in Appendix A of the DFPA Final EIS and BMPs in the Applicant prepared site specific reclamation plans. All stormwater controls would be installed as stated in the Applicants' reclamation plans and in coordination with BLM staff. Use of these protection measures would reduce the potential for reportable quantities of stormwater discharge or erosion runoff into ephemeral drainages.</p> <p>The proposed project has the potential to impact ephemeral drainages that are tributary to the Colorado River. Other substances associated with construction-related activities, including petroleum-based hydrocarbons, could also be carried by runoff into surface waters.</p>
PI	Invasive, non-native Plants/Noxious Weeds	<p>Under the Proposed Action, approximately 495 acres of initial surface disturbance would occur from project related activities.</p> <p>For all disturbances, soils would be re-contoured and reseeded after abandonment and during reclamation.</p> <p>As discussed in Section 2.2 of this EA, the Applicants would control invasive species along roads, pipeline corridors, and compressor sites, and apply the criteria and mitigation measures from Appendices A, B, and C of the DFPA ROD</p>

Determination	Resource	Rationale for Determination
		(BLM 2004) and Applicant prepared site specific reclamation plans. Based on the Applicants' commitment to monitor and control noxious weeds (see Section 2.2), proposed project activities should not increase weed infestations in the Project Area; however, an increase in infestations of invasive plants/noxious weeds has occurred in previously disturbed areas, even with mitigation measures in place.
PI	Transportation and Access	The Proposed Action would result in new access road and also a marked increase in truck traffic along BLM roads for the duration of the project. Vehicle traffic would include truck trips for delivery of the pipe, fittings, and related materials; mobilization and demobilization of heavy equipment; construction, inspection, and supervision; reclamation; and daily commuting of the workforce.
PI	Livestock Grazing and Rangeland Health Standards	<p>The Project Area is located in the Willow Creek allotment, which is an active sheep and cattle livestock allotment. The BLM has seasonally approved this grazing area for the months of 11/1 through 2/28 for sheep, and 4/1 through 6/25 for cattle.</p> <p>The Project Area vegetation/livestock forage has low reclamation potential due to the prevalence of sodic, saline, and sandy soils. Therefore, proposed project activities may reduce the amount of available AUMs for use by grazing livestock.</p> <p>To limit potential impacts to range resources and livestock operations, the Applicants would restore, stabilize, and reseed disturbed areas using native plant species in accordance with BLM requirements through an established reclamation plan. Refer to Appendix C of the DFPA ROD (BLM 2004a) for additional information on the Project Area reclamation plan and protections for livestock and rangeland resources.</p>
PI	Migratory Birds	<p>Multiple raptor nests and habitat locations for migratory bird species are present throughout the Project Area. Refer to Section 3.7.7 and Table 3-22 of the DFPA DEIS (BLM 2001) for detailed information of raptor and migratory bird species that occur in the area.</p> <p>Seasonal stipulations are present for multiple bird species, including raptors, in the Project Area which would prohibit or avoid surface-disturbing activities based on species presence. Proposed project activities occur within ¼- to 1-mile of known nesting locations and designated habitats, which may impact migratory bird species. The Applicants would adhere to BLM established Terms and Conditions, and apply the criteria and mitigation measures detailed in Appendices A, B, and C of the DFPA ROD (BLM 2004a) for migratory birds and their habitat.</p>
NP	Native American Religious Concerns	Tribal consultations for this area were initiated and closed under the DFPA FEIS and ROD (BLM 2004a) and no concerns are relevant to the Project Area. The Proposed Action would not hinder access to or affect Native American Religious sites.
NI	Lands With Wilderness Characteristics (LWC) and BLM Designated "Wild Lands"	<p>Based on the BLM 2012 LWC inventory, the Adobe Town Fringe Area C is located along the eastern border of the Project Area. The Barricade High Pressure and Pressure Reducing Pipeline Loop run along the border of the Adobe Town Fringe Area C, and the Barricade West Compressor Site would be located within the Adobe Town Fringe Area C.</p> <p>The Barricade West Compressor Site would occupy less than one percent of the Adobe Town Fringe Area C, and would be installed in accordance with the planning criteria and BMPs provided in Appendix A of the Desolation Flats ROD.</p>
PI	Noise	The proposed action would result in 60 days of elevated construction and traffic noise. The greatest increase would be along access roads, operation of equipment at material staging areas, developing compressor site pads, and the pipeline alignment during trenching, pipe placement, backfilling/recontouring, and seedbed preparation.
NI	Paleontology/	The Project Area is located in the Washakie Formation, which has a PFYC of four to five. Based on the PFYC rating, the Washakie Formation has a moderate to high

Determination	Resource	Rationale for Determination
	Geology	potential to contain significant paleontological resources.  Paleontological surveys completed in the Project Area in December 2012, (Erathem-Vanir Geological 2012) indicated a low potential for occurrence of fossils of scientific importance in the Project Area; therefore, impacts to this resource are anticipated to be minimal.
NI	Recreation	The Project Area is located in the Adobe Town Dispersed Recreation Use Area, but does not contain any developed recreation-sites/trails or Special Recreation Management Areas. Current recreational use is associated with hunting, camping, hiking, ORV use, and wildlife viewing. Due to the location of the majority of proposed project components within existing surface scars and lack of developed recreation-sites/trails, impacts to this resource would be minimal.
PI	Socio-economics	The Proposed Action would have minor positive impacts on the local economies of Sweetwater County, and nearby areas of Carbon County through the creation of additional job opportunities in the oil and gas industry and in supporting trades and services. Sweetwater County would also receive additional sales tax, property tax, and royalty revenues. Sales tax revenues would also benefit nearby communities in both Sweetwater and Carbon counties.  The Proposed Action could result in negative social impacts including changing the recreational character of the area, reducing scenic quality, increasing dust levels especially during construction, and increasing traffic. Additional cumulative impacts on local communities' infrastructure a possibility, depending on current economic viability.
PI	Soils	The Project Area is primarily comprised of loamy sand and sandy loam textures, to clays and clay loam textures. Sodic and saline soils are present in the Project Area.  For all disturbances, soils would be re-contoured and reseeded during reclamation. Erosive and low reclamation potential soils will be avoided where possible, and revegetation practices will be utilized following disturbances to further reduce the potential for erosion. The Applicants would adhere to planning criteria provided in Appendix A of the Desolation Flats Final EIS and the site specific Project Area reclamation plans.
PI	Special Status Species- Animals including Sensitive Species and USFWS Threatened, Endangered or Candidate Animal Species	Based on a review of previous on-site surveys and GIS data, Greater Sage-Grouse leks, burrowing owl habitat, potential mountain plover habitat, and potential habitat for black footed ferret occur in the Project Area. Additionally, habitat and observations for several the BLM sensitive species including loggerhead shrike, sage thrasher, Brewer's sparrow, sage sparrow, long-billed curlew, Wyoming pocket gopher, various bat species and Great Basin spadefoot toad occur in the Project Area. Refer to Section 3.8 of the DFPA DEIS (BLM 2001) for more information on designated species. As a result, construction and installation of proposed project activities may impact designated species.  The Applicants would adhere to BLM established Terms and Conditions and apply the criteria and mitigation measures detailed in Appendices A, B, and C of the DFPA ROD (BLM 2004a) for all designated species and their habitat.
NP	Special Status Species- Plants Including Sensitive Species and USFWS Threatened, Endangered or Candidate Plant Species	No known populations or areas of identified habitat for threatened, endangered, or candidate plant species are present in the Project Area.

Determination	Resource	Rationale for Determination
PI	Vegetation	<p>Under the Proposed Action, approximately 495 acres of initial surface disturbance in existing vegetative habitat would occur from project related activities.</p> <p>Primary vegetation communities affected by proposed project activities include sagebrush species, woody shrubs, forbs, and grasses. Following construction or project completion, the Applicants would restore, stabilize, and reseed surface-disturbed areas with native vegetation species in accordance with BLM requirements stated in the DFPA ROD (BLM 2004a) and through established site specific reclamation plans.</p>
PI	Visual Resources	<p>The Project Area is located in a VRM Class III area. Visual impacts due to pipeline installation, construction of compressor site pads, and road construction would occur in the project area. The existing landscape would be changed by the introduction of contrasting elements within the landscape in the form of new lines, colors, forms, and textures. The new pipelines, new road and new compressor site pads would increase the presence of heavy equipment, and vehicular traffic with an associated increase in dust and light pollution. The Proposed Action would create approximately 495 acres of initial surface disturbance and 33 acres of long term disturbance. Once the pipeline is installed, the pipeline corridor would be recontoured and seeded.</p>
NI	Wastes (hazardous or solid)	<p>Hazardous materials above reportable quantities will not be produced by constructing the proposed ENAR, pipelines, or facilities. All wastes subject to regulation will be handled in compliance with applicable laws to minimize the potential for leaks or spills to the environment. The Applicants will also maintain a Spill Control and Countermeasure Plan, which includes notification requirements, including the BLM, for all reportable spills.</p> <p>Trash and other waste materials would be cleaned up and removed immediately after completion of operations.</p>
PI	Waters of the U.S.	<p>Proposed project activities or components would cross Sand Creek, which is an identified water of the U.S. Impacts to Waters of the U.S. are anticipated to be negligible based on the minor area of projected water crossing (approximately 0.03 acres), use of BMPs from the DFPA ROD (BLM 2004a), and implementation of BMPs detailed in the Project Area Site Specific Reclamation Plans (SSRPs). Additionally, impacts associated with road and pipeline crossings across Waters of the U.S. were assessed in detail in Section 4.4 of the Desolation Flats EIS, and determined to have no adverse impacts to water flow hydraulics (BLM 2004a).</p>
PI: Surface water NI: Groundwater	Water Resources/Quality (surface/ground)	<p>Surface water: The Project Area is located in the Colorado River Basin and contains two waters of the U.S., Sand Creek and Willow Creek, and multiple ephemeral waterways. The potential for negative impacts to water quality would be from soil erosion and runoff due to surface-disturbing activities. Per Appendices B and C in the DFPA ROD (BLM 2004a) and Applicant prepared site specific reclamation plans, the Applicants will employ mitigation and reclamation measures to control erosion and runoff, including appropriate measures to prevent disturbed sediments from reaching ephemeral drainages during precipitation events. Additionally, the Applicants would prepare Spill Prevention Control and Countermeasures Plans (SPCCs) for dealing with any potential impacts to surface waters. Use of these protection measures would reduce the potential for reportable quantities of stormwater discharge or surface water runoff; however, minor impacts to waterways may occur.</p> <p>Groundwater: No impacts are anticipated to groundwater resources as proposed project activities would not require any well installation or drilling.</p>
NI	Wetlands/Riparian Zones	<p>Based on a review of the U.S. Fish and Wildlife Service National Wetland Inventory Mapper, proposed project activities or components would not cross or impact any identified wetland locations.</p>

Determination	Resource	Rationale for Determination
		Multiple ephemeral channels with associated 100-foot riparian buffers are located in the Project Area. The proposed ENAR intersects two channels with protective riparian buffers; however, based on a review of the U.S. Fish and Wildlife Service National Wetland Inventory Mapper, no riparian areas are present within these channels. Additionally, most locations were dry and did not contain evidence of riparian vegetation communities during project on-site reviews, and therefore no adverse impacts are anticipated from development of the ENAR. Proposed project pipelines would be buried, and any impacted riparian areas would be mitigated as detailed in the SSRPs, therefore, adverse impacts are not anticipated for this resource from proposed pipeline installation. Both proposed compressor sites are located outside of established 100-foot riparian buffers, and would not adversely impact this resource.
NP	Wild and Scenic Rivers	None present per review of the 2008 Rawlins RMP and ROD.
PI	Wild Horses	The Project Area is located in the Adobe Town HMA. Proposed project activities may affect the distribution of wild horses in the HMA during tentatively scheduled horse gather activities planned for mid to late 2013.  Disturbances to existing horse populations would be of short duration, occurring primarily during project construction and pipeline installation. Long duration impacts would include increased traffic and human presence. Increased human presence and activity may affect horse distribution for the duration of the project. The proposed project would also impact forage availability for horse consumption. Proposed project activities may have adverse impacts on long-term population trends for wild horses in the Adobe Town HMA.
NI	Wilderness/WSA	The Project Area is located approximately 0.2 miles east of the Adobe Town WSA at its nearest point. All proposed project activities would occur below the Willow Creek Rim, outside of the Adobe Town WSA boundary and would not adversely impact this resource.
NP	Woodland/Forestry	Woodlands and forests are not present per review of GIS data for the Project Area.

- AUM Animal Unit Month
- BLM Bureau of Land Management
- CFR Code of Federal Regulations
- DEIS Draft Environmental Impact Statement
- DFPA Desolation Flats Project Area
- ENAR Endurance Northern Access Road
- FEIS Final Environmental Impact Statement
- GHG Greenhouse Gas
- GIS Geographic Information System

1 **FINAL REVIEW:**

Reviewer Title	Signature	Date	Comments
NEPA / Environmental Coordinator			
BLM Authorized Officer (AO)			

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*Endurance/Barricade Gas Infrastructure Project*

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## ***Appendix B***

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Terms and Conditions of Approval

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**APPENDIX B. TERMS AND CONDITIONS OF APPROVAL**

This appendix includes the BLM's terms and conditions associated with proposed surface disturbances and reclamation methodologies for the Endurance/Barricade Gas Infrastructure Project Environmental Assessment. The following terms and conditions are for the BLM issued grants associated with this project including: 1.) WYW-170826 – Endurance Northern Access Road, 2.) WYW-181118 – Endurance Northern 16-inch Pipeline, 3.) WYW-170827 – Endurance Northern 20-inch Pipeline, 4.) WYW-181267 – Barricade High Pressure Pipeline Loop, 5.) WYW181470 – Barricade Pressure Reducing Pipeline, 6.) WYW-181513 – Barricade East Compressor Site, 7.) WYW-181512 – Barricade West Compressor Site, 8.) WYW-182142 – Compressor Site Access Roads.

**Endurance Northern Access Road (WYW-170826)**

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800.
- b. Upon grant termination by the BLM AO, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the BLM AO.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the BLM AO at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a ROW or permit granted herein may be reviewed at any time deemed necessary by the BLM AO.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A (Plan of Development) and B (Map) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this ROW grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall comply with all federal, state, and local regulations whether or not specifically mentioned within this grant.
- h. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the BLM AO. A copy of the complete ROW grant, including all stipulations and approved plan of development, shall be made available on the ROW area during construction, operation, and termination to the BLM AO. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- i. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control

monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM AO and the respective installing authority if known. Where General Land Office or BLM ROW monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM AO. If the BLM cadastral surveyors or other federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

- j. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the BLM AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM AO. An evaluation of the discovery will be made by the BLM AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM AO after consulting with the holder.
- k. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere, however, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting. (modified from 43CFR3809.420(b)(8), and BLM IM 2009-011).
- l. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.
- m. To further reduce the spread of invasive and noxious weeds following construction activities, inspections for weeds will be conducted each year along with revegetation monitoring during the first five years following construction. Thereafter, weed surveys would be conducted at least once every three years at appropriate times as directed by the BLM AO, for the life of the project. Reports of these surveys will be submitted to the BLM AO within 30 days of the surveys.
- n. The holder of this ROW grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- o. The holder shall contact the BLM AO at least 48 hours (two days) prior to the anticipated start of construction and/or any surface disturbing activities. This can be done by logging into:

[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html). Then click on **ROW Construction Notice** and fill in the form and submit it. Or, you may call the BLM AO. The BLM AO may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the ROW. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development.

- p. The holder shall have, on-site, a qualified individual (not the dirt contractor) to serve as Compliance Coordinator. This individual will be responsible for assuring that all requirements of the Plan of Development and appropriate Additional Terms and Conditions are applied. **The holder must provide the name of the Compliance Coordinator to the BLM AO prior to any surface disturbance.**
- q. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of **four (4)** inches deep, the soil shall be deemed too wet to adequately support construction equipment.
- r. The holder shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the ROW.
- s. The holder shall inform the BLM AO within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR 195.
- t. The holder(s) shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM AO concurrent with the filing of the reports to the involved federal agency or state government.
- u. The holder of ROW No. WYW-170826 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holder's activity on the ROW). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- v. In the event that the public land underlying the ROW (ROW) encompassed in this grant, or a portion thereof, is conveyed out of federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under federal laws, statutes, and regulations, including the regulations at 43 CFR 2800, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for

BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

- w. A litter policing program shall be implemented by the holder, and approved of in writing by the BLM AO, which covers all roads and sites associated with the ROW.
- x. For the purpose of determining joint maintenance responsibilities, the holder shall make road use plans known to all other authorized users of the road. Holder shall provide the BLM AO, within 30 days from the date of the grant, with the names and addresses of all parties notified, dates of notification, and method of notification. Failure of the holder to share proportionate maintenance costs on the common use access road in dollars, equipment, materials, or manpower with other authorized users may be adequate grounds to terminate the ROW grant. The determination as to whether this has occurred and the decision to terminate shall rest with the BLM AO. Upon request, the BLM AO shall be provided with copies of any maintenance agreement entered into. Authorized users are as follows:  
  
NONE
- y. Prior to termination of the ROW, the holder shall contact the BLM AO to arrange a pre-termination conference. This conference will be held to review the existing reclamation plan and termination provisions of the grant or agree to a new updated reclamation plan.

#### **Additional Terms and Conditions:**

##### ***Wildlife Resources:***

- a. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited from February 1 to September 15.

**Please note that the above raptor stipulation(s) may differ from past raptor stipulations as a result of the signing of the Record of Decision for the new Rawlins RMP on December 24, 2008.**

Surface disturbing and disruptive activities within pronghorn crucial winter range are prohibited during the period of November 15 to April 30.

Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit within identified Greater Sage-Grouse nesting and early brood rearing habitat from March 1 to July 15.

Surface disturbing and disruptive activities located in potential mountain plover habitat are prohibited during the reproductive period of April 10 to July 10 for the protection of nesting plover. Additional protection measures may be applied if this area is later determined to be within occupied habitat.

Any exceptions to this/these requirements must have prior written approval from the BLM AO.

**\*Please be advised that due to limits on the available time of qualified personnel, the unpredictability of wildlife, and future weather conditions, requests for exceptions to impending**

**wildlife stipulations will only be considered in the event of extraordinary and unavoidable occurrences over which the company has little or no control. Additionally, construction of the pipeline needs to be started in a time frame which would allow for reasonably normal completion prior to the beginning date of wildlife protection stipulations.**

- b. If any dead or injured threatened, endangered, proposed, or candidate animal species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM RFO (307-328-4200) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM RFO shall also be notified within 24 hours.
- c. The holder and holder's sub-contracted personnel shall not intentionally harm or harass wild horses, other wildlife, or domestic livestock.

**Cultural Resources:**

- a. All surface disturbances shall be monitored by a BLM permitted Archaeologist. An open trench inspection shall be completed by a BLM permitted archaeologist for the entire length of the pipeline.
- b. Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working in his behalf, shall be immediately reported to the BLM AO. Operations shall be suspended in the area of such discovery until written authorization to proceed is issued by the District Manager. An evaluation will be conducted by the BLM to determine appropriate actions to prevent the loss of significant cultural values and the BLM will be responsible for the cost of evaluations and mitigation unless otherwise stated in special stipulations.

**Recreation:**

- a. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs and speed limits, conducting operator safety training, and requiring project vehicles to adhere to low speed limits, refrain from littering and drive only on approved project roads. Operators will inform their employees, contractors, and subcontractors that long term camping (greater than 14 days) on federal lands or at federal recreation-sites is prohibited. Operators will direct their employees, contractors, and subcontractors to abide by state and federal laws and regulations regarding hunting and artifact collecting.

**Paleontology:**

- a. The Potential Fossil Yield Classification (PFYC) system has identified the area as having a moderate to high potential to yield scientifically significant paleontological resources. A pre-construction survey will be performed by a BLM permitted consulting paleontologist. Submission of reports will be done directly to the BLM by the paleontologist. A recommendation for mitigation including no further mitigation, on-site monitoring, spot checking or rerouting will be made in the report.

Mitigation actions include proper preparation and curation of collected paleontological resources and filing of applicable consultant reports. On-site monitoring of localities will be performed by qualified paleontologists as approved under a BLM Paleontological Resources Use Permit.

- b. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a

result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere. However, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting.

**Wild Horses and Burros:**

- a. Operator should avoid photo point and transect monitoring stations at the following locations:
  - Willow Creek # 2 – located at the section marker of sections 4, 5, 8 and 9;
  - Secondary Photo point located in the SW¼NE¼ of Section 17 in T. 15 N, R 95 W.
- b. Project has the potential to impact water flows into reservoirs. If water flow into reservoirs is impacted, additional mitigation may be needed such as culverts or other measures.

**Construction:**

- a. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
- b. The holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.
- c. The holder shall survey and clearly mark the centerline and/or exterior limits of the ROW.
- d. Construction-sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
- e. Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in accordance with, the relevant pipeline companies' policy.
- f. Construction-related traffic shall be restricted to routes approved by the BLM AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the BLM AO. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the BLM AO.
- g. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the BLM AO.
- h. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards and/or specifications as determined by the BLM AO.
- i. When construction activity in connection with the ROW breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the BLM AO and fenced by the holder as per

instruction of the BLM AO.

- j. Accumulated snow present on the ground at the outset of construction, maintenance, or reclamation activities shall be removed before the soil is disturbed and piled downhill from the disturbed area. Equipment used for any non-construction snow removal operations will be equipped with six-inch shoes to ensure blades do not remove topsoil or vegetation and written approval must be obtained before snow removal related to a federal action **but** outside of designated areas is undertaken.
- k. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.
- l. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the BLM AO in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the BLM AO in advance of use.
- m. Remove, and clearly segregate from all other spoil, all available topsoil from constructed locations, including areas of cut and fill, and stockpile at the site for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.).
- n. Drainage and runoff shall be diverted away from all new construction. All drainage structures shall simulate topographic contour lines, have a grade no greater than .5 - 1 percent, and shall release water onto undisturbed ground without causing additional and/or accelerated erosion.
- o. In accordance with the RMP, construction and other surface disturbing activities will be prohibited with frozen material unless the holder receives an approved exception. When there is a potential for frozen material, the holder is required to request in writing an exception to this limitation. This exception may be approved in writing by the BLM AO.

**Operations:**

- a. The holder shall meet federal, state, and local emission standards for air quality.
- b. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- c. Holder shall maintain the ROW in a safe, usable condition, as directed by the BLM AO.
- d. The holder must be prepared to provide BLM copies of applications for and approved federal, state, and local operating permits.
- e. If snow removal from the road is undertaken, equipment used for snow removal operations shall be equipped with shoes to keep the blade six inches off the road surface. Holder shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure that equipment blades do not destroy vegetation.
- f. The holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the BLM AO to protect the public, wildlife, livestock or facilities constructed within the ROW.

**Reclamation:**

- a. The annual monitoring report will be submitted by March 1 of each year. This report shall include reclamation and restoration efforts, including seeding/re-vegetation, invasive plant treatment/control, and soil stabilization and erosion prevention. The report shall be in accordance and consistent with the BLM and/or RFO Reclamation Policy, RMP (ROD) and Appendix 36, and the Desolation Flats EIS. The yearly operator report would include surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, will be available at:

[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)

or by contacting the RFO, Minerals and Lands, Supervisory Realty Specialist at 307-328-4200 for further information.

- b. Reclamation earthwork for interim and/or final reclamation would be completed within six months of project completion (weather permitting), and would be consistent with the approved reclamation plan.

Reclamation earthwork may include:

- a) Backfilling pits.
  - b) Re-contouring and stabilizing the well site, access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour, shape, function, and configuration that existed before construction (any compacted backfilling activities would ensure proper spoils placement, settling, and stabilization.
  - c) Surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch centers to reduce compaction.
  - d) Final grading and replacement of topsoil.
  - e) Surface-roughening and other techniques such as snow fencing to increase soil moisture retention and reduce compaction. Surface soil material can be pitted or roughened (not exceeding the applied topsoil depth) such that the entire reclamation area would be uniformly covered with depressions constructed perpendicular to the natural flow of water and/or prevailing wind.
- c. Stockpiled soils would be distributed on disturbed areas and the production facilities would be as small as possible to allow for safe and prudent operations.
  - d. All practicable measures would be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There would be no evidence of mass-wasting, head-cutting, large rills, gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the holder is required to use certified weed-free hay, straw, and mulch on the BLM lands.
  - e. The holder shall restore drainages, to the greatest extent possible, to the original bank

configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the BLM AO.

- f. The holder shall construct waterbars on all disturbed areas. Waterbars are to be constructed to:  
(1) simulate the imaginary contour lines of the slope (**ideally with a grade of one or two percent**);  
(2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
- g. Re-vegetation would consist of species occurring in the surrounding natural vegetation and/or included in the approved seed mix, as deemed desirable by the BLM or private surface owner in review and approval of the reclamation plan. Inter-seeding, secondary seeding, or staggered seeding may be required to accomplish re-vegetation objectives. The seed mixture(s) would be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There would be no primary or secondary noxious weed seed in the seed mixture. Seed would be tested and the viability testing of seed would be done in accordance with State law(s) and within nine months prior to purchase. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with State law(s) and available for inspection by the BLM AO. Since seeds are of different sizes and require different planting depths, appropriate equipment would be used to ensure the seed mixture is correctly and uniformly planted over the disturbed area. Seed would be broadcast if drilling is not possible. The seeding would be repeated until a satisfactory stand is established as determined by the BLM AO.
- h. Any subsequent re-disturbance of reclamation would be reclaimed within six months by the same means, as described in the approved reclamation plan.
- i. Prior to commencing final reclamation activities, the holder shall notify the BLM. A joint inspection of the disturbed areas may be required and attended by the BLM and the holder (or holder's representative), the primary purpose of which is to review and agree to the existing (or a new) abandonment and/or final reclamation plan. All reclamation should be accomplished as soon as possible after the disturbance occurs, with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (three to five years) (RMP ROD Appendix 13-8).
- j. Reclamation plans and procedures, including those for seeding/re-vegetation and weed control, shall be modified and revised as necessary in order to achieve desired results and requirements.
- k. Evaluation of growth and success would be conducted as per RMP ROD (Appendix 36). The site would also comply with additional management needs, including control of weed infestations. Success criteria as defined by the RMP is: criteria based on pre-disturbance surveys or surveys of adjacent undisturbed natural ground cover and species composition or 80 percent of Pre-disturbance ground cover, 90 percent dominant species, no noxious weeds, and erosion features equal to or less than the surrounding area.

Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention would be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting would be in accordance and consistent with the Wyoming State Reclamation policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) would be modified and revised as necessary and required to achieve desired results and requirements.

The operator and their designated qualified inspector or licensed professional engineer would

conduct a pre-construction meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-reclamation meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

In the areas where the project crosses soils that are classified as having a texture of Sand, Loamy Sand, or Sandy Loam, the operator shall have additional Best Management Practices installed to stabilize the soil and decrease the wind and water erosion on the project.

For each project, a reference site shall be set up for each major vegetation community that the project crosses. At each reference site the vegetation basal cover data, species frequency, erosion data shall be collected. This reference site shall be selected by the operator and the BLM AO.

**Access Roads:**

- a. Road will be built in association with the final BLM approved road design.
- b. Operator will conduct a traffic study to validate the average seasonal daily counts through traffic counters. Traffic counters are to be placed on the road for a minimum of two years. Based on circumstances and at the discretion of the BLM AO, term may be extended or decreased.
- c. The holder shall furnish and install culverts of the gauge, materials, diameter(s), and length(s) indicated and approved by the BLM AO. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned to minimize erosion. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts.
- d. Surfacing shall be designed to accommodate anticipated loading and traffic volumes and shall provide for future maintenance.
- e. All vehicles shall use only authorized travel routes and shall not use any other access route, such as two-track roads, trails, and pipeline ROWs to the drill/well pad and any ancillary facilities.
- f. Two-track roads shall not be cut-off as a direct result of construction, maintenance, or reclamation of the well access road or associated well facilities.
- g. All access roads and drainage control structures, whether existing or newly-constructed, shall be both constructed to resource road standards and regularly maintained in a safe and usable condition as outlined in the BLM Manual, Section 9113. A regular maintenance program may include, but is not limited to: blading, ditching, culvert installation, dust control, and gravel surfacing or other activities as specified by the BLM AO.
- h. Prior to construction, road(s) shall be surveyed and staked with construction control stakes set continuously along the centerline at maximum 100-foot intervals (less where needed to be inter-visible) and at all tangent and curve control points, fence or utility crossings, and culverts. In addition to centerline stakes, slope stakes shall be placed at the top of the cut and the bottom of

the fill for those portions of the road that are engineered.

- i. Before proposed road construction activities begin, the topsoil must be bladed to the side of the road and stockpiled. The topsoil stockpile shall be contoured so as to prevent water ponding or flow concentration. Once the barrow ditch and the cut slopes are constructed, cleared vegetative material and topsoil that is windrowed shall be spread back onto the cut/fill slopes of the road, removing any windrows or berms remaining at the edge of the road.
- j. The minimum travel-way width of the immediate access road will be 14 feet with turnouts at least 10 feet in width. No structure will be allowed to narrow the road top. The inside slope will be 4:1. The bottom of the ditch will be a smooth V with no vertical cut in the bottom. The outside slope will be 2:1 or shallower. After the road is crowned and ditched with a .03 - .05 ft/ft crown the topsoil and windrowed vegetative material shall be pulled back down on the cut slope so there is no berm left at the top of the cut slope. Turnouts will be spaced at a maximum distance of 1000 feet and will be intervisible. If the access road crosses a floodplain, the ditch shall be flat-bottomed so as to provide material to raise the road.
- k. If soils along the access road route are dry during road construction, use, and/or maintenance, fresh water shall be applied to the road surface to facilitate soil compaction and minimize soil loss as a result of wind erosion.
- l. Construction and surfacing of the new access road shall be complete prior to moving drilling equipment onto the well pad and the presence of heavy vehicular traffic. Compact the top foot of sub-grade to a 95percent maximum density as determined by AASHTO T-99. Surface with an appropriate grade of gravel to a minimum depth of four (compacted) inches.
- m. As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway by water baring, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.
- n. Culverts shall have a minimum of 1two inches of fill or one-half the pipe diameter, whichever is greater, placed on top of the culvert, and shall be of length sufficient to allow at least 24 inches of culvert to extend from the fill slope face. The inlet and outlet shall be set on grade. No rocks shall be used in the bed material and no rocks greater than two inches in diameter will be immediately adjacent to the culvert. The entire length of pipe shall be bedded on native material before backfilling, which shall be completed using unfrozen material and rocks no larger than two inches in diameter; compact the backfill evenly in six-inch lifts on both sides of the culvert. A permanent marker shall be installed at both ends of the culvert to help prevent traffic from damaging the culvert. Additional culverts will be placed in the new access road as the need arises or as directed by BLM AO.
- o. Wing-ditches shall be staked and constructed at a slope of .5 to 1.0 percent down slope unless otherwise approved by the BLM AO. In no case shall wing-ditches discharge adjacent to a channel bank.
- p. All drainage ditches and culverts shall be kept clear and free-flowing, and shall also be maintained in accordance with the original construction standards.

**Endurance Northern Pipeline # 1 (20 inches) and #2 (1six-inch) (WYW-170827 and WYW-181188)**

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.
- b. Upon grant termination by the BLM AO, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the BLM AO.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the BLM AO at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a ROW or permit granted herein may be reviewed at any time deemed necessary by the BLM AO.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A (Plan of Development) and B (Map) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this ROW grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall comply with all federal, state, and local regulations whether or not specifically mentioned within this grant.
- h. No surface disturbing activities shall take place on the subject ROW until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any ROW facilities.
- i. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the BLM AO. A copy of the complete ROW grant, including all stipulations and approved plan of development, shall be made available on the ROW area during construction, operation, and termination to the BLM AO. Noncompliance with the above

will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

- j. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM AO and the respective installing authority if known. Where General Land Office or BLM ROW monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed

monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM AO. If the BLM cadastral surveyors or other federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

- k. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the BLM AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM AO. An evaluation of the discovery will be made by the BLM AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM AO after consulting with the holder.
- l. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere, however, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting. (modified from 43CFR3809.420(b)(8), and BLM IM 2009-011).
- m. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.
- n. To further reduce the spread of invasive and noxious weeds following construction activities, inspections for weeds will be conducted each year along with revegetation monitoring during the first five years following construction. Thereafter, weed surveys would be conducted at least once every three years at appropriate times as directed by the BLM AO, for the life of the project. Reports of these surveys will be submitted to the BLM AO within 30 days of the surveys.
- o. The holder of this ROW grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- p. The holder shall contact the BLM AO at least 48 hours (two days) prior to the anticipated start of construction and/or any surface disturbing activities. This can be done by logging into: [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html). Then click on **ROW Construction Notice** and fill in the form and submit it. Or, you may call the BLM AO. The BLM AO may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the ROW. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with

- construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development.
- q. The holder shall have, on-site, a qualified individual (not the dirt contractor) to serve as Compliance Coordinator. This individual will be responsible for assuring that all requirements of the Plan of Development and appropriate Additional Terms and Conditions are applied. **The holder must provide the name of the Compliance Coordinator to the BLM AO prior to any surface disturbance.**
  - r. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of **four (4)** inches deep, the soil shall be deemed too wet to adequately support construction equipment.
  - s. Within 90 days of completion, the holder will submit to the BLM AO, as-built drawings and a certification of construction verifying that the facility has been constructed (and tested) in accordance with the design, plans, specifications, and applicable laws and regulations.
  - t. The holder shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the ROW.
  - u. The holder shall inform the BLM AO within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR 195.
  - v. The holder(s) shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et seq.*) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM AO concurrent with the filing of the reports to the involved federal agency or state government.
  - w. The holder of ROW No. **WYW-170826** agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et seq.* or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 *et seq.*) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holder's activity on the ROW). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
  - x. In the event that the public land underlying the ROW (ROW) encompassed in this grant, or a portion thereof, is conveyed out of federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under federal laws, statutes, and regulations, including the regulations at 43 CFR 2880, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of

conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable state and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

- y. A litter policing program shall be implemented by the holder, and approved of in writing by the BLM AO, which covers all roads and sites associated with the ROW.
- z. Prior to termination of the ROW, the holder shall contact the BLM AO to arrange a pre-termination conference. This conference will be held to review the existing reclamation plan and termination provisions of the grant or agree to a new updated reclamation plan.

**Additional Terms and Conditions:**

**Wildlife Resources:**

- a. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited from February 1 to September 15.

**Please note that the above raptor stipulation(s) may differ from past raptor stipulations as a result of the signing of the Record of Decision for the new Rawlins RMP on December 24, 2008.**

Surface disturbing and disruptive activities within pronghorn crucial winter range are prohibited during the period of November 15 to April 30.

Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit within identified Greater Sage-Grouse nesting and early brood rearing habitat from March 1 to July 15.

Disruptive activities are prohibited between 6:00 pm to 9:00 am from March 1 to May 20 on or within a ¼ mile of the perimeter of an occupied Greater Sage-Grouse lek.

Surface disturbing and disruptive activities located in potential mountain plover habitat are prohibited during the reproductive period of April 10 to July 10 for the protection of nesting plover. Additional protection measures may be applied if this area is later determined to be within occupied habitat.

Any exceptions to these requirements must have prior written approval from the BLM AO.

**\*Please be advised that due to limits on the available time of qualified personnel, the unpredictability of wildlife, and future weather conditions, requests for exceptions to impending wildlife stipulations will only be considered in the event of extraordinary and unavoidable occurrences over which the company has little or no control. Additionally, construction of the pipeline needs to be started in a time frame which would allow for reasonably normal completion prior to the beginning date of wildlife protection stipulations.**

- b. In order to reduce potential impacts on wildlife from pipeline construction, earthen ditch plugs, with ramps on either side should be placed at ¼ mile intervals along the trench in or adjacent to crucial winter range, at well-defined livestock and wildlife trails intersected by the trench. These plugs would provide a means for wildlife to escape if individuals fall into the trench and also would provide a bridge for other wildlife to cross an open trench. The pipeline should also leave breaks in

the strung and welded pipeline, topsoil, and spoil piles at locations that correspond to the earthen trench plugs to allow movement of wildlife and livestock across the construction ROW.

- c. If any dead or injured threatened, endangered, proposed, or candidate animal species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM RFO (307-328-4200) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM RFO shall also be notified within 24 hours.
- d. The holder and holder's sub-contracted personnel shall not intentionally harm or harass wild horses, other wildlife, or domestic livestock.

**Cultural Resources:**

- a. All surface disturbances, including the pipeline trench, shall be monitored by a BLM permitted Archaeologist. An open trench inspection shall be completed by a BLM permitted archaeologist for the entire length of the pipeline.
- b. Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working in his behalf, shall be immediately reported to the District Manager. Operations shall be suspended in the area of such discovery until written authorization to proceed is issued by the District Manager. An evaluation will be conducted by the BLM to determine appropriate actions to prevent the loss of significant cultural values and the BLM will be responsible for the cost of evaluations and mitigation unless otherwise stated in special stipulations.

**Recreation:**

- a. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs and speed limits, conducting operator safety training, and requiring project vehicles to adhere to low speed limits, refrain from littering and drive only on approved project roads. Operators will inform their employees, contractors, and subcontractors that long term camping (greater than 14 days) on federal lands or at federal recreation-sites is prohibited. Operators will direct their employees, contractors, and subcontractors to abide by state and federal laws and regulations regarding hunting and artifact collecting.
- b. Utilize existing topography to screen roads, pipeline corridors, drill rigs, well heads and production facilities from view. Facilities shall not be located at or near ridgelines. Above ground facilities not requiring safety coloration should be painted with non-reflective Covert Green (5Y 4/2) or other standard environmental color approved by VRM specialist.

**Paleontology:**

- a. The Potential Fossil Yield Classification (PFYC) system has identified the area as having a moderate to high potential to yield scientifically significant paleontological resources. A pre-construction survey will be performed by a BLM permitted consulting paleontologist. Submission of reports will be done directly to the BLM by the paleontologist. A recommendation for mitigation including no further mitigation, on-site monitoring, spot checking or rerouting will be made in the report.

Mitigation actions include proper preparation and curation of collected paleontological resources and filing of applicable consultant reports. On-site monitoring of localities will be performed by

qualified paleontologists as approved under a BLM Paleontological Resources Use Permit.

- b. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere. However, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting.

**Wild Horses and Burros:**

- a. Operator should avoid photo point and transect monitoring stations at the following locations:
  - Willow Creek # 2 – located at the section marker of sections 4, 5, 8 and 9
- b. Project has the potential to impact water flows into nearby reservoirs., including Courthouse Reservoir (RI# 920392- - NWSW of Section 16, T 15 N, R 95 W), Boundary Line Reservoir (RI# 920466 – SWNW of Section 20, T 15 N, R 95 W), and an unnamed reservoir which may be located in SWSE of Section 9, T 15 N, R 95 W). If water flow into reservoirs is impacted, additional mitigation may be needed such as culverts or other measures.

**Hydrology:**

- a. All drainages must be recountoured to pre-disturbance conditions. Runoff potential is high and all BMPs must be implemented correctly, maintained and replaced if not longer functional.
- b. Detailed BMPs must be submitted to BLM Hydrologist prior to construction.

**Construction:**

- a. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
- b. The holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.
- c. The holder shall survey and clearly mark the centerline and/or exterior limits of the ROW.
- d. Construction-sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
- e. Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in accordance with, the relevant pipeline companies' policy.
- f. Construction-related traffic shall be restricted to routes approved by the BLM AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by

- the BLM AO. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the BLM AO.
- g. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the BLM AO.
  - h. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards and/or specifications as determined by the BLM AO.
  - i. When construction activity in connection with the ROW breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the BLM AO and fenced by the holder as per instruction of the BLM AO.
  - j. Accumulated snow present on the ground at the outset of construction, maintenance, or reclamation activities shall be removed before the soil is disturbed and piled downhill from the disturbed area. Equipment used for any non-construction snow removal operations will be equipped with six-inch shoes to ensure blades do not remove topsoil or vegetation and written approval must be obtained before snow removal related to a federal action **but** outside of designated areas is undertaken.
  - k. Prior to fill construction, the existing surface shall be sloped to avoid sharp banks and allow equipment operations. No fills shall be made with frozen or water saturated soils. Construction equipment shall be routed evenly over the entire width of the fill to obtain a thorough compaction.
  - l. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.
  - m. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the BLM AO in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the BLM AO in advance of use.
  - n. Remove, and clearly segregate from all other spoil, all available topsoil from constructed locations, including areas of cut and fill, and stockpile at the site for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.).
  - o. Drainage and runoff shall be diverted away from all new construction. All drainage structures shall simulate topographic contour lines, have a grade no greater than .5 - 1 percent, and shall release water onto undisturbed ground without causing additional and/or accelerated erosion.
  - p. In accordance with the RMP, construction and other surface disturbing activities will be prohibited with frozen material unless the holder receives an approved exception. When there is a potential for frozen material, the holder is required to request in writing an exception to this limitation. This exception may be approved in writing by the BLM AO.

**Operations:**

- a. Except ROWs expressly authorizing a road after construction of the facility is completed, the holder shall not use the ROW as a road for purposes other than routine maintenance as determined

necessary by the BLM AO in consultation with the holder.

- b. The holder shall meet federal, state, and local emission standards for air quality.
- c. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- d. Holder shall maintain the ROW in a safe, usable condition, as directed by the BLM AO.
- e. The holder must be prepared to provide BLM copies of applications for and approved federal, state, and local operating permits.
- f. The holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the BLM AO to protect the public, wildlife, livestock or facilities constructed within the ROW.

**Reclamation:**

- a. The annual monitoring report will be submitted by March 1 of each year. This report shall include reclamation and restoration efforts, including seeding/re-vegetation, invasive plant treatment/control, and soil stabilization and erosion prevention. The report shall be in accordance and consistent with the BLM and/or RFO Reclamation Policy, RMP (ROD) and Appendix 36, and the Desolation Flats EIS. The yearly operator report would include surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, will be available at:

[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)

or by contacting the RFO, Minerals and Lands, Supervisory Realty Specialist at 307-328-4200 for further information.

- b. Reclamation earthwork for interim and/or final reclamation would be completed within six months of project completion (weather permitting), and would be consistent with the approved reclamation plan.

Reclamation earthwork may include:

- a) Backfilling pits.
- b) Re-contouring and stabilizing the access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour, shape, function, and configuration that existed before construction (any compacted backfilling activities would ensure proper spoils placement, settling, and stabilization.
- c) Surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch centers to reduce compaction.
- d) Final grading and replacement of topsoil.
- e) Surface-roughening and other techniques such as snow fencing to increase soil moisture retention and reduce compaction. Surface soil material can be pitted or roughened (not exceeding the applied topsoil depth) such that the entire reclamation area would be

uniformly covered with depressions constructed perpendicular to the natural flow of water and/or prevailing wind.

- c. Stockpiled soils would be distributed on disturbed areas and the production facilities would be as small as possible to allow for safe and prudent operations.
- d. All practicable measures would be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There would be no evidence of mass-wasting, head-cutting, large rills, gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the holder is required to use certified weed-free hay, straw, and mulch on the BLM lands.
- e. The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the BLM AO.
- f. The holder shall construct waterbars on all disturbed areas. Waterbars are to be constructed to:  
(1) simulate the imaginary contour lines of the slope (**ideally with a grade of one or two percent**);  
(2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
- g. Re-vegetation would consist of species occurring in the surrounding natural vegetation and/or included in the approved seed mix, as deemed desirable by the BLM or private surface owner in review and approval of the reclamation plan. Inter-seeding, secondary seeding, or staggered seeding may be required to accomplish re-vegetation objectives. The seed mixture(s) would be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There would be no primary or secondary noxious weed seed in the seed mixture. Seed would be tested and the viability testing of seed would be done in accordance with state law(s) and within nine months prior to purchase. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the BLM AO. Since seeds are of different sizes and require different planting depths, appropriate equipment would be used to ensure the seed mixture is correctly and uniformly planted over the disturbed area. Seed would be broadcast if drilling is not possible. The seeding would be repeated until a satisfactory stand is established as determined by the BLM AO.
- h. Any subsequent re-disturbance of reclamation would be reclaimed within six months by the same means, as described in the approved reclamation plan.
- i. Prior to commencing final reclamation activities, the holder shall notify the BLM. A joint inspection of the disturbed areas may be required and attended by the BLM and the holder (or holder's representative), the primary purpose of which is to review and agree to the existing (or a new) abandonment and/or final reclamation plan. All reclamation should be accomplished as soon as possible after the disturbance occurs, with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (three to five years) (RMP ROD Appendix 13-8).
- j. Reclamation plans and procedures, including those for seeding/re-vegetation and weed control, shall be modified and revised as necessary in order to achieve desired results and requirements.
- k. Evaluation of growth and success would be conducted as per RMP ROD (Appendix 36). The site would also comply with additional management needs, including control of weed infestations. Success criteria as defined by the RMP is: criteria based on pre-disturbance surveys or surveys of

adjacent undisturbed natural ground cover and species composition or 80 percent of Pre-disturbance ground cover, 90 percent dominant species, no noxious weeds, and erosion features equal to or less than the surrounding area.

Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention would be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting would be in accordance and consistent with the Wyoming State Reclamation Policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) would be modified and revised as necessary and required to achieve desired results and requirements.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-construction meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-reclamation meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

In the areas where the project crosses soils that are classified as having a texture of Sand, Loamy Sand, or Sandy Loam, the operator shall have additional Best Management Practices installed to stabilize the soil and decrease the wind and water erosion on the project.

For each project, a reference site shall be set up for each major vegetation community that the project crosses. At each reference site the vegetation basal cover data, species frequency, erosion data shall be collected. This reference site shall be selected by the operator and the BLM AO.

**Pipelines:**

- a. No surface disturbing activities shall take place on the subject ROW until the associated ROW is approved. The holder will adhere to special stipulations in the Plan of Development for the approved ROW, relevant to any ROW facilities.
- b. Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, state or federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipater at the outlets, and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be removed from the site upon completion of hydrostatic testing.
- c. The holder shall design and construct adequate water-control structures in each drainage crossing to prevent excessive erosion along the pipeline and protect the pipeline from the natural erosion process within the drainage.
- d. If during any phase of the construction, operation, or termination of the pipeline or related facilities any oil or other pollutant should be discharged from the pipeline system, or from containers or

vehicles impacting federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of holder to control, cleanup, or dispose of such discharge on or affecting federal lands, or to repair all damages to federal lands resulting there from, the BLM AO may take such measures deemed necessary to control, clean up the discharge, and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the BLM AO shall not relieve the holder of any liability or responsibility.

- e. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued there under, or applicable laws of the State of Wyoming and regulations issued there under. Holder shall give immediate notice of any such discharge to the BLM AO and such other federal and state officials as are required by law to be given such notice.
- f. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this pipeline is **Covert Green (5Y 4/2)**.
- g. All cathodic protection facilities shall have approval from the Department of Environmental Quality (DEQ) UIC Division and have an approved Class V, Type 5F1 permit.

#### **Barricade East and West Compressor Sites (WYW-181513 and WYW-181512)**

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.
- b. Upon grant termination by the BLM AO, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the BLM AO.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the BLM AO at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a ROW or permit granted herein may be reviewed at any time deemed necessary by the BLM AO.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A (Plan of Development) and B (Map) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this ROW grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall comply with all federal, state, and local regulations whether or not specifically mentioned within this grant.
- h. No surface disturbing activities shall take place on the subject ROW until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the

approved APD, relevant to any ROW facilities.

- i. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the BLM AO. A copy of the complete ROW grant, including all stipulations and approved plan of development, shall be made available on the ROW area during construction, operation, and termination to the BLM AO. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- j. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM AO and the respective installing authority if known. Where General Land Office or BLM ROW monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM AO. If the BLM cadastral surveyors or other federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.
- k. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the BLM AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM AO. An evaluation of the discovery will be made by the BLM AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM AO after consulting with the holder.
- l. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere, however, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting. (modified from 43CFR3809.420(b)(8), and BLM IM 2009-011).
- m. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily

Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.

- n. To further reduce the spread of invasive and noxious weeds following construction activities, inspections for weeds will be conducted each year along with revegetation monitoring during the first five years following construction. Thereafter, weed surveys would be conducted at least once every three years at appropriate times as directed by the BLM AO, for the life of the project. Reports of these surveys will be submitted to the BLM AO within 30 days of the surveys.
- o. The holder of this ROW grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d *et seq.*) and the regulations of the Secretary of the Interior issued pursuant thereto.
- p. The holder shall contact the BLM AO at least 48 hours (two days) prior to the anticipated start of construction and/or any surface disturbing activities. This can be done by logging into: [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html). Then click on **ROW Construction Notice** and fill in the form and submit it. Or, you may call the BLM AO. The BLM AO may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the ROW. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development.
- q. The holder shall have, on-site, a qualified individual (not the dirt contractor) to serve as Compliance Coordinator. This individual will be responsible for assuring that all requirements of the Plan of Development and appropriate Additional Terms and Conditions are applied. **The holder must provide the name of the Compliance Coordinator to the BLM AO prior to any surface disturbance.**
- r. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of **four (4)** inches deep, the soil shall be deemed too wet to adequately support construction equipment.
- s. Within 90 days of completion, the holder will submit to the BLM AO, as-built drawings and a certification of construction verifying that the facility has been constructed (and tested) in accordance with the design, plans, specifications, and applicable laws and regulations.
- t. The holder shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the ROW.
- u. The holder shall inform the BLM AO within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR 195.
- v. The holder(s) shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et seq.*) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or

requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM AO concurrent with the filing of the reports to the involved federal agency or state government.

- w. The holder of ROW No. WYW-170826 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holder's activity on the ROW). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- x. In the event that the public land underlying the ROW (ROW) encompassed in this grant, or a portion thereof, is conveyed out of federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR 2880, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
- y. A litter policing program shall be implemented by the holder, and approved of in writing by the BLM AO, which covers all roads and sites associated with the ROW.
- z. Prior to termination of the ROW, the holder shall contact the BLM AO to arrange a pre-termination conference. This conference will be held to review the existing reclamation plan and termination provisions of the grant or agree to a new updated reclamation plan.

**Additional Terms and Conditions:****Wildlife Resources:**

- a. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited from February 1 to July 15.

Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit within identified Greater Sage-Grouse nesting and early brood rearing habitat of a sharp-tailed grouse lek, or in Greater Sage-Grouse and sharp-tailed grouse nesting and early brood rearing habitat from March 1 to July 15.

Any exceptions to these requirements must have prior written approval from the BLM AO.

**\*Please be advised that due to limits on the available time of qualified personnel, the unpredictability of wildlife, and future weather conditions, requests for exceptions to impending wildlife stipulations will only be considered in the event of extraordinary and unavoidable occurrences over which the company has little or no control. Additionally, construction of the pipeline needs to be started in a time frame which would allow for reasonably normal completion prior to the beginning date of wildlife protection stipulations.**

- b. If any dead or injured threatened, endangered, proposed, or candidate animal species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM RFO (307-328-4200) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM RFO shall also be notified within 24 hours.
- c. The holder and holder's sub-contracted personnel shall not intentionally harm or harass wild horses, other wildlife, or domestic livestock.

**Cultural Resources:**

- a. All surface disturbances, including the pipeline trench, shall be monitored by a BLM permitted Archaeologist. An open trench inspection shall be completed by a BLM permitted archaeologist for the entire length of the pipeline.
- b. Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working in his behalf, shall be immediately reported to the District Manager. Operations shall be suspended in the area of such discovery until written authorization to proceed is issued by the District Manager. An evaluation will be conducted by the BLM to determine appropriate actions to prevent the loss of significant cultural values and the BLM will be responsible for the cost of evaluations and mitigation unless otherwise stated in special stipulations.

**Recreation:**

- a. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs and speed limits, conducting operator safety training, and requiring project vehicles to adhere to low speed limits, refrain from littering and drive only on approved

project roads. Operators will inform their employees, contractors, and subcontractors that long term camping (greater than 14 days) on federal lands or at federal recreation-sites is prohibited. Operators will direct their employees, contractors, and subcontractors to abide by state and federal laws and regulations regarding hunting and artifact collecting.

- b. Utilize existing topography to screen roads, pipeline corridors, drill rigs, well heads and production facilities from view. Facilities shall not be located at or near ridgelines. Above ground facilities not requiring safety coloration should be painted with non-reflective Covert Green (5Y 4/2) or other standard environmental color approved by VRM specialist.

**Paleontology:**

- a. The Potential Fossil Yield Classification (PFYC) system has identified the area as having a moderate to high potential to yield scientifically significant paleontological resources. A pre-construction survey will be performed by a BLM permitted consulting paleontologist. Submission of reports will be done directly to the BLM by the paleontologist. A recommendation for mitigation including no further mitigation, on-site monitoring, spot checking or rerouting will be made in the report.

Mitigation actions include proper preparation and curation of collected paleontological resources and filing of applicable consultant reports. On-site monitoring of localities will be performed by qualified paleontologists as approved under a BLM Paleontological Resources Use Permit.

- b. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere. However, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting.

**Hydrology:**

- a. Detailed BMPs and storm water controls must be submitted to BLM Hydrologist prior to construction.

**Construction:**

- a. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
- b. The holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.
- c. The holder shall survey and clearly mark the centerline and/or exterior limits of the ROW.
- d. Construction-sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums,

- petroleum products, ashes, and equipment.
- e. Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in accordance with, the relevant pipeline companies' policy.
  - f. Construction-related traffic shall be restricted to routes approved by the BLM AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the BLM AO. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the BLM AO.
  - g. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the BLM AO.
  - h. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards and/or specifications as determined by the BLM AO.
  - i. When construction activity in connection with the ROW breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the BLM AO and fenced by the holder as per instruction of the BLM AO.
  - j. Accumulated snow present on the ground at the outset of construction, maintenance, or reclamation activities shall be removed before the soil is disturbed and piled downhill from the disturbed area. Equipment used for any non-construction snow removal operations will be equipped with six-inch shoes to ensure blades do not remove topsoil or vegetation and written approval must be obtained before snow removal related to a federal action **but** outside of designated areas is undertaken.
  - k. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.
  - l. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the BLM AO in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the BLM AO in advance of use.
  - m. Remove, and clearly segregate from all other spoil, all available topsoil from constructed locations, including areas of cut and fill, and stockpile at the site for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.).
  - n. Drainage and runoff shall be diverted away from all new construction. All drainage structures shall simulate topographic contour lines, have a grade no greater than .5 - one percent, and shall release water onto undisturbed ground without causing additional and/or accelerated erosion.
  - o. In accordance with the RMP, construction and other surface disturbing activities will be prohibited with frozen material unless the holder receives an approved exception. When there is a potential for frozen material, the holder is required to request in writing an exception to this limitation. This exception may be approved in writing by the BLM AO.

**Operations:**

- a. The holder shall meet federal, state, and local emission standards for air quality.
- b. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- c. Holder shall maintain the ROW in a safe, usable condition, as directed by the BLM AO.
- d. The holder must be prepared to provide BLM copies of applications for and approved federal, state, and local operating permits.
- e. The holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the BLM AO to protect the public, wildlife, livestock or facilities constructed within the ROW.

**Reclamation:**

- a. The annual monitoring report will be submitted by March 1 of each year. This report shall include reclamation and restoration efforts, including seeding/re-vegetation, invasive plant treatment/control, and soil stabilization and erosion prevention. The report shall be in accordance and consistent with the BLM and/or RFO Reclamation Policy, RMP (ROD) and Appendix 36, and the Desolation Flats EIS. The yearly operator report would include surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, will be available at:  
  
[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)  
  
or by contacting the RFO, Minerals and Lands, Supervisory Realty Specialist at 307-328-4200 for further information.
- b. Reclamation earthwork for interim and/or final reclamation would be completed within six months of project completion (weather permitting), and would be consistent with the approved reclamation plan.

Reclamation earthwork may include:

- a) Backfilling pits.
- b) Re-contouring and stabilizing the well site, access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour, shape, function, and configuration that existed before construction (any compacted backfilling activities would ensure proper spoils placement, settling, and stabilization.
- c) Surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch centers to reduce compaction.
- d) Final grading and replacement of topsoil.
- e) Surface-roughening and other techniques such as snow fencing to increase soil moisture

retention and reduce compaction. Surface soil material can be pitted or roughened (not exceeding the applied topsoil depth) such that the entire reclamation area would be uniformly covered with depressions constructed perpendicular to the natural flow of water and/or prevailing wind.

- f) Soil re-testing.
- c. Stockpiled soils would be distributed on disturbed areas and the production facilities would be as small as possible to allow for safe and prudent operations.
- d. Topsoil on the compressor sites shall be reserved for final reclamation. Any topsoil to be stockpiled for longer than one year would be spread in layers not to exceed two feet maximum thickness, including topsoil underneath the pile, and appropriately identified/signed as topsoil. These soil stockpiles would be seeded with a prescribed seed mixture or sterile cover crop (described in the approved reclamation plan) and covered with mulch to reduce erosion and discourage weed invasion.
- e. All practicable measures would be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There would be no evidence of mass-wasting, head-cutting, large rills, gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the holder is required to use certified weed-free hay, straw, and mulch on the BLM lands.
- f. The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the BLM AO.
- g. The holder shall construct waterbars on all disturbed areas. Waterbars are to be constructed to:  
(1) simulate the imaginary contour lines of the slope (**ideally with a grade of one or two percent**);  
(2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
- h. Re-vegetation would consist of species occurring in the surrounding natural vegetation and/or included in the approved seed mix, as deemed desirable by the BLM or private surface owner in review and approval of the reclamation plan. Inter-seeding, secondary seeding, or staggered seeding may be required to accomplish re-vegetation objectives. The seed mixture(s) would be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There would be no primary or secondary noxious weed seed in the seed mixture. Seed would be tested and the viability testing of seed would be done in accordance with state law(s) and within nine months prior to purchase. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the BLM AO. Since seeds are of different sizes and require different planting depths, appropriate equipment would be used to ensure the seed mixture is correctly and uniformly planted over the disturbed area. Seed would be broadcast if drilling is not possible. The seeding would be repeated until a satisfactory stand is established as determined by the BLM AO.
- i. Temporary fencing of the reclaimed well/facilities locations for the first two growing seasons after either interim or final seeding may be required to exclude livestock and wildlife and to help ensure better re-vegetation success. Similarly, off-road vehicle prevention measures shall be employed on reclaimed locations.

- j. Any subsequent re-disturbance of reclamation would be reclaimed within six months by the same means, as described in the approved reclamation plan.
- k. Prior to commencing final reclamation activities, the holder shall notify the BLM. A joint inspection of the disturbed areas may be required and attended by the BLM and the holder (or holder's representative), the primary purpose of which is to review and agree to the existing (or a new) abandonment and/or final reclamation plan. All reclamation should be accomplished as soon as possible after the disturbance occurs, with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (three to five years) (RMP ROD Appendix 13-8).
- l. Reclamation plans and procedures, including those for seeding/re-vegetation and weed control, shall be modified and revised as necessary in order to achieve desired results and requirements.
- m. Evaluation of growth and success would be conducted as per RMP ROD (Appendix 36). The sites would also comply with additional management needs, including control of weed infestations. Success criteria as defined by the RMP is: criteria based on pre-disturbance surveys or surveys of adjacent undisturbed natural ground cover and species composition or 80 percent of Pre-disturbance ground cover, 90 percent dominant species, no noxious weeds, and erosion features equal to or less than the surrounding area.

Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention would be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting would be in accordance and consistent with the Wyoming State Reclamation Policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) would be modified and revised as necessary and required to achieve desired results and requirements.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-construction meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-reclamation meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

In the areas where the project crosses soils that are classified as having a texture of Sand, Loamy Sand, or Sandy Loam, the operator shall have additional Best Management Practices installed to stabilize the soil and decrease the wind and water erosion on the project.

For each project, a reference site shall be set up for each major vegetation community that the project crosses. At each reference site the vegetation basal cover data, species frequency, erosion data shall be collected. This reference site shall be selected by the operator and the BLM AO.

**Compressor Sites:**

- a. No surface disturbing activities shall take place on the subject ROW until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Plan for the approved

- APD, relevant to any APD facilities.
- b. All open vent stack equipment shall be designed and constructed to prevent entry by birds and bats and to discourage perching.
  - c. All wells, above-ground structures, production equipment, tanks, transformers, and insulators not subject to coloring requirements for safety shall be painted the color to match existing facilities.
  - d. A hospital grade noise dampening muffler will be required for each compressor unit to mitigate noise impact on wildlife. Additional noise reduction techniques may be required if research shows the current techniques are not adequate.
  - e. All facilities on location having the potential to leak/spill oil, glycol, methanol, produced water, condensate, or other fluids which may constitute a hazard to the environment, public health or safety (including, but not limited to, drain sumps, sludge holdings, and chemical containers), would be within secondary containment, impervious to those fluids, exclusive of wildlife and livestock, with animal/bird escape capability, and able to contain a minimum of 110percent of the volume of the largest storage vessel, respective to content, or 100percent with at least one foot of freeboard, whichever is greater, so that any spill or leakage would not drain, infiltrate, or otherwise escape to ground water, surface water, or navigable waters before cleanup can be completed (within 72 hours).
  - f. The Operator shall contain and remove all debris, unused equipment, and other waste materials. Waste materials shall be disposed of at an approved disposal facility. Additionally, all production facilities and other infrastructure shall be removed prior to reclamation activities.
  - g. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Operator), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the operator shall obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form).
  - h. Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention shall be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting shall be in accordance and consistent with the Wyoming State Reclamation Policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) shall be modified and revised as necessary and required to achieve desired results and requirements.
  - i. By March 1 of each year the operator shall report and submit annual surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) and Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, is available at the following web address:  
  
[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)  
  
or by contacting the RFO, Minerals and Lands, Supervisory Natural Resource Specialist/Physical Scientist at 307-328-4200 for further information.
  - j. Any subsequent re-disturbance of interim reclamation shall be reclaimed within six months by the same means described herein.

- k. All practicable measures shall be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There shall be no evidence of mass-wasting, head-cutting, large rills or gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the Operator is required to use certified weed-free hay, straw, and mulch on the BLM lands.
- l. All applicable terms, requirements, stipulations, Terms and Conditions (T&Cs), plans, maps and drawings approved as a component of the original approved ROW and POD, including those for reclamation, cultural, and wildlife, shall remain in full force and effect.
- m. Construction control stakes shall be placed as necessary to ensure construction of the compressor site, topsoil stockpile, spoil pile, and outer limits of the area to be disturbed in accordance with the specifications outlined in the ROW. The holder shall assume full responsibility for protecting all stakes and offsetting any additional stakes or grades which may be necessary.
- n. Fencing shall be installed around the compressor site in order to help maintain the integrity of the surrounding containment structure and to prevent livestock and wildlife from entering the area.
- o. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued there under, or applicable laws of the State of Wyoming and regulations issued there under. Holder shall give immediate notice of any such discharge to the BLM AO and such other federal and state officials as are required by law to be given such notice.
- p. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this compressor site is Covert Green (5Y 4/2).
- q. Crowned, ditched, and graveled roads will provide access to the compressor site. These new access roads will be surfaced with a gravel material acceptable to the BLM. Topsoil and vegetation will be windrowed to the side of the road. After the road is crowned and ditched, the topsoil will be pulled back onto the cut slopes of the road ROW so there is no berm left at the top of the cut slope.
- r. All construction work will be accomplished as specified by the BLM. If not specific BLM field survey requirements are provided, the design, field survey, and construction requirement for the BLM "resource roads" described in the BLM 9113 Manual will be followed. Design drawings and templates will be submitted only if specifically required by the BLM.
- s. The all-weather roads to the compressor site will have a travel way approximately 16 feet wide. All equipment and vehicles will be confined to these travel corridors and other areas specified in the POD. All disturbances related to these access roads will be confined within the travel corridor.
- t. Culverts and other road drainage control structures, such as drainage dips, ditches, or water bars, will be installed at specific locations as specified by the BLM. Drainage structures will be designed to pass all naturally occurring mean flows and flows from certain storm events, as specified by the BLM. Where needed, riprap will be placed at the outlets of culverts to minimize erosion.
- u. Emissions of particulate matter from well pad, road, and other facility construction, operation, and reclamation activities will be minimized by application of water or other dust suppressants. Dust

inhibitors (surfacing materials, dust suppressants, and water) will be used as necessary on locations that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM AO.

### **Barricade East & West Access Road (WYW-182142)**

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2800.
- b. Upon grant termination by the BLM AO, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the BLM AO.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the BLM AO at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a ROW or permit granted herein may be reviewed at any time deemed necessary by the BLM AO.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A (Plan of Development) and B (Map) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this ROW grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall comply with all federal, state, and local regulations whether or not specifically mentioned within this grant.
- h. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the BLM AO. A copy of the complete ROW grant, including all stipulations and approved plan of development, shall be made available on the ROW area during construction, operation, and termination to the BLM AO. Noncompliance with the above will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- i. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM AO and the respective installing authority if known. Where General Land Office or BLM ROW monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed

monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM AO. If the BLM cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

- j. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the BLM AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM AO. An evaluation of the discovery will be made by the BLM AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM AO after consulting with the holder.
- k. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere, however, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting. (modified from 43CFR3809.420(b)(8), and BLM IM 2009-011).
- l. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.
- m. To further reduce the spread of invasive and noxious weeds following construction activities, inspections for weeds will be conducted each year along with revegetation monitoring during the first five years following construction. Thereafter, weed surveys would be conducted at least once every three years at appropriate times as directed by the BLM AO, for the life of the project. Reports of these surveys will be submitted to the BLM AO within 30 days of the surveys.
- n. The holder of this ROW grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- o. The holder shall contact the BLM AO at least 48 hours (two days) prior to the anticipated start of construction and/or any surface disturbing activities. This can be done by logging into: [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html). Then click on **ROW Construction Notice** and fill in the form and submit it. Or, you may call the BLM AO. The BLM AO may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the ROW. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with

- construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development.
- p. The holder shall have, on-site, a qualified individual (not the dirt contractor) to serve as Compliance Coordinator. This individual will be responsible for assuring that all requirements of the Plan of Development and appropriate Additional Terms and Conditions are applied. **The holder must provide the name of the Compliance Coordinator to the BLM AO prior to any surface disturbance.**
  - q. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of **four (4)** inches deep, the soil shall be deemed too wet to adequately support construction equipment.
  - r. The holder shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the ROW.
  - s. The holder shall inform the BLM AO within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR 195.
  - t. The holder(s) shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, *et seq.*) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM AO concurrent with the filing of the reports to the involved federal agency or state government.
  - u. The holder of ROW No. WYW-170826 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, *et seq.* or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 *et seq.*) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holder's activity on the ROW). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
  - v. In the event that the public land underlying the ROW (ROW) encompassed in this grant, or a portion thereof, is conveyed out of federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations at 43 CFR 2800, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable state and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions

of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.

- w. A litter policing program shall be implemented by the holder, and approved of in writing by the BLM AO, which covers all roads and sites associated with the ROW.
- x. For the purpose of determining joint maintenance responsibilities, the holder shall make road use plans known to all other authorized users of the road. Holder shall provide the BLM AO, within 30 days from the date of the grant, with the names and addresses of all parties notified, dates of notification, and method of notification. Failure of the holder to share proportionate maintenance costs on the common use access road in dollars, equipment, materials, or manpower with other authorized users may be adequate grounds to terminate the ROW grant. The determination as to whether this has occurred and the decision to terminate shall rest with the BLM AO. Upon request, the BLM AO shall be provided with copies of any maintenance agreement entered into. Authorized users are as follows:

**Devon Energy Production Company**, 333 W Sheridan Avenue, Oklahoma City, OK 73102-5101

**QEP Energy Company**, 1050 17<sup>th</sup> Street, Suite 500, Denver, CO 80265-1050

**Wesco Operating Inc.**, P.O. Box 1650, Casper, WY 82602-1650

**Warren Resources, Inc.**, 123 W. 1<sup>st</sup> Street, Suite 400, Casper, WY 82601-2482

**Thorofare Resources Inc.**, 5711 Osage Avenue, Suite C, Cheyenne, WY 82009-4088

**Vector Minerals Corp.**, 8200 S. Quebec Street #A3-243, Centennial, CO 80112-4411

**Vaquero Energy Inc.**, P.O. Box 13550, Bakersfield, CA 93389-3550

**Samson Resources Company**, 2 W. 2<sup>nd</sup> Street, Tulsa, OK 74103-3123

**Yates Petroleum Corp.**, P.O. Box 1908, Rock Springs WY 82902-1908

**Western Interior Oil & Gas Corporation**, 159 N. Wolcott Street, Suite 125, Casper WY 82601-1993

**EOG Resources Inc.**, P.O. Box 4362, Houston, TX 77210-4362

**Kerr McGee Oil & Gas Onshore LP**, P.O. Box 173779, Denver, CO 80217-3779

**Encana Oil & Gas (USA) Inc.**, 370 17<sup>th</sup> Street, Suite 1700, Denver, CO 80202-5632

- y. Prior to termination of the ROW, the holder shall contact the BLM AO to arrange a pre-termination conference. This conference will be held to review the existing reclamation plan and termination provisions of the grant or agree to a new updated reclamation plan.

#### **Additional Terms and Conditions:**

##### **Wildlife Resources:**

- a. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited from February 1 to July 31.

**Please note that the above raptor stipulation(s) may differ from past raptor stipulations as a result of the signing of the Record of Decision for the new Rawlins RMP on December 24, 2008.**

Surface disturbing and disruptive activities within mule deer crucial winter range are prohibited during the period of November 15 to April 30.

To protect the identified pronghorn and mule deer migration corridor, surface disturbing activities are prohibited between March 1 to May 15 (spring) and October 15 to December 15 (fall).

To accommodate big game movements through corridors, gaps in the snow berms, at least 100 feet

wide, will be required every ¼-mile along roads.

Traffic speed and volume (via car-pooling, etc.) will be limited during night-time hours between April 1 to May 15 (spring) and October 15 to December 15 (fall). Work schedules and shift changes will be modified during this time to protect big game migration movements.

Surface disturbing activities or occupancy are prohibited on and within one-quarter mile of the perimeter of an occupied Greater Sage-Grouse or sharp-tailed grouse lek. Disruptive activities are prohibited between 6pm-9am, March 1-May 20 on and within one-quarter mile of lek perimeter.

Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit within identified Greater Sage-Grouse nesting and early brood rearing habitat of a sharp-tailed grouse lek, or in Greater Sage-Grouse and sharp-tailed grouse nesting and early brood rearing habitat from March 1 to July 15.

Surface disturbing and disruptive activities located in potential mountain plover habitat are prohibited during the reproductive period of April 10 to July 10 for the protection of nesting plover. Additional protection measures may be applied if this area is later determined to be within occupied habitat.

Avoid activities within identified 100-year flood plain, within 500 feet of perennial waters, springs, wells, and wetlands, and 100 feet of the inner gorge of ephemeral channels where amphibians may be present.

Survey for the BLM sensitive plant, Gibbens-beardtongue, in T. 13 N. R. 91 W. Sec. 5.; T. 13 N. R 93 W., Sec. 19-21, & 23; and T. 13 N. R. 94 W. 21-23; prior to surface disturbing activities.

Any exceptions to this/these requirements must have prior written approval from the BLM AO.

**\*Please be advised that due to limits on the available time of qualified personnel, the unpredictability of wildlife, and future weather conditions, requests for exceptions to impending wildlife stipulations will only be considered in the event of extraordinary and unavoidable occurrences over which the company has little or no control. Additionally, construction of the pipeline needs to be started in a time frame which would allow for reasonably normal completion prior to the beginning date of wildlife protection stipulations.**

- b. If any dead or injured threatened, endangered, proposed, or candidate animal species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM RFO (307-328-4200) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM RFO shall also be notified within 24 hours.
- c. The holder and holder's sub-contracted personnel shall not intentionally harm or harass wild horses, other wildlife, or domestic livestock.

**Cultural Resources:**

- a. All future surface disturbance will be assessed for cultural resources.
- b. Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working in his behalf, shall be immediately reported to the District Manager. Operations shall be suspended in the area of such discovery until written authorization to proceed is issued by

the District Manager. An evaluation will be conducted by the BLM to determine appropriate actions to prevent the loss of significant cultural values and the BLM will be responsible for the cost of evaluations and mitigation unless otherwise stated in special stipulations.

**Recreation:**

- a. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs and speed limits, conducting operator safety training, and requiring project vehicles to adhere to low speed limits, refrain from littering and drive only on approved project roads. Operators will inform their employees, contractors, and subcontractors that long term camping (greater than 14 days) on federal lands or at federal recreation-sites is prohibited. Operators will direct their employees, contractors, and subcontractors to abide by state and federal laws and regulations regarding hunting and artifact collecting.

**Paleontology:**

- a. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere. However, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting.

**Wild Horses and Burros:**

- a. Operator should avoid photo point and transect monitoring stations at the following locations:
  - Willow Creek # 2 – located at the section marker of sections 4, 5, 8 and 9;
  - Secondary Photo point located in the SW¼NE¼ of Section 17 in T. 15 N, R 95 W.
- b. Project has the potential to impact water flows into reservoirs. If water flow into reservoirs is impacted, additional mitigation may be needed such as culverts or other measures.

**Soils and Weeds:**

- a. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.

**Construction:**

- a. All design, material, and construction, operation, maintenance, and termination practices shall be

- in accordance with safe and proven engineering practices.
- b. The holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.
  - c. The holder shall survey and clearly mark the centerline and/or exterior limits of the ROW.
  - d. Construction-sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
  - e. Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in accordance with, the relevant pipeline companies' policy.
  - f. Construction-related traffic shall be restricted to routes approved by the BLM AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the BLM AO. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the BLM AO.
  - g. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the BLM AO.
  - h. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards and/or specifications as determined by the BLM AO.
  - i. When construction activity in connection with the ROW breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the BLM AO and fenced by the holder as per instruction of the BLM AO.
  - j. Accumulated snow present on the ground at the outset of construction, maintenance, or reclamation activities shall be removed before the soil is disturbed and piled downhill from the disturbed area. Equipment used for any non-construction snow removal operations will be equipped with six-inch shoes to ensure blades do not remove topsoil or vegetation and written approval must be obtained before snow removal related to a federal action **but** outside of designated areas is undertaken.
  - k. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.
  - l. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the BLM AO in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the BLM AO in advance of use.
  - m. Remove, and clearly segregate from all other spoil, all available topsoil from constructed locations, including areas of cut and fill, and stockpile at the site for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.).
  - n. Drainage and runoff shall be diverted away from all new construction. All drainage structures shall

simulate topographic contour lines, have a grade no greater than .5 - 1 percent, and shall release water onto undisturbed ground without causing additional and/or accelerated erosion.

- o. In accordance with the RMP, construction and other surface disturbing activities will be prohibited with frozen material unless the holder receives an approved exception. When there is a potential for frozen material, the holder is required to request in writing an exception to this limitation. This exception may be approved in writing by the BLM AO.

**Operations:**

- a. The holder shall meet federal, state, and local emission standards for air quality.
- b. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- c. Holder shall maintain the ROW in a safe, usable condition, as directed by the BLM AO.
- d. The holder must be prepared to provide BLM copies of applications for and approved federal, state, and local operating permits.
- e. If snow removal from the road is undertaken, equipment used for snow removal operations shall be equipped with shoes to keep the blade six inches off the road surface. Holder shall take special precautions where the surface of the ground is uneven and at drainage crossings to ensure that equipment blades do not destroy vegetation.
- f. The holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the BLM AO to protect the public, wildlife, livestock or facilities constructed within the ROW.

**Reclamation:**

- a. The annual monitoring report will be submitted by March 1 of each year. This report shall include reclamation and restoration efforts, including seeding/re-vegetation, invasive plant treatment/control, and soil stabilization and erosion prevention. The report shall be in accordance and consistent with the BLM and/or RFO Reclamation Policy, RMP (ROD) and Appendix 36, and the Desolation Flats EIS. The yearly operator report would include surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, will be available at:  
  
[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)  
  
or by contacting the RFO, Minerals and Lands, Supervisory Realty Specialist at 307-328-4200 for further information.
- b. Reclamation earthwork for interim and/or final reclamation would be completed within six months of project completion (weather permitting), and would be consistent with the approved reclamation plan.

Reclamation earthwork may include:

- a) Backfilling pits.
  - b) Re-contouring and stabilizing the well site, access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour, shape, function, and configuration that existed before construction (any compacted backfilling activities would ensure proper spoils placement, settling, and stabilization.
  - c) Surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch centers to reduce compaction.
  - d) Final grading and replacement of topsoil.
  - e) Surface-roughening and other techniques such as snow fencing to increase soil moisture retention and reduce compaction. Surface soil material can be pitted or roughened (not exceeding the applied topsoil depth) such that the entire reclamation area would be uniformly covered with depressions constructed perpendicular to the natural flow of water and/or prevailing wind.
- c. Stockpiled soils would be distributed on disturbed areas and the production facilities would be as small as possible to allow for safe and prudent operations.
  - d. All practicable measures would be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There would be no evidence of mass-wasting, head-cutting, large rills, gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the holder is required to use certified weed-free hay, straw, and mulch on the BLM lands.
  - e. The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the BLM AO.
  - f. The holder shall construct waterbars on all disturbed areas. Waterbars are to be constructed to: (1) simulate the imaginary contour lines of the slope (**ideally with a grade of one or two percent**); (2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
  - g. Re-vegetation would consist of species occurring in the surrounding natural vegetation and/or included in the approved seed mix, as deemed desirable by the BLM or private surface owner in review and approval of the reclamation plan. Inter-seeding, secondary seeding, or staggered seeding may be required to accomplish re-vegetation objectives. The seed mixture(s) would be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There would be no primary or secondary noxious weed seed in the seed mixture. Seed would be tested and the viability testing of seed would be done in accordance with state law(s) and within nine months prior to purchase. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the BLM AO. Since seeds are of different sizes and require different planting depths, appropriate equipment would be used to ensure the seed mixture is correctly and uniformly planted over the disturbed area. Seed would be broadcast if drilling is not possible. The seeding would be repeated until a satisfactory stand is established as determined by the BLM AO.
  - h. Any subsequent re-disturbance of reclamation would be reclaimed within six months by the same

means, as described in the approved reclamation plan.

- i. Prior to commencing final reclamation activities, the holder shall notify the BLM. A joint inspection of the disturbed areas may be required and attended by the BLM and the holder (or holder's representative), the primary purpose of which is to review and agree to the existing (or a new) abandonment and/or final reclamation plan. All reclamation should be accomplished as soon as possible after the disturbance occurs, with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (three to five years) (RMP ROD Appendix 13-8).
- j. Reclamation plans and procedures, including those for seeding/re-vegetation and weed control, shall be modified and revised as necessary in order to achieve desired results and requirements.
- k. Evaluation of growth and success would be conducted as per RMP ROD (Appendix 36). The site would also comply with additional management needs, including control of weed infestations. Success criteria as defined by the RMP is: criteria based on pre-disturbance surveys or surveys of adjacent undisturbed natural ground cover and species composition or 80 percent of Pre-disturbance ground cover, 90 percent dominant species, no noxious weeds, and erosion features equal to or less than the surrounding area.

Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention would be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting would be in accordance and consistent with the Wyoming State Reclamation Policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) would be modified and revised as necessary and required to achieve desired results and requirements.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-construction meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-reclamation meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

In the areas where the project crosses soils that are classified as having a texture of Sand, Loamy Sand, or Sandy Loam, the operator shall have additional Best Management Practices installed to stabilize the soil and decrease the wind and water erosion on the project.

For each project, a reference site shall be set up for each major vegetation community that the project crosses. At each reference site the vegetation basal cover data, species frequency, erosion data shall be collected. This reference site shall be selected by the operator and the BLM AO.

**Access Roads:**

- a. Road will be built in association with the final BLM approved road design.
- b. Operator will conduct a traffic study to validate the average seasonal daily counts through traffic counters. Traffic counters are to be placed on the road for a minimum of two years. Based on

- circumstances and at the discretion of the BLM AO, term may be extended or decreased.
- c. The holder shall furnish and install culverts of the gauge, materials, diameter(s), and length(s) indicated and approved by the BLM AO. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned to minimize erosion. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts.
  - d. Surfacing shall be designed to accommodate anticipated loading and traffic volumes and shall provide for future maintenance.
  - e. All vehicles shall use only authorized travel routes and shall not use any other access route, such as two-track roads, trails, and pipeline ROWs to the drill/well pad and any ancillary facilities.
  - f. Two-track roads shall not be cut-off as a direct result of construction, maintenance, or reclamation of the well access road or associated well facilities.
  - g. All access roads and drainage control structures, whether existing or newly-constructed, shall be both constructed to resource road standards and regularly maintained in a safe and usable condition as outlined in the BLM Manual, Section 9113. A regular maintenance program may include, but is not limited to: blading, ditching, culvert installation, dust control, and gravel surfacing or other activities as specified by the BLM AO.
  - h. Prior to construction, road(s) shall be surveyed and staked with construction control stakes set continuously along the centerline at maximum 100-foot intervals (less where needed to be inter-visible) and at all tangent and curve control points, fence or utility crossings, and culverts. In addition to centerline stakes, slope stakes shall be placed at the top of the cut and the bottom of the fill for those portions of the road that are engineered.
  - i. Before proposed road construction activities begin, the topsoil must be bladed to the side of the road and stockpiled. The topsoil stockpile shall be contoured so as to prevent water ponding or flow concentration. Once the barrow ditch and the cut slopes are constructed, cleared vegetative material and topsoil that is windrowed shall be spread back onto the cut/fill slopes of the road, removing any windrows or berms remaining at the edge of the road.
  - j. The minimum travel-way width of the immediate access road will be 14 feet with turnouts at least 10 feet in width. No structure will be allowed to narrow the road top. The inside slope will be 4:1. The bottom of the ditch will be a smooth V with no vertical cut in the bottom. The outside slope will be 2:1 or shallower. After the road is crowned and ditched with a .03 - .05 ft/ft crown the topsoil and windrowed vegetative material shall be pulled back down on the cut slope so there is no berm left at the top of the cut slope. Turnouts will be spaced at a maximum distance of 1000 feet and will be inter-visible. If the access road crosses a floodplain, the ditch shall be flat-bottomed so as to provide material to raise the road.
  - k. If soils along the access road route are dry during road construction, use, and/or maintenance, fresh water shall be applied to the road surface to facilitate soil compaction and minimize soil loss as a result of wind erosion.
  - l. Construction and surfacing of the new access road shall be complete prior to moving drilling equipment onto the well pad and the presence of heavy vehicular traffic. Compact the top foot of sub-grade to a 95percent maximum density as determined by AASHTO T-99. Surface with an

- appropriate grade of gravel to a minimum depth of four (compacted) inches.
- m. As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway by water barring, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.
  - n. Culverts shall have a minimum of 1two inches of fill or one-half the pipe diameter, whichever is greater, placed on top of the culvert, and shall be of length sufficient to allow at least 24 inches of culvert to extend from the fill slope face. The inlet and outlet shall be set on grade. No rocks shall be used in the bed material and no rocks greater than two inches in diameter will be immediately adjacent to the culvert. The entire length of pipe shall be bedded on native material before backfilling, which shall be completed using unfrozen material and rocks no larger than two inches in diameter; compact the backfill evenly in six-inch lifts on both sides of the culvert. A permanent marker shall be installed at both ends of the culvert to help prevent traffic from damaging the culvert. Additional culverts will be placed in the new access road as the need arises or as directed by BLM AO.
  - o. Wing-ditches shall be staked and constructed at a slope of .5 to 1.0 percent down slope unless otherwise approved by the BLM AO. In no case shall wing-ditches discharge adjacent to a channel bank.
  - p. All drainage ditches and culverts shall be kept clear and free-flowing, and shall also be maintained in accordance with the original construction standards.

**Barricade Pressure High and Pressure Reducing Loop (WYW-181267 and WYW181470)**

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations part 2880.
- b. Upon grant termination by the BLM AO, all improvements shall be removed from the public lands within 90 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the BLM AO.
- c. Each grant issued for a term of 20 years or more shall, at a minimum, be reviewed by the BLM AO at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a ROW or permit granted herein may be reviewed at any time deemed necessary by the BLM AO.
- d. The stipulations, plans, maps, or designs set forth in Exhibits A (Plan of Development) and B (Map) attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this ROW grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- g. The holder shall comply with all federal, state, and local regulations whether or not specifically mentioned within this grant.
- h. No surface disturbing activities shall take place on the subject ROW until the associated APD is

approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any ROW facilities.

- i. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this ROW in strict conformity with the plan of development which was approved and made part of this grant. Any relocation, additional construction, or use that is not in accord with the approved plan of development, shall not be initiated without the prior written approval of the BLM AO. A copy of the complete ROW grant, including all stipulations and approved plan of development, shall be made available on the ROW area during construction, operation, and termination to the BLM AO. Noncompliance with the above

will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.

- j. The holder shall protect all survey monuments found within the ROW. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the BLM AO and the respective installing authority if known. Where General Land Office or BLM ROW monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a BLM cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the BLM AO. If the BLM cadastral surveyors or other federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.
- k. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or federal land shall be immediately reported to the BLM AO. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the BLM AO. An evaluation of the discovery will be made by the BLM AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the BLM AO after consulting with the holder.
- l. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere, however, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting. (modified from 43CFR3809.420(b)(8), and BLM IM 2009-011).
- m. Weeds shall be controlled on project disturbed areas and native areas infested as a direct result of the project. The control methods shall be in accordance with the approved weed management plan (to be submitted by the Holder), and guidelines established by the EPA, BLM, state and local

- authorities. Prior to the use of pesticides, the holder will obtain written approval from the BLM AO—Weed Coordinator (meaning an approved Pesticide Use Proposal form). Copies of daily Pesticide Application Records (required by the State of Wyoming) and Summary Herbicide Use Reports are due monthly to the BLM AO – Weed Coordinator.
- n. To further reduce the spread of invasive and noxious weeds following construction activities, inspections for weeds will be conducted each year along with revegetation monitoring during the first five years following construction. Thereafter, weed surveys would be conducted at least once every three years at appropriate times as directed by the BLM AO, for the life of the project. Reports of these surveys will be submitted to the BLM AO within 30 days of the surveys.
- o. The holder of this ROW grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- p. The holder shall contact the BLM AO at least 48 hours (two days) prior to the anticipated start of construction and/or any surface disturbing activities. This can be done by logging into: [http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html). Then click on **ROW Construction Notice** and fill in the form and submit it. Or, you may call the BLM AO. The BLM AO may require and schedule a preconstruction conference with the holder prior to the holder's commencing construction and/or surface disturbing activities on the ROW. The holder and/or his representative shall attend this conference. The holder's contractor, or agents involved with construction and/or any surface disturbing activities associated with the ROW, shall also attend this conference to review the stipulations of the grant including the plan of development.
- q. The holder shall have, on-site, a qualified individual (not the dirt contractor) to serve as Compliance Coordinator. This individual will be responsible for assuring that all requirements of the Plan of Development and appropriate Additional Terms and Conditions are applied. **The holder must provide the name of the Compliance Coordinator to the BLM AO prior to any surface disturbance.**
- r. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of **four (4)** inches deep, the soil shall be deemed too wet to adequately support construction equipment.
- s. Within 90 days of completion, the holder will submit to the BLM AO, as-built drawings and a certification of construction verifying that the facility has been constructed (and tested) in accordance with the design, plans, specifications, and applicable laws and regulations.
- t. The holder shall conduct all activities associated with the construction, operation, and termination of the ROW within the authorized limits of the ROW.
- u. The holder shall inform the BLM AO within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR 195.
- v. The holder(s) shall comply with all applicable federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder(s) shall comply with the Toxic Substances Control Act of 1976, as amended (15 U.S.C. 2601, et seq.) with regard to any toxic substances that are used, generated by or stored on the ROW or on facilities authorized under this ROW grant. (See 40 CFR 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity

established by 40 CFR 117 shall be reported as required by the Comprehensive Environmental Response, Compensation and Liability Act of 1980, Section 102b. A copy of any report required or requested by any federal agency or state government as a result of a reportable release or spill of any toxic substances shall be furnished to the BLM AO concurrent with the filing of the reports to the involved federal agency or state government.

- w. The holder of ROW No. WYW-170826 agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 et seq.) on the ROW (unless the release or threatened release is wholly unrelated to the ROW holder's activity on the ROW). This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
- x. In the event that the public land underlying the ROW (ROW) encompassed in this grant, or a portion thereof, is conveyed out of federal ownership and administration of the ROW or the land underlying the ROW is not being reserved to the United States in the patent/deed and/or the ROW is not within a ROW corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the ROW, or portion thereof, within the conveyed land under federal laws, statutes, and regulations, including the regulations at 43 CFR 2880, including any rights to have the holder apply to BLM for amendments, modifications, or assignments and for BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the United States in all matters relating to the ROW, or portion thereof, within the conveyed land and shall be subject to applicable state and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the ROW shall be considered a civil matter between the patentee/grantee and the ROW Holder.
- y. A litter policing program shall be implemented by the holder, and approved of in writing by the BLM AO, which covers all roads and sites associated with the ROW.
- z. Prior to termination of the ROW, the holder shall contact the BLM AO to arrange a pre-termination conference. This conference will be held to review the existing reclamation plan and termination provisions of the grant or agree to a new updated reclamation plan.

#### **Additional Terms and Conditions:**

##### **Wildlife Resources:**

- a. Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited from February 1 to July 31.

**Please note that the above raptor stipulation(s) may differ from past raptor stipulations as a result of the signing of the Record of Decision for the new Rawlins RMP on December 24, 2008.**

Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit within identified Greater Sage-Grouse nesting and early brood rearing habitat of a sharp-tailed grouse lek, or in Greater Sage-Grouse and sharp-tailed grouse nesting and early brood rearing habitat from March 1 to July 15. Disruptive activities are prohibited between 6pm-9am, March 1-May 20 on and within one-quarter mile of lek

perimeter.

Avoid activities within identified 100-year flood plain, within 500 feet of perennial waters, springs, wells, and wetlands, and areas within 100 feet of the inner gorge of ephemeral channels where amphibians may be present.

Any exceptions to these requirements must have prior written approval from the BLM AO.

**\*Please be advised that due to limits on the available time of qualified personnel, the unpredictability of wildlife, and future weather conditions, requests for exceptions to impending wildlife stipulations will only be considered in the event of extraordinary and unavoidable occurrences over which the company has little or no control. Additionally, construction of the pipeline needs to be started in a time frame which would allow for reasonably normal completion prior to the beginning date of wildlife protection stipulations.**

- b. If any dead or injured threatened, endangered, proposed, or candidate animal species is located during construction or operation, the U.S. Fish and Wildlife Service's Wyoming Field Office (307-772-2374), their law enforcement office (307-261-6365), and the BLM RFO (307-328-4200) shall be notified within 24 hours. If any dead or injured sensitive species is located during construction or operation, the BLM RFO shall also be notified within 24 hours.
- c. The holder and holder's sub-contracted personnel shall not intentionally harm or harass wild horses, other wildlife, or domestic livestock.

**Cultural Resources:**

- a. All surface disturbances, including the pipeline trench, shall be monitored by a BLM permitted Archaeologist. An open trench inspection shall be completed by a BLM permitted archaeologist for the entire length of the pipeline.
- b. Any cultural resource (historic or prehistoric site or object) discovered by the operator, or any person working in his behalf, shall be immediately reported to the District Manager. Operations shall be suspended in the area of such discovery until written authorization to proceed is issued by the District Manager. An evaluation will be conducted by the BLM to determine appropriate actions to prevent the loss of significant cultural values and the BLM will be responsible for the cost of evaluations and mitigation unless otherwise stated in special stipulations.

**Recreation:**

- a. Minimize conflicts between project vehicles and equipment and recreation traffic by posting appropriate warning signs and speed limits, conducting operator safety training, and requiring project vehicles to adhere to low speed limits, refrain from littering and drive only on approved project roads. Operators will inform their employees, contractors, and subcontractors that long term camping (greater than 14 days) on federal lands or at federal recreation-sites is prohibited. Operators will direct their employees, contractors, and subcontractors to abide by state and federal laws and regulations regarding hunting and artifact collecting.
- b. Utilize existing topography to screen roads, pipeline corridors, drill rigs, well heads and production facilities from view. Facilities shall not be located at or near ridgelines. Above ground facilities not requiring safety coloration should be painted with non-reflective Covert Green (5Y 4/2) or other

standard environmental color approved by VRM specialist.

**Paleontology:**

- a. The Potential Fossil Yield Classification (PFYC) system has identified the area as having a moderate to high potential to yield scientifically significant paleontological resources. A pre-construction survey will be performed by a BLM permitted consulting paleontologist. Submission of reports will be done directly to the BLM by the paleontologist. A recommendation for mitigation including no further mitigation, on-site monitoring, spot checking or rerouting will be made in the report.

Mitigation actions include proper preparation and curation of collected paleontological resources and filing of applicable consultant reports. On-site monitoring of localities will be performed by qualified paleontologists as approved under a BLM Paleontological Resources Use Permit.

- b. The operator shall immediately notify the BLM AO of any paleontological resources discovered as a result of operations under this authorization. Appropriate measures to mitigate adverse effects to significant paleontological resources will be determined by the BLM AO after consulting with project proponent. The project proponent is responsible for the cost of any investigation necessary for the evaluation and for any mitigation measures. The operator may not be required to suspend operations if activities can be adjusted to avoid further impacts to a discovered site or be continued elsewhere. However, the discovery shall be brought to the attention of the BLM AO as soon as possible and protected from damage or looting.

**Hydrology:**

- a. All drainages must be recontoured to pre-disturbance conditions. Runoff potential is high and all BMPs must be implemented correctly, maintained and replaced if not longer functional.
- b. Detailed BMPs must be submitted to BLM Hydrologist prior to construction.
- c. Crossings at both Sand Creek and Willow Creek must bore under the creeks. Pre-disturbance surveys should be taken at major crossings and if trenching is used for minor ephemerals (all which are not bored under), the drainage must be recontoured to original conditions.

**Construction:**

- a. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
- b. The holder shall provide for the safety of the public entering the ROW. This includes, but is not limited to barricades for open trenches, flagmen/women with communication systems for single-lane roads without intervisible turnouts, and attended gates for blasting operations.
- c. The holder shall survey and clearly mark the centerline and/or exterior limits of the ROW.
- d. Construction-sites shall be maintained in a sanitary condition at all times; waste materials at those sites shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.
- e. Construction over and/or immediately adjacent to existing pipelines shall be coordinated, and in

accordance with, the relevant pipeline companies' policy.

- f. Construction-related traffic shall be restricted to routes approved by the BLM AO. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the BLM AO. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the BLM AO.
- g. Existing roads and trails on public lands that are blocked as the result of the construction project shall be rerouted or rebuilt as directed by the BLM AO.
- h. Fences, gates, and brace panels shall be reconstructed to appropriate BLM standards and/or specifications as determined by the BLM AO.
- i. When construction activity in connection with the ROW breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the BLM AO and fenced by the holder as per instruction of the BLM AO.
- j. Accumulated snow present on the ground at the outset of construction, maintenance, or reclamation activities shall be removed before the soil is disturbed and piled downhill from the disturbed area. Equipment used for any non-construction snow removal operations will be equipped with six-inch shoes to ensure blades do not remove topsoil or vegetation and written approval must be obtained before snow removal related to a federal action **but** outside of designated areas is undertaken.
- k. Prior to fill construction, the existing surface shall be sloped to avoid sharp banks and allow equipment operations. No fills shall be made with frozen or water saturated soils. Construction equipment shall be routed evenly over the entire width of the fill to obtain a thorough compaction.
- l. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling through and into a hole.
- m. Holder shall limit excavation to the areas of construction. No borrow areas for fill material will be permitted on the site. All off-site borrow areas must be approved in writing by the BLM AO in advance of excavation. All waste material resulting from construction or use of the site by holder shall be removed from the site. All waste disposal sites on public land must be approved in writing by the BLM AO in advance of use.
- n. Remove, and clearly segregate from all other spoil, all available topsoil from constructed locations, including areas of cut and fill, and stockpile at the site for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.).
- o. Drainage and runoff shall be diverted away from all new construction. All drainage structures shall simulate topographic contour lines, have a grade no greater than .5 - 1 percent, and shall release water onto undisturbed ground without causing additional and/or accelerated erosion.
- p. In accordance with the RMP, construction and other surface disturbing activities will be prohibited with frozen material unless the holder receives an approved exception. When there is a potential for frozen material, the holder is required to request in writing an exception to this limitation. This exception may be approved in writing by the BLM AO.

**Operations:**

- a. Except ROWs expressly authorizing a road after construction of the facility is completed, the holder shall not use the ROW as a road for purposes other than routine maintenance as determined necessary by the BLM AO in consultation with the holder.
- b. The holder shall meet federal, state, and local emission standards for air quality.
- c. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.
- d. Holder shall maintain the ROW in a safe, usable condition, as directed by the BLM AO.
- e. The holder must be prepared to provide BLM copies of applications for and approved federal, state, and local operating permits.
- f. The holder shall permit free and unrestricted public access to and upon the ROW for all lawful purposes except for those specific areas designated as restricted by the BLM AO to protect the public, wildlife, livestock or facilities constructed within the ROW.

**Reclamation:**

- a. The annual monitoring report will be submitted by March 1 of each year. This report shall include reclamation and restoration efforts, including seeding/re-vegetation, invasive plant treatment/control, and soil stabilization and erosion prevention. The report shall be in accordance and consistent with the BLM and/or RFO Reclamation Policy, RMP (ROD) and Appendix 36, and the Desolation Flats EIS. The yearly operator report would include surface disturbance and reclamation data for the previous calendar year, utilizing the BLM RFO Disturbance (As-Built) Reclamation Database. The RFO surface disturbance and reclamation database, as well as information on the database and submission of the data, will be available at:  
  
[http://www.blm.gov/wy/st/en/field\\_offices/Rawlins/oil\\_and\\_gas.html](http://www.blm.gov/wy/st/en/field_offices/Rawlins/oil_and_gas.html)  
  
or by contacting the RFO, Minerals and Lands, Supervisory Realty Specialist at 307-328-4200 for further information.
- b. Reclamation earthwork for interim and/or final reclamation would be completed within six months of project completion (weather permitting), and would be consistent with the approved reclamation plan.

Reclamation earthwork may include:

- a) Backfilling pits.
- b) Re-contouring and stabilizing the well site, access road, cut/fill slopes, drainage channels, utility and pipeline corridors, and all other disturbed areas, to approximately the original contour, shape, function, and configuration that existed before construction (any compacted backfilling activities would ensure proper spoils placement, settling, and stabilization.
- c) Surface ripping, prior to topsoil placement, to a depth of 18-24 inches deep on 18-24 inch

- centers to reduce compaction.
- d) Final grading and replacement of topsoil.
  - e) Surface-roughening and other techniques such as snow fencing to increase soil moisture retention and reduce compaction. Surface soil material can be pitted or roughened (not exceeding the applied topsoil depth) such that the entire reclamation area would be uniformly covered with depressions constructed perpendicular to the natural flow of water and/or prevailing wind.
- c. Stockpiled soils would be distributed on disturbed areas and the production facilities would be as small as possible to allow for safe and prudent operations.
  - d. All practicable measures would be utilized to minimize erosion and stabilize disturbed soils on or adjacent to the disturbed and reclaimed area. There would be no evidence of mass-wasting, head-cutting, large rills, gullies, down cutting or overall slope instability. Should the use or storage of hay, straw, or mulch be necessary, the holder is required to use certified weed-free hay, straw, and mulch on the BLM lands.
  - e. The holder shall restore drainages, to the greatest extent possible, to the original bank configuration, stream bottom width, and channel gradient. Loose soil, fill, and culverts shall be removed from drainage channels as directed by the BLM AO.
  - f. The holder shall construct waterbars on all disturbed areas. Waterbars are to be constructed to: (1) simulate the imaginary contour lines of the slope (**ideally with a grade of one or two percent**); (2) drain away from the disturbed area; and (3) begin and end in vegetation or rock whenever possible.
  - g. Re-vegetation would consist of species occurring in the surrounding natural vegetation and/or included in the approved seed mix, as deemed desirable by the BLM or private surface owner in review and approval of the reclamation plan. Inter-seeding, secondary seeding, or staggered seeding may be required to accomplish re-vegetation objectives. The seed mixture(s) would be planted in the amounts specified in pounds of pure live seed (PLS)/acre. There would be no primary or secondary noxious weed seed in the seed mixture. Seed would be tested and the viability testing of seed would be done in accordance with state law(s) and within nine months prior to purchase. Commercial seed would be either certified or registered seed. The seed mixture container would be tagged in accordance with state law(s) and available for inspection by the BLM AO. Since seeds are of different sizes and require different planting depths, appropriate equipment to ensure the seed mixture is correctly and uniformly planted over the disturbed area. Seed would be broadcast if drilling is not possible. The seeding would be repeated until a satisfactory stand is established as determined by the BLM AO.
  - h. Any subsequent re-disturbance of reclamation would be reclaimed within six months by the same means, as described in the approved reclamation plan.
  - i. Prior to commencing final reclamation activities, the holder shall notify the BLM. A joint inspection of the disturbed areas may be required and attended by the BLM and the holder (or holder's representative), the primary purpose of which is to review and agree to the existing (or a new) abandonment and/or final reclamation plan. All reclamation should be accomplished as soon as possible after the disturbance occurs, with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (three to five years) (RMP ROD Appendix 13-8).

- j. Reclamation plans and procedures, including those for seeding/re-vegetation and weed control, shall be modified and revised as necessary in order to achieve desired results and requirements.
- k. Evaluation of growth and success would be conducted as per RMP ROD (Appendix 36). The sites would also comply with additional management needs, including control of weed infestations. Success criteria as defined by the RMP is: criteria based on pre-disturbance surveys or surveys of adjacent undisturbed natural ground cover and species composition or 80 percent of Pre-disturbance ground cover, 90 percent dominant species, no noxious weeds, and erosion features equal to or less than the surrounding area.

Reclamation and restoration efforts including seeding/re-vegetation, invasive plant control/treatment, and soil stabilization and erosion prevention would be monitored (for success or failure) and reported by the Operator to the BLM AO. Monitoring and reporting would be in accordance and consistent with the Wyoming State Reclamation Policy, RFO RMP Record of Decision (ROD) and Appendix 36, and the Desolation Flats EIS. The reclamation plan including procedures for seeding/revegetation and weed control (via the weed management plan) would be modified and revised as necessary and required to achieve desired results and requirements.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-construction meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

The operator and their designated qualified inspector or licensed professional engineer would conduct a pre-reclamation meeting for each disturbance with the BLM AO or designated representative to determine the selection of the type of best management practices that will be applied in certain areas along the pipelines, access road, and compressor facilities.

In the areas where the project crosses soils that are classified as having a texture of Sand, Loamy Sand, or Sandy Loam, the operator shall have additional Best Management Practices installed to stabilize the soil and decrease the wind and water erosion on the project.

For each project, a reference site shall be set up for each major vegetation community that the project crosses. At each reference site the vegetation basal cover data, species frequency, erosion data shall be collected. This reference site shall be selected by the operator and the BLM AO.

**Pipelines:**

- a. No surface disturbing activities shall take place on the subject ROW until the associated ROW is approved. The holder will adhere to special stipulations in the Plan of Development for the approved ROW, relevant to any ROW facilities.
- b. Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, state or federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipater at the outlets, and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring

resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be

removed from the site upon completion of hydrostatic testing.

- c. The holder shall design and construct adequate water-control structures in each drainage crossing to prevent excessive erosion along the pipeline and protect the pipeline from the natural erosion process within the drainage.
- d. If during any phase of the construction, operation, or termination of the pipeline or related facilities any oil or other pollutant should be discharged from the pipeline system, or from containers or vehicles impacting federal lands, the control and total removal, disposal, and cleanup of such oil or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of holder to control, cleanup, or dispose of such discharge on or affecting federal lands, or to repair all damages to federal lands resulting there from, the BLM AO may take such measures deemed necessary to control, clean up the discharge, and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the BLM AO shall not relieve the holder of any liability or responsibility.
- e. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued there under, or applicable laws of the State of Wyoming and regulations issued there under. Holder shall give immediate notice of any such discharge to the BLM AO and such other federal and state officials as are required by law to be given such notice.
- f. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" designated by the Rocky Mountain Five-State Interagency Committee. The color selected for this pipeline is **Covert Green (5Y 4/2)**.
- g. All cathodic protection facilities shall have approval from the Department of Environmental Quality (DEQ) UIC Division and have an approved Class V, Type 5F1 permit.

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*Endurance/Barricade Gas Infrastructure Project*

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## ***Appendix C***

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Reclamation Methodologies

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## APPENDIX C. RECLAMATION METHODOLOGIES

This appendix includes the BLM's reclamation methodologies for the Endurance/Barricade Gas Infrastructure Project Environmental Assessment.

### 1.0 Additional Reclamation Methodologies

The following sections identify BLM's reclamation methodologies for the Endurance/Barricade Gas Infrastructure Project.

#### 1.1 Interim Reclamation

Erosion control measures for temporary reclamation could include application of mulch and netting of biodegradable erosion blankets stapled firmly to the soil surface, respreading scalped vegetation, or construction of water bars.

To minimize sedimentation of drainage channels and wetlands during the period between construction/installation activity and final reclamation, temporary erosion and sediment control measures should be applied. Sediment control best management practices should be installed along drainage channel banks where sedimentation is excessive and at the base of all slopes adjacent to wetlands. Sediment filtering devices should be maintained in functional condition throughout the life of the project. To avoid the possibility of mulching materials entering waterways, loose mulch (i.e., mulch not crimped into the soil surface, tackified, or incorporated into erosion control blankets) should not be applied to drainage channel banks.

If construction is completed more than 30 days prior to the specified seeding season for perennial vegetation, areas adjacent to the larger drainage channels should be covered with matting for a minimum of 50 feet on either side of the drainage channel. In addition, to protect soil from raindrop impact and subsequent erosion, two tons/acre of a weed-free straw mulch should be applied to all slopes greater than 10 percent. Erosion control measures for temporary disturbances may include leaving the ROW in a roughened condition, respreading of vegetation, and/or applying mulch.

Operators are finding out that it is not always necessary to remove all vegetation and strip all topsoil within a pipeline ROW. In many areas, such as with deep soils on relatively flat smooth slopes with low gradients, it is possible to crush in-place rather than clear vegetation and leave topsoil in-place rather than blade and stockpile. This technique would reduce the magnitude and severity of disturbance impacts and hasten successful reclamation.

Trench breakers should be used for pipeline construction in certain areas to prevent the flow of water in either a trench that has been backfilled or temporarily left open. Trench breakers should be constructed such that the bottom of one breaker is at the same elevation as the top of the next breaker down slope, or every 50 feet, whichever is greater. Factors that control the application of trench breakers include the proximity to drainage channels and wetland areas, slope gradient, proximity of areas to shallow groundwater, and surface runoff source areas that can discharge water into the trench. Trench breakers should be installed, where necessary. Topsoil should not be used to construct trench breakers.

If a pipeline crosses roads at the base of slopes, vegetative strips should be maintained. If vegetation is disturbed within these limits, temporary sediment barriers such as silt fences and/or staked weed-free straw bales should be installed at the base of the slope adjacent to the road crossing. Temporary

1 sediment barriers should remain in-place until permanent revegetation measures have been judged  
2 successful.

## 1.2 Final Reclamation

3 Runoff and erosion control along all ROWs should be accomplished by constructing sediment trapping  
4 devices and water bars, as well as by timely mulching and revegetation of exposed disturbed areas.  
5 Runoff discharged from water bars should be directed into undisturbed vegetation away from all natural  
6 drainages. Erosion and sedimentation control measures and structures should be installed across all  
7 cut-and-fill slopes.

8 If found to be substandard or ineffective, these structures should be cleaned out and maintained in  
9 functional condition until successful revegetation and soil stability is attained.

10 Water bars should be constructed across sideslopes at appropriate intervals according to slope gradient  
11 immediately following recontouring of the disturbed areas. The spacing should depend on whether  
12 mulching is applied in conjunction with placement of water bars. Water bars should be maintained in  
13 functional condition throughout the life of the project. Should the integrity of the water bar system be  
14 disrupted during seeding, water bars should be repaired and broadcast seeded with the seed raked into  
15 the soil.

16 Water bars should be constructed 12 to 18 inches deep by digging a small trench and casting the soil  
17 material to the downhill side in a row. Each water bar should initiate in undisturbed vegetation upslope,  
18 traverse the disturbed area perpendicular to the ROW at a gradient between one and two percent, and  
19 discharge water into undisturbed vegetation on the lower side of the disturbed area.

## 1.3 Drainage Channel Crossings

20 All channel crossings not maintained for access roads should be restored to near predisturbance  
21 conditions. Drainage channel bank slope gradients should be regraded to conform with adjacent slope  
22 gradients. Channel crossings should be designed to minimize changes in channel geometry and  
23 subsequent changes in flow hydraulics. The area of disturbance in the vicinity of washes should be  
24 minimized. Trench plugs should be employed at non-flumed drainage crossings to prevent diversion of  
25 drainage channel flows into upland portions of pipeline trenches during construction. Application of  
26 riprap should be limited to areas where flow conditions prevent vegetative stabilization; riprap activities  
27 must comply with USACE permit requirements. Pipeline trenches should be dewatered in such a  
28 manner that no silt laden water flows into active drainage channels (i.e., prior to discharge the water  
29 should be filtered through a silt fence, weed-free straw bales, or allowed to settle in a sediment  
30 detention pond). Wetland areas and drainage channel crossings should be monitored for a minimum of  
31 three years for invasive, non-native species invasion, accelerated erosion, and sedimentation. Invasive,  
32 non-native species should not be allowed to establish at any time. If found in a reclaimed wetland or  
33 drainage channel crossing, the invasive, non-native species should be removed.

## 1.4 Topsoil Respreading and Seedbed Preparation

34 In preparation for seeding, topsoil that was initially removed should be evenly spread over the pipeline  
35 ROW, staging areas, cut-and-fill surfaces, and all areas of other sites not required for production  
36 purposes.

1 Soil compaction could result from heavy equipment working on disturbed soils prior to revegetation.  
2 Therefore, compaction is likely to occur under most situations. Soil compaction can inhibit adequate  
3 revegetation of disturbance areas. Therefore, all disturbances to be revegetated will be ripped to  
4 reduce the adverse effect of compaction. All disturbed areas should be ripped on 18 to 26 inches  
5 spacing and 12 to 16 inches deep. The subsoil surface should be left rough. After topsoil has been  
6 respread and if it is loose, it should be compacted with a cultipacker or similar implement to provide a  
7 firm seedbed. On steep slopes (greater than 40 percent and highly erosive), it may be difficult or  
8 impossible to replace topsoil and adequately prepare the seedbed. The disturbed areas on steep slopes  
9 should be ripped as described above. These areas should then be mulched with a  
10 hydromulch/seed/tackifier mix. Erosion control blankets with seed incorporated into the matting  
11 should be installed per manufacturer's specifications to enhance soil stabilization.

### 1.5 Seed Application

12 Upon completion of final grading, soil surfaces should either be seeded, or erosion control measures  
13 should be used until the site is seeded. Timing of seeding should be adjusted depending upon weather,  
14 soil moisture conditions and the plant species being used. The seedbed should be prepared to a depth  
15 of three to four inches where possible to provide a firm seedbed. If hydroseeding or broadcast seeding  
16 is employed, the seedbed should be scarified to ensure good seed-soil contact.

17 Seed should be used within 12 months of viability testing. Legume species purchased commercially  
18 must have been properly inoculated with nitrogen-fixing bacteria. Seed should preferably be planted  
19 with drill-type equipment such as a rangeland drill or billion seeder. Where the microtopography of the  
20 disturbed areas does not allow drill-type equipment, seed should be broadcast applied at twice the  
21 application rate of drilled seed. A spike-toothed harrow or similar equipment should be used where  
22 ripping has been insufficient to provide cover for the broadcast seed.

23 The seed should be applied according to specific areas identified to be homogeneous in terms of overall  
24 ecosystem similarities such as precipitation zones, elevational zones, dominant species herbaceous  
25 cover, soil types, and inherent limitations in reclamation success potential. The seed mixes proposed by  
26 the operators were developed based on the site-specific conditions of the analysis area, the usefulness  
27 of species in rapid site stabilization, the species success in revegetation efforts and 4) current seed  
28 availability. Native plant species should be used, and final seed mixes applied in the revegetation effort  
29 should be designed in coordination with the BLM.

30 Seeding rates may be varied to enhance the probability for maintaining the natural balance of species.  
31 Watershed protection must be emphasized when reclaiming disturbed areas. Areas not exhibiting  
32 successful revegetation throughout the entire area disturbed by the project should be re-seeded until an  
33 adequate cover of vegetation is established.

### 1.6 Mulching

34 In sensitive sites where significant erosion is most likely to occur, the seeded access road/pipeline ROW,  
35 and staging areas should be mulched following seeding to protect the soil from wind and water erosion,  
36 raindrop impact, surface runoff, and invasive or non-native species invasion, and to hold the seed in  
37 place. The exposed surface of disturbed areas, including topsoil stockpiles, may be protected by placing  
38 crimped straw mulch, hydromulch, biodegradable plastic netting and matting, or biodegradable erosion  
39 control blankets.

1 All sensitive disturbed areas should be mulched immediately following seeding. Mulching materials  
2 should be certified weed free as defined by state or county lists. Hay mulch may be used, but it should  
3 be applied only if crimped into the soil. Straw mulch is more desirable than hay mulch because it is  
4 generally less palatable to wild horses, wildlife, and livestock. Additionally, there tends to be a higher  
5 risk of introducing invasive species with hay mulch such as smooth brome, timothy, orchardgrass and  
6 other minor species. The grant holder should maintain all disturbances noxious weed-free and relatively  
7 invasive weed-free for the life of the project thru implementation of a weed management plan.

8 Wherever utilized, mulch should be spread uniformly so that at least 75 percent of the soil surface is  
9 covered. If a mulch blower is used, the straw strands should not be shredded less than eight inches in  
10 length to allow effective anchoring. On slopes less than 30 percent, straw mulch should be applied by a  
11 mechanical mulch blower at a rate of two tons/acre after seeding. The mulch should be crimped into  
12 the soil surface using a serrated disc crimper.

13 On steeper slopes with highly erodible, shallow, rocky soils and/or on windswept areas with loose,  
14 unconsolidated materials, the above recommended measures may not be sufficient to reduce erosion to  
15 non-significant levels. The following measure should be considered by the operator and the BLM to  
16 stabilize such sites: incorporating a custom blend of seed into erosion control blankets.

### 1.7 Livestock Control

17 Livestock grazing should be monitored on and along all drill sites, access road, and pipeline ROWs.  
18 Should grazing negatively impact revegetation success, measures should be taken to immediately  
19 remove livestock from the newly reclaimed areas. Depending upon-site-specific evaluations, it may be  
20 necessary to temporarily fence off certain riparian areas and wetlands to prevent excessive livestock  
21 grazing and trampling to enhance drainage channel bank stabilization and overall revegetation success.  
22 Existing livestock control structures such as fences and cattle guards should be maintained in functional  
23 condition during all phases of the project. Where access requires the disruption of an existing fence, a  
24 cattle guard should be installed at the junction.

### 1.8 Reclamation Success Monitoring

25 Reclamation success should be based upon the objectives specified in the Rawlins RMP. Therefore,  
26 monitoring should be tied to those objectives. The actual monitoring procedures for quantitative and  
27 qualitative evaluations of reclamation success should be implemented as specified by the BLM or other  
28 authorizing agencies. Reclamation success should be monitored both in the short term (temporary  
29 reclamation) and in the long term (final reclamation). The Project Area should be monitored for a  
30 minimum of three years for invasive, non-native species invasion and establishment. Invasive, non-  
31 native species should not be allowed to establish at any time. At the third year of monitoring, presence  
32 of invasive species should be negligible. Noxious species are not allowed at any time.

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## *Appendix D*

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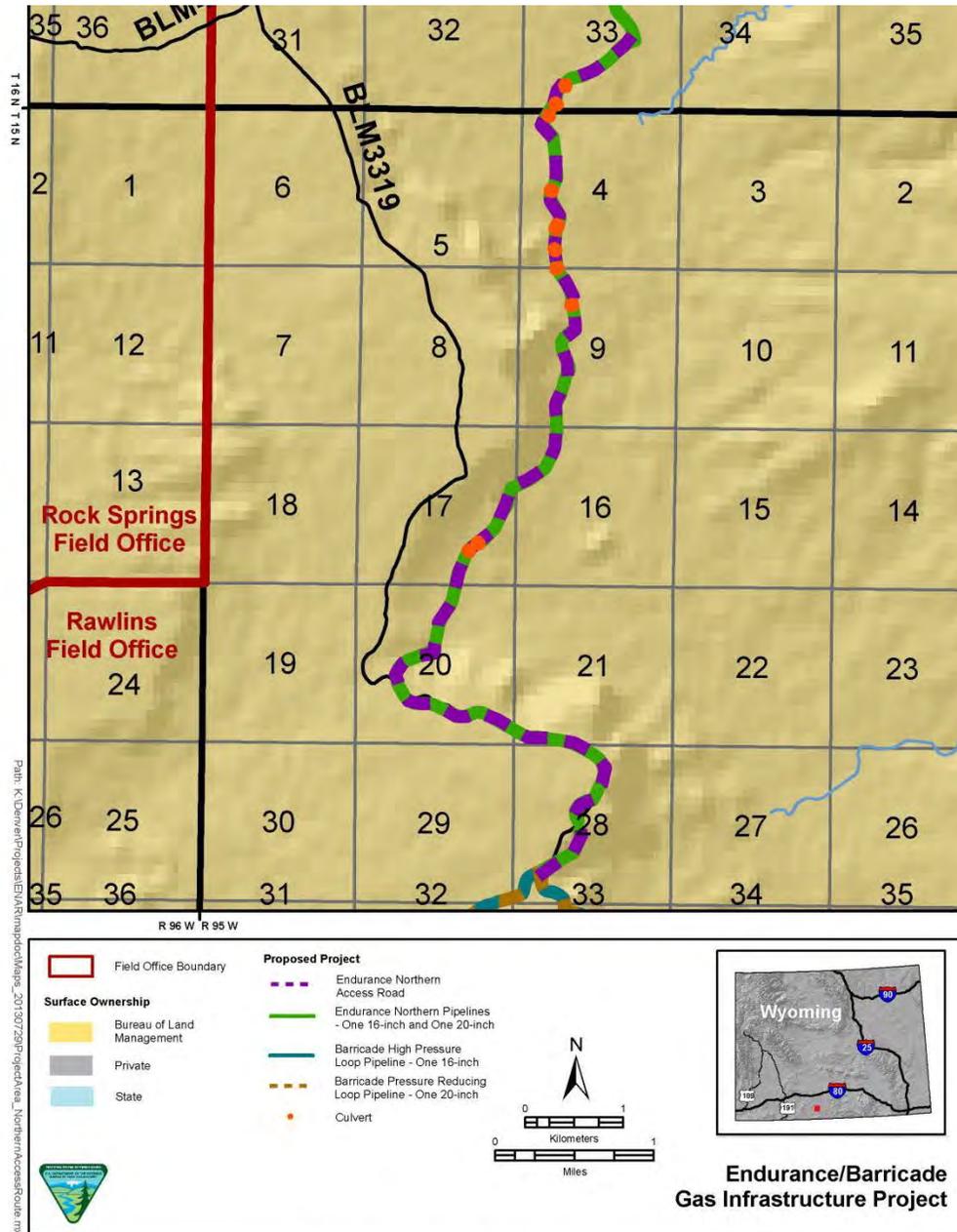
Project Area Mapping

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**FIGURE D-1.  
ENDURANCE  
NORTHERN  
ROADWAY AND  
PIPELINES**

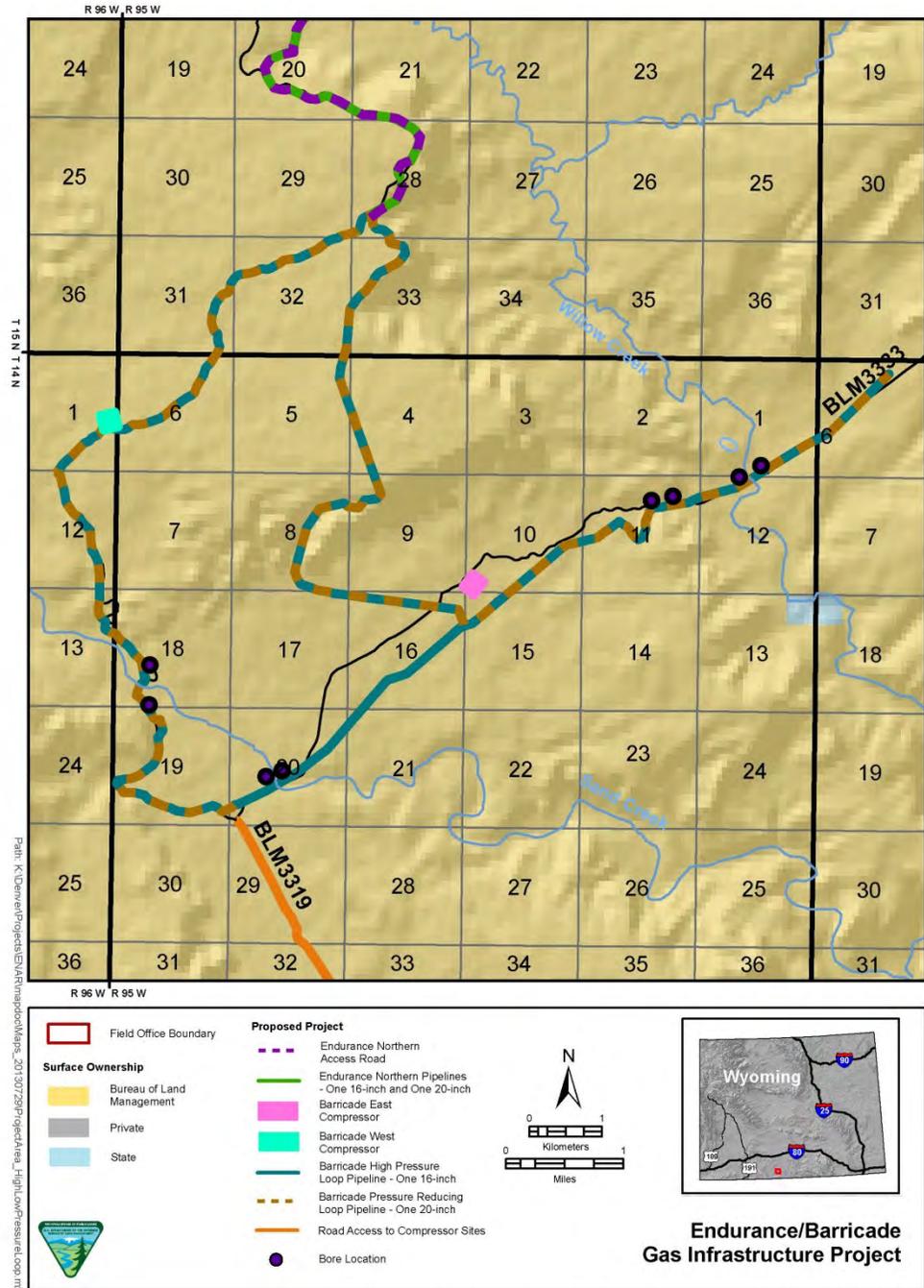
ACCESS



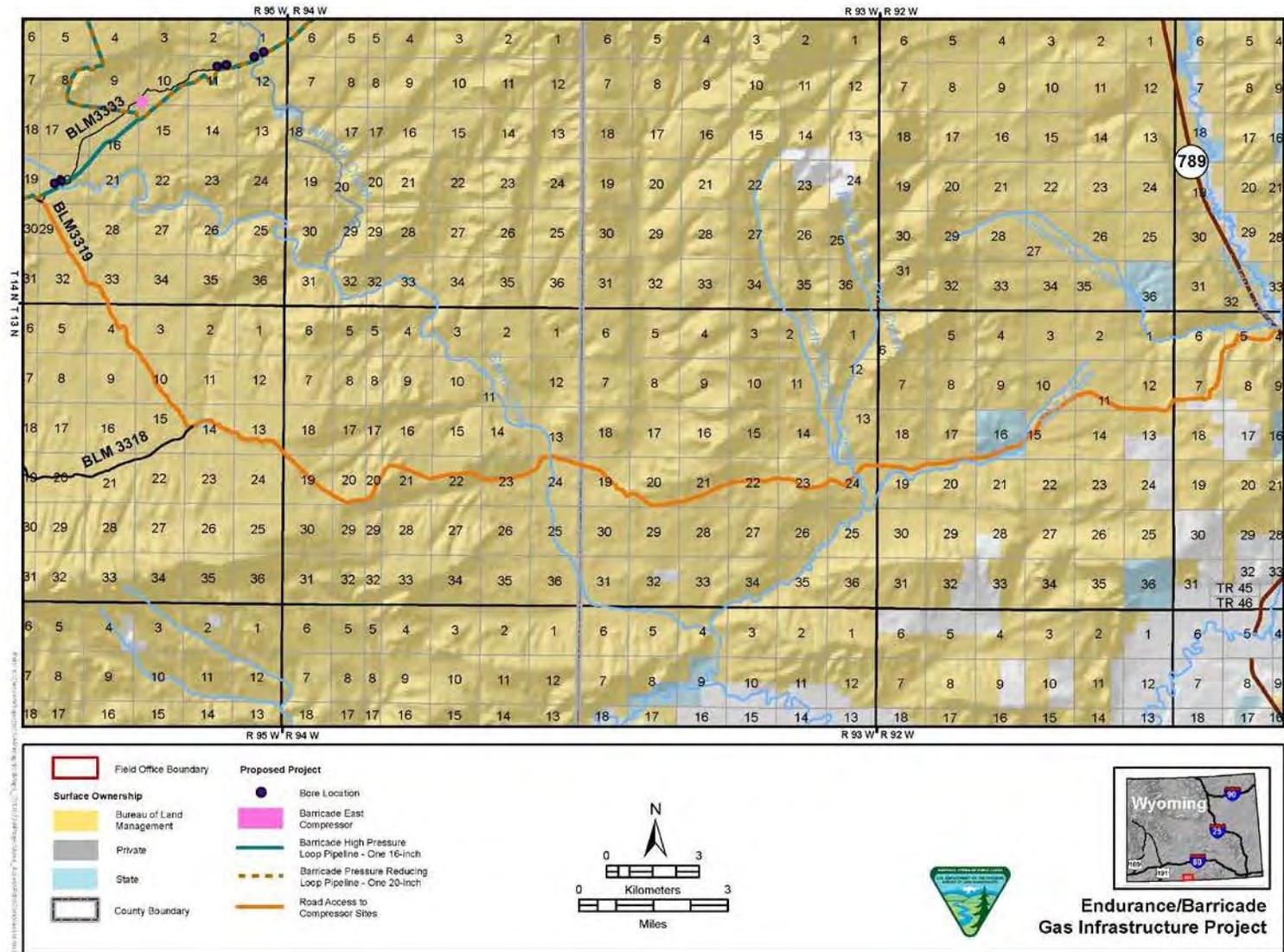
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Figure D-2.  
Barricade  
Pipeline Routes  
And Project  
Compressor Sites



1 **Figure D-3**  
 2 **Road ROW**  
 3 **Access to**  
 4 **Compressor**  
 5 **Sites**  
 6



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