BUREAU OF LAND MANAGEMENT
FARMINGTON FIELD OFFICE

ENVIRONMENTAL ASSESSMENT
NM- F010- 2011- 62

Project Sponsor

Huntington Energy LLC
Canyon Largo Unit #482
25N-7W-3
NMSF078881

1.0 Introduction

This site-specific analysis tiers into and incorporates by reference the information and analysis contained in the Farmington Proposed Resource Management Plan Final Environmental Impact Statement (PRMP/FEIS) (approved September 29, 2003), pursuant to 40 CFR 1508.28 and 1502.21. This document is available for review at the Farmington Field Office. This project EA addresses site-specific resources and/or impacts that are not covered within the PRMP/FEIS, as required by the National Environmental Policy Act of 1969 (NEPA), as amended (Pub. L. 91-90, 42 U.S.C. 4321 et seq.).

1.1 Purpose and Need

The purpose for the proposal is to define and produce (natural gas or oil) on one or more valid federal or Indian oil and gas mineral leases issued to the applicant by the BLM. The Mineral Leasing Act of 1920 (MLA), as amended [30 USC 181 et seq.], authorizes the BLM to issue oil and gas leases for the exploration of oil and gas and permit the development of those leases. The existing lease is a binding legal contract that allows development of the mineral by the holder. An approved Application for Permit to Drill (APD), issued by the BLM, would authorize the applicant to construct and drill the proposed well.

1.2 Conformance with Applicable Land Use Plan and Other Environmental Assessments

The proposed action is in conformance with the terms and the conditions of with the Farmington Resource Management Plan (RMP) as approved by the Record of Decision signed September 29, 2003, as required by 43 CFR 1610.5.

1.3 Federal, State or Local Permits, Licenses or Other Consultation Requirements

Non-point source pollution is an identified problem in the planning area that is directly associated with soil stability. Mandated by the Clean Water Act, efforts to reduce non-point source pollution through implementation of erosion control and management practices are an important part of BLM's management activities. Industrial activities disturbing land may require permit coverage through a National Pollution Discharge Elimination System (NPDES) storm water discharge. Depending on the acreage disturbed either a Phase I (five or more acres disturbance) or a Phase II (between one and five acres disturbance) permit may be required through a State 401 Certification. Additionally, an U.S. Army Corps of Engineers Section 404 permit for the discharge of dredge and fill materials may also be required. Operators are required to obtain all necessary permits and approvals prior to any disturbance activities.

Consultation with the U.S. Fish and Wildlife service as required by Section 7 of the Endangered Species Act was conducted as part of the Farmington PRMP/FEIS (Consultation No. 2-22-01-1-389) to address cumulative effects of RMP implementation. The consultation is summarized in Appendix M of the PRMP/FEIS. Site specific surveys for the proposed project indicate no need for additional Section 7 consultation.

Compliance with Section 106 responsibilities of the National Historic Preservation Act are adhered to by following the BLM – New Mexico SHPO protocol agreement, which is authorized by the National

Programmatic Agreement between the *BLM*, the *Advisory Council on Historic Preservation*, and the *National Conference of Council of State Historic Preservation Officers.*

2.0 Alternatives Including the Proposed Action

2.1 Alternative A - No Action

The BLM NEPA Handbook (H-1790-1) and the National Environmental Policy Act and associated Code of Federal Regulations state that for EAs on externally initiated proposed actions, the No Action Alternative means that the proposed activity would not take place. The No Action Alternative is presented for baseline analysis of resource impacts, and if selected, would deny the approval of the proposed application. Current land and resource uses would continue to occur in the proposed project area. No mitigation measures would be required.

2.2 Alternative B - Proposed Action

No modifications, or alternatives, to the original proposal received from the operator, were identified as the result of the pre-approval onsite inspection(s) (11/23/10). At the on-sites, all areas of proposed surface disturbance were inspected to ensure that potential impacts to natural resources would be minimized. Alternatives to the different aspects of the proposed action are always considered and would be applied as pre-approval changes, site specific mitigation and/or COAs, if they will alleviate or minimize environmental effects of the operator's proposal.

Huntington Energy LLC (Huntington) proposes to utilize an already constructed well pad, and access road in order to drill and develop federal minerals in the Basin Dakota formation. A pipeline will need to be constructed in order to transport the produced gas. The surface location for the proposed well is in the SE/SE of Section 3, T. 25 N., R. 7 W. . Access to the location will be gained by turning north at the Lybrook Plant for about 12 miles, then turning left at the Doggie Compressor Station and following existing oilfield roads to the proposed drilling site. This project is entirely on federal lands (federal surface and federal minerals).

Huntington Energy proposes to utilize an existing 230' X 300' well pad (1.58 acres) with an additional 50 foot construction buffer zone on all four sides of the proposed well. The proposed Canyon Largo Unit #482 well pad would not require any new disturbance. The Canyon Largo Unit #482 was previously constructed under an approved APD in 2005. The APD expired before the well was drilled. The construction buffer zones may be used to stockpile topsoil or vegetative material that will be utilized later during reclamation. If all construction zones are used the surface disturbance from the location would be approximately 3.03 acres. The pad was built along an existing access and there is no need for another access road.

Runoff will be diverted around the well site. A diversion ditch would need to be constructed to divert water around the pad.

If the well is productive an 203 ft pipeline will be needed to transport the gas that is produced. Construction of the line will consist of digging a trench with excavation equipment such as a wheel-ditcher or backhoe, laying pipe, and back filling the trench. A 4.5-inch carbon steel pipeline manufactured to American Petroleum Institute 5L specifications will be used. The wall thickness of the pipe will be .156". The pipe wall strength will be 42,000 pounds per square inch (PSI).

Production equipment used during the life of the well may include a 3-phase separator - dehydrator, a meter run, 400-barrel tanks and/or smaller fiberglass or galvanized tanks for water disposal. It is also likely that a compressor will be placed on the location during the life of the well. The installation of a compressor on the well location could occur for a number of different reasons. Most commonly, a compressor is used to increase the pressure of the produced gas from the lower pressure of the well to the higher pressure of the gas pipeline. This allows a low pressure flowing well to produce into a pipeline that is at a higher pressure. Another reason for installing a well compressor is to reduce the back-pressure against which a well produces. The reduction in back-pressure increases the flowing rate and

tubing velocity, which helps in removing fluids from the well bore. One other reason for installation of a compressor is for an operator owned gas-gathering system, which provides for centralized compression of multiple wells using one compressor rather than multiple wellhead compressors. In summary, the use of compressors provides for an increase in the economic life of the well, increases the ultimate recovery of gas from low-pressure reservoirs and prevents waste of the gas resource. Above ground equipment would be low profile and painted Juniper Green to blend in with the surrounding area.

A map for the immediate area of the proposed project is attached with the Application for Permit to Drill (APD). Appendix A

For a detailed description of design features and construction practices associated with the proposed action, refer to the APD (attached as Appendix A). Also see the subject APD for maps showing the proposed well locations and associated facilities described above.

Implementation of committed mitigation measures contained in the Conditions of Approval (COAs) also listed in Appendix B is incorporated and analyzed in this alternative.

Additionally, Huntington Energy LLC has committed to:

- Comply with all applicable Federal, State and Local laws and regulations.
- Obtain the necessary permits for the drilling, completion and production of these wells including water rights appropriations, the installation of water management facilities, water discharge permits, and relevant air quality permits.

Proposed Well Information: There is one (1) well(s) proposed as follows:

Well Name	Well Number	Township	Range	Section	Footages	Lease #	Lease Issue Date
Canyon Largo Unit	482	25-N	7-W	3	Surface: 950' FSL 1140' FEL	NMSF 078881	7/1/1948

County: Rio Arriba

Applicant: Huntington Energy LLC

Surface Owners: Bureau of Land Management

2.3 Alternative Considered But Not Analyzed in Detail:

No other alternatives were considered for this project due to the fact the well pad and access road has already been constructed. Moving the well in any direction will create new disturbance.

2.3.1 Stipulations, Conditions of Approval

Conditions of Approval and ROW special stipulations are attached in **Appendix B**

Site specific mitigation measures determined during the 5/25/10 onsite include:

- All pits will meet State of New Mexico, Oil Conservation Division (NMOCD) pit guidelines and requirements, NMAC 19.15.17.
- Excavated materials from the cuts shall be used on the fill portions of the location.
- Reclaimed slopes will be re-contoured to pre-construction topographical contours.
- A tight sheep fence shall be constructed around three sides of the pit during drilling and completion, and around the fourth side after the completion rig leaves the wellhead. The fences would remain until the pits are dried and backfilled,
- Cut material from the reserve and burn pits will be stockpiled on the location or used to construct the back-walls of the burn pit.
- All disturbed areas not needed for production will be seeded with the FFO specified seed mixture, using native species only,
- Above ground structures shall be painted to blend with the natural color of the landscape. Paint color will be Juniper Green Federal Standard 595a-17127.
- The access road will be upgraded to current BLM standards.
- Additional culverts for the access road and other necessary hydrologic BMPs will be installed as necessary for proper drainage and sediment management.
- Low profile equipment will be used.
- All cultural resource stipulations will be followed.
- Water will be diverted around pad.

3.0 Description of Affected Environment

Application to drill was received on 10/7/10. Field inspection of the proposed Canyon Largo Unit #482 project was conducted on 11/23/10 by SC Willems and David Moralas.

This section describes the environment that would be affected by implementation of the alternatives described in Section 2. Aspects of the affected environment described in this section focus on the relevant major resources or issues. Certain critical environmental components require analysis under BLM policy. These items are included below in Table 3.0. Following the table, only the aspects of the affected environment that are potentially impacted are described.

Table 3.0 – Potentially Impacted Resources
*Indicates Critical Elements of the Human Environment

Resources	Potentially Impacted	No Impact	Stipulations or Mitigation necessary	Not Present On Site	Comments included in EA text	BLM Evaluator
Air Quality *	x		x		x	Wirth
Water Quality *- Surface/Ground	x		x		x	Willems
Soils – Watershed – Hydrology	x		x		x	Wegerner
Floodplains *		X		x	x	Scott
Hazardous or Solid Waste Materials*		X		x	x	Wirth
Mineral Resources		X		x	x	Willems
Riparian Zones*/Wetlands *		X		x	x	Scott
Farmlands, Prime or Unique *		X		x	x	Willems

Livestock Grazing	x		x		x	Tafoya
Wild Horse and Burros		x		x	x	Willems
Vegetation, Forestry	x		x		x	Willems
Invasive, Non-native Species*	x				x	Dykes
Wildlife	x		x		x	Hansen
Special Status Species	x		x		x	Kendall
T & E Species *	x			x	x	Kendall
Visual Resources	x		x		x	Alleman
Recreation				x	x	Alleman
Congressional or Administrative Designations: *						
ACECs *		X		x	x	Copeland
Wilderness *		X		x	x	Alleman
Wild and Scenic Rivers *				N/A		
Cultural or Historical*	x		x		x	Gaudy
American Indian Religious Concerns *		X		x	x	Copeland
Paleontology		X		x	x	Landon
Transportation and Access		X		N/A		
Land Tenure, ROW, Other Uses		X		x		Willems
Environmental Justice*		X			x	Willems
Resources	Potentially Impacted	No Impact	Stipulations or Mitigation necessary	Not Present On Site	Comments included in EA text	BLM Evaluator

3.2 General Topography

The San Juan Basin is an asymmetrical syncline that extends from northwestern New Mexico into southwestern Colorado. Roughly circular in shape, it is approximately 200 miles long (north to south) and 130 miles wide, including its Colorado portion. The surfical geology of the San Juan Basin consists primarily of Quaternary to Cretaceous aged alluvium, sandstones, siltstones, shales, limestones, conglomerates and coal.

The well pad, access road and pipeline are located on top of Superior Mesa, just above Cibola Canyon. The general area is gentle rolling terrain with grassy sage flats and scattered pinion and juniper trees.

3.3 Air Resources

The proposed well is located in Rio Arriba County, New Mexico. Additional general information on air quality in the area is contained in Chapter 3 of the Farmington RMP/Environmental Impact Statement. In addition to the air quality information in the RMP cited above, new information about greenhouse gases (GHGs), and their effects on national and global climate conditions has emerged since this RMP was prepared. On-going scientific research has identified the potential impacts of GHG emissions such as carbon dioxide (CO_2) methane (CH_4); nitrous oxide (N_2O); water vapor; and several trace gases on global climate. Through complex interactions on a global scale, GHG emissions may cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by the earth back into space. Although GHG levels have varied for millennia (along with

corresponding variations in climatic conditions), industrialization and burning of fossil carbon sources have caused GHG concentrations to increase measurably, and may contribute to overall climatic changes, typically referred to as global warming.

The 2003 RMP discussed ozone in the Baseline Air Quality and Impact Assessment sections. The National Ambient Air Quality Standard (NAAQS) at the time was 0.084 ppm. In March of 2008, the Environmental Protection Agency (EPA) announced a new primary 8-hour standard of 0.075 ppm.

Increased development in the Four Corners area including a proposed new coal fired power plant, increased oil and gas development, and population growth are all contributing to air quality concerns. Many residents are concerned with potential health impacts from other pollutants. An overall haze and plume of nitrogen oxides can often been seen in the skies, which impact visibility, and there are concerns for the ecosystem due to deposition of mercury and nitrogen.

In addition, the Environmental Protection Agency (EPA), on October 17, 2006, issued a final ruling on the lowering of the National Ambient Air Quality Standard (NAAQS) for particulate matter ranging from 2.5 micron or smaller particle size. This ruling became effective on December 18, 2006, stating that the 24-hour standard for PM2.5, was lowered to 35 ug/m³ from the previous standard of 65 ug/m³. This revised PM2.5 daily NAAQS was promulgated to better protect the public from short-term particle exposure.

This EA incorporates an analysis of the contributions of the proposed action to GHG emissions, and a general discussion of potential impacts to climate.

Air quality and climate are the components of air resources, which include applications, activities, and management of the air resource. Therefore, the BLM must consider and analyze the potential effects of BLM and BLM-authorized activities on air resources as part of the planning and decision making process.

The Environmental Protection Agency (EPA) has the primary responsibility for regulating air quality, including seven nationally regulated ambient air pollutants. Regulation of air quality is also delegated to some states of which New Mexico is one. Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and terrain, and also includes applications of noise, smoke management, and visibility. Climate is the composite of generally prevailing weather conditions of a particular region throughout the year, averaged over a series of years. Greenhouse gases and the potential effects of GHG emissions on climate are not regulated by the EPA, however climate has the potential to influence renewable and non-renewable resource management.

3.4 Air Quality

The area of the proposed action is considered a Class II air quality area. A Class II area allows moderate amounts of air quality degradation. The primary sources of air pollution are dust from blowing wind on disturbed or exposed soil and exhaust emissions from motorized equipment.

Air quality in the area near the proposed well is generally good and is not located in any of the areas designated by the Environmental Protection Agency as “non-attainment areas” for any listed pollutants regulated by the Clean Air Act. During the summers of 2000 through 2002, ozone levels in San Juan County were approaching non-attainment. Additional modeling and monitoring was conducted by Alpine Geophysics, LLC and Environ International Corporations, Inc., in 2003 and 2004. Results of the modeling suggest the episodes recorded in 2000 through 2002 were attributable to regional transport and high natural biogenic source emissions. The model also predicted that the region will not violate the ozone NAAQS through 2007 and that the trends in the 8-hr ozone values in the region will be declining in the future. At the present time, the San Juan County is classified as in attainment with the revised federal ozone standard of 0.075 ppm. Rio Arriba County is unclassified because of there are no ozone monitors sited in Rio Arriba County.

Greenhouse gases, including carbon dioxide (CO_2) and methane (CH_4), and the potential effects of GHG emissions on climate, are not regulated by the EPA under the Clean Air Act. However, climate has the potential to influence renewable and non-renewable resource management. The EPA’s Inventory of US Greenhouse Gas Emissions and Sinks found that in 2007, total U.S. GHG emissions were over 7 billion metric tons and that total U.S. GHG emissions have increased by 17% from 1990 to 2007. Emissions

increased from 2006 to 2007 by 1.4 percent (99.0 Tg CO2 Eq.). The following factors were primary contributors to this increase: (1) cooler winter and warmer summer conditions in 2007 than in 2006 increased the demand for heating fuels and contributed to the increase in the demand for electricity, (2) increased consumption of fossil fuels to generate electricity and (3) a significant decrease (14.2 percent) in hydropower generation used to meet this demand (EPA 2009).

The levels of these GHGs are expected to continue increasing. The rate of increase is expected to slow as greater awareness of the potential environmental and economic costs associated with increased levels of GHG's result in behavioral and industrial adaptations.

3.4.1 Climate

Global mean surface temperatures have increased nearly 1.0°C (1.8°F) from 1890 to 2006 (Goddard Institute for Space Studies, 2007). However, observations and predictive models indicate that average temperature changes are likely to be greater in the Northern Hemisphere. Without additional meteorological monitoring systems, it is difficult to determine the spatial and temporal variability and change of climatic conditions, but increasing concentrations of GHGs are likely to accelerate the rate of climate change.

In 2007, the Intergovernmental Panel on Climate Change (IPCC) predicted a warming of about 0.2°C per decade for the next two decades, and then a further warming of about 0.1°C per decade. The National Academy of Sciences (2006) supports these predictions, but has acknowledged that there are uncertainties regarding how climate change may affect different regions. Computer model predictions indicate that increases in temperature will not be equally distributed, but are likely to be accentuated at higher latitudes. Warming during the winter months is expected to be greater than during the summer, and increases in daily minimum temperatures are more likely than increases in daily maximum temperatures.

A 2007 US Government Accountability Office (GAO) Report on Climate Change found that, "federal land and water resources are vulnerable to a wide range of effects from climate change, some of which are already occurring. These effects include, among others: 1) physical effects such as droughts, floods, glacial melting, and sea level rise; 2) biological effects, such as increases in insect and disease infestations, shifts in species distribution, and changes in the timing of natural events; and 3) economic and social effects, such as adverse impacts on tourism, infrastructure, fishing, and other resource uses." It is not, however, possible to predict with any certainty regional or site specific effects on climate relative to the proposed action and subsequent actions.

In New Mexico, a recent study indicated that the mean annual temperatures have exceeded the global averages by nearly 50 percent since the 1970's (Enquist and Gori 2008). Similar to trends in national data, increases in mean winter temperatures in the southwest have contributed to this rise. When compared to baseline information, periods between 1991 and 2005 show temperature increases in over 95 percent of the geographical area of New Mexico. Warming is greatest in the northwestern, central, and southwestern parts of the state.

3.5 Water Quality: Surface and Groundwater

Availability of water quality data, like stream-flow data, is largely limited to the perennial streams in the northern part of the San Juan Basin. The water quality of the perennial streams varies from upstream to downstream and is strongly influenced by the type of rock and soils with which the water has been in contact. In the upper reaches, the perennial streams have relatively low concentrations of dissolved solids. In the middle and lower reaches, the streams contain progressively more magnesium, calcium, sodium and sulfate concentrations and vary according to flow conditions.

Quality data for the ephemeral runoff south of the San Juan River are limited to only a few observations at sampling stations associated with the USGS coal hydrology program. Ephemeral flows are generally very poor quality water due to the highly erosive and saline nature of the soils, sparse vegetative cover and rapid runoff conditions that are characteristic of the area

There are no perennial water resources within the project area or immediate vicinity.

The San Juan Basin is underlain by sandstone aquifers and unconsolidated sand and gravel aquifers. The Colorado Plateaus Aquifers are sandstone while the Rio Grande Aquifer system is unconsolidated sand and gravel. The primary Colorado Plateaus Aquifers underlie the vast majority of the San Juan Basin are the Unita-Animas Aquifer and the Mesa Verde Aquifer.

The quality of groundwater in the San Juan Basin generally ranges from fair to poor. The Unita-Animas contains fresh to moderate saline water and the quality of the Mesa Verde is extremely variable. In general, areas of the aquifer that are recharged by infiltration from precipitation or surface water sources contain relatively fresh water.

Huntington has proposed to drill to a total depth of 7450 feet. An operation plan with the proposed casing program to protect the aquifers would be submitted with the APD.

3.6 Soils – Watershed – Hydrology

The soils in the San Juan Basin were formed primarily in two kinds of parent material: alluvial sediment and sedimentary rock. The alluvial sediment is material that was deposited in river valleys and on mesas, plateaus, and ancient river terraces. The material has been mixed and sorted in transport and has a wide range in mineralogy and particle size. Sedimentary parent material consists mainly of sandstone and shale bedrock. These shale and resistant sandstone beds form prominent structural benches, buttes and mesas bounded by cliffs.

Soils in the immediate project area are comprised of the Orlie fine sandy loam 1-8% slopes. The different characteristics of this soil type are listed below.

Table 3.16 – Orlie fine sandy loam

Character	Orlie Sandy Loam
Type	Loamy
Slope	1-8 percent
Depth	0-60 inches
Surface Runoff	Medium
Water erosion	Moderate
Soil Blowing	Moderate
Drainage Class	Well drained
Available Water cap.	Very High

Watershed – Hydrology

The San Juan Basin consists of broad mesas interspersed with many deep canyons with steep canyon walls, dry washes, entrenched narrow valleys, and alluvial fans and floodplains. Elevations range from approximately 4,800 feet, where the San Juan River flows into Utah, to approximately 8,800 feet near the Jicarilla Apache land, and near 7,300 feet near Lindrith, New Mexico. The planning area is divided into watersheds based on the Hydrologic Units (4th level) delineated by the USGS. Principally, the administrative area under the jurisdiction of the Farmington Field Office consists of five of these 4th level hydrologic watershed units. These watershed units are: (1) Middle San Juan, (2) Animas, (3) Upper San

Juan, (4) Blanco Canyon, and (5) Chaco. The action alternatives are within the Upper San Juan watershed.

The proposed project lies within the Tapicito Creek-Canyon Largo watershed, which is a sub watershed of the Outlet Canyon Watershed (HUC10). The watershed information comes from the GIS HUC12 data layer.

3.7 Floodplains

A review of the BLM GIS data on active and 100-year floodplains (derived from Federal Emergency Management Agency floodplain maps) indicates the action alternatives (alternatives B and C) are not located within any designated floodplains.

3.8 Hazardous or Solid Waste Materials

The Resource Conservation and Recovery Act (RCRA), passed in 1976, established a comprehensive program for managing hazardous wastes from the time they are produced until their disposal. U.S. Environmental Protection Agency (EPA) regulations define solid wastes as any "discarded materials" subject to a number of exclusions. A "hazardous waste" is a solid waste that is: (1) is listed by the EPA as a hazardous waste, (2) exhibits any of the characteristics of hazardous wastes (ignitability, corrosivity, reactivity, or toxicity or (3) is a mixture of solid and hazardous waste. A 1980–amendment to RCRA conditionally exempts from regulation as hazardous wastes, "drilling fluids, production waters, and other wastes associated with the exploration, development, or production of crude oil or natural gas". On July 6, 1988, EPA determined that oil and gas exploration, development and production (ED&P) wastes would not be regulated as hazardous wastes under RCRA. A simple rule of thumb was developed for determining if an ED&P waste is likely to be considered exempt or non-exempt from RCRA regulations: If (1.) the waste came from down-hole, or (2.) the waste was generated by contact with the oil and gas production stream during removal of produced water or other contaminants, the waste is most likely to be considered exempt by EPA. The Comprehensive Environmental Response Compensation and Liability Act (CERCLA) passed in 1980, deals with the release (spillage, leaking, dumping, accumulation, etc.) or threat of a release of hazardous substances into the environment. Despite many oil and gas constituent wastes being exempt from hazardous waste regulations, certain RCRA exempt contaminants could be subject to regulations as hazardous substances under CERCLA. The Oil Conservation Division (OCD) administers hazardous waste regulations for oil and gas activities in New Mexico.

No hazardous or solid waste materials were present at the proposed site. No hazardous chemicals or waste products will be used in association with this project.

3.9 Mineral Resources

Federal lands in the San Juan Basin are important sources of mineral materials for construction projects in the region, including sand and gravel, rock and stone and other fill materials. The Farmington Field Office Salable and Locatable Minerals program defines three level of acitivity: 1) casual use employing non-mechanized equipment, 2) notice level comprising less than five acres of surface disturbance, and 3) plan level comprising more than five acres of surface disturbance and heap leaching operations.

The proposed project is not located on any permitted surface mineral mining operation or free use area. The proposed project is located on an existing gas lease.

3.10 Riparian Zones/Wetlands

Under BLM's multiple use management, a variety of activities such as livestock grazing, timber harvest, mining, recreation, roads and utility corridors take place on public lands. These activities can affect the quality and health or riparian areas that are important to fish and wildlife. BLM guidance on the management of riparian areas has the objective of restoring and protecting those areas with the context of authorizing other land management activities. The goal of the FFO riparian monitoring plan is to document the progress toward achieving and then maintaining Proper Functioning Condition (PFC) while

being managed under the multiple use and adaptive management concepts outlined in the Riparian and Aquatic Habitat Management Plan (BLM 2000b, c).

The proposed project is not located within any riparian or wetlands habitat.

3.11 Farmlands, Prime or Unique

Prime farmland is determined by soils that have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, an acceptable level of acidity or alkalinity, an acceptable content of salt or sodium and few or no rocks. Its soils are permeable to water and air, not excessively eroded or saturated with water for long periods of time and either does not flood frequently during the growing season or is protected from flooding (NRCS 1997). Several of the watersheds within the Farmington Field Office boundaries have some soils meeting the definition of prime farmland, all of which must be irrigated to produce high quality crops.

The proposed project would not be located within farmlands or prime or unique lands.

3.12 Livestock Grazing

Livestock grazing is authorized by FLPMA, the Taylor Grazing Act of 1937 and the Public rangelands Improvement Act of 1978. The principle objective of the rangeland program is to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangeland to properly functioning condition; to promote the orderly use, improvement and development of the public lands.

There are 167 grazing allotments managed by the Farmington Field Office with 351 grazing authorizations that permit cattle, sheep and horse grazing within the resource area. Of the 351 grazing authorizations, 317 are permitted under section 3 of the Taylor Grazing Act. Of the 167 grazing allotments, there are four authorizations issued under section 15 of the Taylor Grazing Act to the Navajo Tribe that authorizes grazing on 35 allotments. There are an additional 30 section 15 authorizations that permit grazing on 30 allotments in the Lindrith, NM area.

The proposed project is located within the Superior Mesa Allotment # 5115. The Superior Mesa Grazing Allotment is operated from November 15th thru June 15th annually with a maximum of 3148 AUM's. This allotment consists of 90% public land.

3.13 Wild Horse and Burros

Bureau of Land Managements lands sit adjacent to the Jicarilla Wild Horse Territory (Northern Carson National Forest, Jicarilla District). In the administration of wild free-roaming horses and their environment (36 CFR 222.21) the Carson National Forest is responsible for "maintaining a thriving ecological balance considering wild horses an integral component of multiple use and regulating their population and accompanying need for forage and habitat in correlation with other uses…."

Some bands of the wild horse population move to the east onto BLM lands. Generally these horses move off the forest during the winter months and then move back onto the forest during the summer. The BLM, Farmington Resource Area Office and the Jicarilla District, Carson National Forest have a written memorandum of understanding that allows up to 23 wild horses to graze on BLM land as long as the horses migrate naturally.

There are no areas managed for wild horse or burros within the project area.

3.14 Vegetation, Forestry

The objective of the forestry program is to manage woodlands and timber stands for the production of forest products to support multiple uses and sustained yields. Multiple uses include recreation, timber sales, and harvesting of fuelwood. Timber sales are not active in the Farmington Field Office area. Restoration projects focus on improving the 7,400 acres of ponderosa pine through cutting or burning the encroaching pinon and juniper.

No mature trees would be removed to complete the proposed project.

3.15 Invasive, Non-native Species

The objective of the Farmington Field Office weed management program is to detect invasive plant species populations, prevent the spread of new invasive populations, manage existing populations using the tools of integrated weed management and eradicate invasive populations, using the safest environmental methods available. For all actions on public lands that involve surface disturbance or rehabilitation, reasonable steps would be required to prevent the introduction or spread of noxious weeds, including requirements for using weed seed–free hay, mulch and straw.

During the onsite inspection of the Canyon Largo Unit #482 there were no invasive or noxious weeds. Potential exists for non-native weeds to be present along the existing access road and pipeline ROW. BLM GIS data of known invasive or noxious weed populations indicate no known weed populations to be in or nearby the area of the action alternatives.

3.16 Wildlife

Wildlife management emphasizes the perpetuation of a biologically diverse plant and animal community. Priority wildlife management activities conducted in the Farmington Field Office include big game management and surveys to determine game population size and health. The Farmington Field Office also determines the numbers, habitat needs and distribution on non-T&E bird species including migratory songbirds. The protection and enhancement of wildlife habitat is accomplished through an aggressive program of habitat improvement projects, designation of SDAs with wildlife friendly management prescriptions.

There are two dominant habitat types encompassing the area surrounding the site of the proposed action, they are; pinyon/pine with an understory of antelope bitterbrush and perennial grasses, and Wyoming big sagebrush with an understory of perennial grasses and forbs. The area is characterized by relatively extreme topographic variation with mesas and deep canyons having near vertical sides. Endemic wildlife species include large ungulates such as mule deer, elk and an occasional Barbary sheep. Predator species such as the coyote, bobcat and mountain lion are common as are small mammals such as the black-tailed jackrabbit and various rodent species.

The proposed project is not located in a Special Designated Area (SDA). Under the current RMP there are no seasonal restrictions placed on the immediate project area. Standard mitigation measures to protect or restore wildlife habitat can be found in the Farmington Resources Management Plan (December 2003) pages 2-25 and 2-26.

3.17 Threatened & Endangered Species/Special Status Species

According to the USFWS, there are eight (8) federally listed threatened, endangered or candidate species with the potential to occur within Rio Arriba County (see Table 2.)

No federally-listed species were identified during the field survey. Table 2 provides an evaluation of the potential for these species to occur in the proposed project and action area.

Table 3.17.1 Habitat Descriptions and Presence of Threatened, Endangered, and Candidate species.

Species Name	Federal Status	Habitat	Presence
Black-footed ferret (*Mustela nigripes*)	Endangered	Typically includes prairie dog colonies larger than 80 hectares in size	No prairie dog colony is located within the proposed project area (PPA)

Southwestern Willow Flycatcher (*Empidonax traillii extimus*)	Endangered	Breeds in riparian habitats where dense growth of willows are present	No potential habitat in PPA due to lack of riparian areas
Interior least tern (*Sterna antillarum*)	Endangered	Found along rivers with broad exposed sandbars and lakes with nearby salt flats.	No perennial water sources, flowing rivers, or marshes exist within the PPA
Bald Eagle (*Haliaeetus leucocephalus*)	Threatened	Rivers, large lakes; in open country typically close to water; nests in tall trees or cliffs	No potential habitat in PPA due to lack of perennial water resources and tall trees.
Mexican Spotted Owl (*Strix occidentalis lucida*)	Threatened	Most nests are in caves or on cliff ledges in steep- walled canyons and mixed conifer forests	No potential habitat in PPA due to a lack of mixed coniferous forests, steep walled canyons, caves and cliff edges
Boreal western toad (*Bufo boreas boreas*)	Candidate	Areas near springs, woodlands, meadows and streams	No potential habitat in PPA due to a lack of springs, woodlands, meadows and streams
Mountain plover *(Charadrius montanus)*	Candidate	Semi desert, grasslands, open arid areas, bare fields, breeds in open plains or prairie.	Proposed action area does not contain flat, open grasslands for suitable habitat.
Yellow-billed cuckoo (*Coccyzus americanus*)	Candidate	Breeds in dense riparian shrubland	No potential habitat in PPA due to lack of riparian areas

3.17.2 BLM/FFO Special Management Species

In accordance with BLM Manual 6840, the Farmington Field Office of the Bureau of Land Management (FFO) has prepared a list of special management species to focus species management efforts toward maintaining habitats under a multiple use mandate, called FFO Special Management Species (SMS). The BLM manages certain sensitive species not federally listed as threatened or endangered in order to prevent or reduce the need to list them as threatened or endangered in the future. The authority for this policy and guidance is established by the Endangered Species Act of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and Department of Interior Manual 235.1.1A. FFO SMS are listed in table below.

There are no known active raptor nests near the project area and none were observed during the onsite.

Table 3.17.3: Special Management Species of the BLM/FFO

Species Name	Conservation Status		Habitat Associations	Potential to Occur in the Proposed Action Area
	BLM/ FFO	New Mexico		
Birds				
Golden Eagle (*Aquila chrysaetos*)	SMS		In the West, mostly open habitats in mountainous, canyon terrain. Nests primarily on cliffs and trees.	Proposed action area contains suitable habitat for foraging and nesting.

Species Name	Conservation Status		Habitat Associations	Potential to Occur in the Proposed Action Area
	BLM/ FFO	New Mexico		
Ferruginous hawk *(Buteo regalis)*	SMS		Open, arid country or grasslands with piñon-juniper plant associations. Nests on ledges or cliff sites, may use the ground.	Proposed action area contains suitable habitat for foraging.
Prairie falcon *(Falco mexicanus)*	SMS		Arid, open country, grasslands or desert scrub, rangeland; nests on cliff ledges, trees, power structures.	Proposed action area contains suitable habitat for foraging and nesting.
Yellow-billed cuckoo (*Coccyzus americanus*)	SMS		Low to mid-elevation riparian woodlands, deciduous woodlands, and abandoned farms and orchards. Rare in the San Juan River valley.	Proposed action area does not contain riparian areas for suitable habitat.
American peregrine falcon (*Falco peregrinus anatum*)	SMS	NM-T	Open country near lakes or rivers with rocky cliffs and canyons. Tall city bridges and buildings also inhabited.	Proposed action area contains suitable habitat for foraging and nesting.
Bald eagle (*Haliaeetus leucocephalus)*	SMS	NM-T	Near lakes, rivers and cottonwood galleries. Nests near surface water in large trees. May forage terrestrially in winter	Proposed action area contains suitable habitat for foraging during the winter months.
Burrowing owl *(Athene cunicularia)*	SMS		Associated with prairie dog towns. In dry, open, short-grass, treeless plains	Proposed action area does contain two known nests. There are no known prairie dog colonies within allotments.
Plants				
Brack's hardwall cactus (*Sclerocactus cloveriae* ssp. *brackii*)	SMS	NM-E	Sandy clay of the Nacimiento Formation in sparse shadscale scrub (5,000-6,000 ft).	Nacimiento formation does not occur in the proposed action area.
Aztec gilia (*Aliciella formosa*)	SMS	NM-E	Salt desert scrub communities in soils of the Nacimiento Formation.	Nacimiento formation does not occur in the proposed action area.

3.17.4 Birds of Conservation Concern

Executive Order 13186 dated January 17, 2001 calls for increased efforts to more fully implement the Migratory Bird treaty Act of 1918. In keeping with this mandate, the BLM/FFO has consulted the Partners in Flight Bird Conservation Plan for the State of New Mexico and the U.S. Fish & Wildlife Service's list of Birds of Conservation Concern. A review of thesedocuments, specifically as they pertain to the Colorado Plateau physiographic area, indicates there are seven (7) "priority" avian species that utilize the piñon-juniper habitat type and seven (7) species that utilize the Great Basin desert shrub habitat type. The selected species have a known distribution in the FFO area and may be affected by various types of perturbations. These species and a brief assessment of the effects of the Proposed Action on their habitat are as follows:

Table 3.17.5 Migratory Birds with Potential to Occur in the Proposed Action Area

SPECIES	HABITAT ASSOCIATIONS	EFFECTS	EFFECT RATING-

Loggerhead shrike (*Lanius ludovicianus)*	Relatively xeric habitats dominated by shrubs and grasses.	Reduced ground cover for nesting, potentially less prey	Low
Sage thrasher *(Oreoscoptes montanus)*	Sagebrush plains	May be some loss of mature sage/nesting habitat.	Low
Sage Sparrow *(Amphispiza belli)*	Sagebrush-grassland habitat	Brush removal would reduce nesting habitat	Low
Black-*throated sparrow (Amphispiza bilineata)*	Xeric habitats dominated by open shrubs with areas of bare ground.	Little conflict anticipated.	Low
Burrowing Owl *(Athene cunicularia)*	Open grasslands or desert scrub. Presence of suitable nest burrow is critical prerequisite (often prairie dog burrows).	Ground disturbance may reduce and impact nesting habitat.	Low
Bendire's Thrasher (*Toxostoma bendirei)*	Brushy desert, especially areas of tall vegetation, cholla cactus, creosote bush and yucca.	Little conflict anticipated.	Low
Ash-throated Flycatcher (*Myiarchus cinerascens)*	Arid and semiarid scrub, open woodland, and riparian woodlands.	Little conflict anticipated.	Low
Gray vireo *(Vireo vicinior)*	Found in desert scrub, mixed juniper or piñon pine and oak scrub associations, and chaparral, in hot, arid mountains and high plains scrubland.	Nests in juniper; reduction of juniper would decrease potential nesting habitat.	Low
Gray flycatcher (*Empidonax wrightii)*	Prefers open piñon-juniper forest, often with interspersed ponderosa, with an understory of shrubs.	Utilizes piñon/juniper and sometimes sage for nesting.	Low
Juniper titmouse *(Baeolophus ridgwayi)*	Warm, dry open woodland, especially juniper woodlands.	Secondary cavity nester.	Low
Piñon jay (*Gymnorhinus cyanocephalus)*	Found in piñon-juniper woodland, sagebrush, scrub oak, and chaparral communities, and sometimes in pine forests.	Colony nester in piñon. Loss of piñon may affect jays.	Low
Cassin's kingbird (*Tyrannus vociferans)*	Found in open country with scattered trees or open woodlands including piñon-juniper.	Nests/forages in piñon /juniper.	Low
Black-throated gray warbler *(Dendroica nigrescens)*	Found in pine and mixed oak-pine woodlands.	Nests in piñon /juniper.	Low

3.18 Visual Resources

Visual Resource Management (VRM) on public lands is conducted in accordance with BLM Handbook 8410 and BLM Manual 8411. Further details of the Farmington Field Office VRM Program are contained on pages 2-9 to 2-10 and 3-61 to 3-63 of the Farmington PRMP/FEIS.

The proposed project located within an area designated as VRM Class III which allows for minor modifications that should not dominate the viewshed of the casual observer.

3.19 Recreation

Objectives of the Farmington Field Office outdoor recreation program are to ensure the continued availability of public land for a diverse array of quality resource-dependent outdoor recreation opportunities. A broad range of outdoor recreation opportunities such as backpacking, camping, sightseeing, fishing, boating, picnicking, horseback riding, wildlife viewing, OHV use, mountain biking and motorcycling is provided for, in an attempt to meet varying public needs. The Farmington Field Office has set aside several areas for special use and manages them as Specially Designed Areas (SDA). Areas located outside of SDAs are extensive recreation management areas (ERMAs) and are managed to maintain a freedom of recreational choices with a minimum of regulatory constraints.

The proposed project is not located in any recreation SDAs.

3.20 Congressional or Administrative Designations/ Areas of Critical Environmental Concern (ACECs)

There are 649,901 acres of areas with special designations and management prescriptions designed to protect specific resource values. Included are 79 cultural resources ACEC's, one ACEC for geology, one recreation ACEC, and four ACEC's for threatened or endangered species. There are two Research Natural Areas, on Wilderness Study Area and one Wilderness Area and 30 other areas designated to maintain special management considerations.

The proposed action would not be located within any ACEC presently designated in the RMP. The Superior Mesa ACEC is located over 700 feet to the north.

3.21 Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers within the Farmington Field Office.

3.22 Wilderness Values

Currently the Farmington Field Office manages the 44,608 acre Bisti/De-na-zin Wilderness Area and the 6,653 acre Ah-shi-sle-pah Wildernes Study Area. The Bisti/De-na-zin Wilderness Area is managed under the prescriptions set forth in the Wilderness Act of 1964, the enabling legislation and BLM Wilderness Management Regulations (43 CFR 6300). The Ah-shi-sle-pah Wilderness Study Area would be managed as above unless the area is released from further wilderness consideration, then the area would continue to be managed as an ACEC to protect important paleontological, scenic and recreational values.

The proposed action would not be located in a Wilderness Area.

3.23 National Landscape Conservation System (NLCS) Units

The Bisti/DE-NA-ZIN and the AH-SHI-SLE-PAH Wilderness Study Area are the only two areas in the Farmington district that falls under the National Landscape Conservation System (NLCS). The proposed project would not be within either of the NLCS Units.

3.24 Cultural or Historical Values

The project is located within the archaeologically rich San Juan Basin of northwestern New Mexico. In general, the prehistory of the San Juan Basin can be divided into five major periods: PaleoIndian (ca. 10000 B.C. to 5500 B.C.), Archaic (ca. 5500 B.C. to A.D. 400), Basketmaker II-III and Pueblo I-IV periods (A.D. 1-1540), and the historic (A.D. 1540 to present), which includes Native American as well as later Hispanic and Euro-American settlers. Detailed description of these various periods and select phases within each period is provided in the Bureau of Land Management Farmington Field Office Final Environmental Impact Statement and Resource Management Plan (2003) and will not be reiterated here. Additional information is also included in an associated documented, Cultural Resources Technical Report (CRTR; SAIC 2002).

The BLM FFO has categorized variability in archeological sites by major time period, cultural affiliations/components, average size, and occurrence of features in each of the 20 watersheds within the BLM FFO's jurisdiction (BLM 2003:3-88). The Proposed Action is within the Largo watershed. Based on the CRTR (SAIC 2002) a total of 2051 sites representing 2815 temporal/cultural components have been documented within the watershed. Of the 19 categories of sites defined based on temporal/cultural affiliation, 17 are represented. Lacking in the watershed are sites attributed to Paleo-Indian and Ute occupations. The most frequently occurring cultural affiliations recorded are Anasazi (aka pre-Columbian Pueblo) and Navajo**.** Features common to these sites include pithouses, middens, forked-pole hogans, and rock art.

A BLM Class I literature review was conducted by prior to the cultural resources inventory of the Proposed Action. There were no documented cultural sites within ¼ mile of the proposed action.

The entire area of potential affect for the Proposed Action was surveyed by San Juan College at a BLM Class III level (100%) and an inventory report was prepared and submitted to the BLM (2005-SJC-132; BLM 2006(I)147F) in accordance with the *Procedures for Performing Cultural Resources Fieldwork on Public Lands in the Area of New Mexico BLM Responsibilities* (BLM 2005). The Class III inventory identified no cultural resource sites.

3.25 American Indian Religious Concerns

Traditional Cultural Prosperities (TCPs) is a term that has emerged in historic preservation management and the consideration of Native American religious concerns. TCPs are places that have cultural values that transcend, for instance, the values of scientific importance that are normally ascribed to cultural resources such as archaeological sites. The National Park Service (Parker and King 1998:1) has defined TCPs as follows:

> A traditional cultural property can be defined generally as one (a property) that is eligible for the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. (National Register Bulletin 38)

Native American cultural associations are the "communities" most likely to identify TCPs, although TCPs are not restricted to this group. Some TCPs are well known, while others may only be known to a small group of traditional practitioners, or otherwise only vaguely known.

There are several pieces of legislation or Executive Orders that should be considered when evaluating Native American religious concerns. These govern access and use of scared sites, possession of sacred items, protection and treatment of human remains, and the protection of archaeological resources ascribed with religious or historic importance. These include the following:

- The American Indian Religious Freedom Act of 1978 (AIRFA; 42 USC 1996, P.L. 95-431 Stat. 469).
    - ✓ Possession of sacred items, performance of ceremonies, access to sites

- Executive Order 13007 (24 May 1996).
    - ✓ Access and use of sacred sites, integrity of sacred sites
- The Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; 25 USC 3001, P.L. 101-601).
    - ✓ Protection, ownership, and disposition of human remains, associated funerary objects, unassociated funerary objects, sacred objects, or objects of cultural patrimony
- The Archaeological Resources Protection Act of 1979 (ARPA; 16 USC 470, Public Law 96-95).
    - ✓ Protection or archaeological resources on Federal and Indian lands

For the Proposed Action, identification of TCPs were limited to reviewing existing published and unpublished literature (e.g. Valkenburgh 1941, 1974), and the site-specific cultural resources survey report conducted for the Proposed Action. In addition, the BLM's cultural resources program was contacted for information regarding the presence of TCPs identified through ongoing BLM tribal consultation efforts. The proposed action does not lie within any identified TCP.

3.26 Paleontology

The BLM uses the Potential Fossil Yield Classification (PFYC) system to identify areas with a high potential to produce significant fossil resources (IM 2008-009). This system has ranked all lands within the FFO management area as a Class 5 designation. Class 5 designations are described as being Very High Potential paleontological resource areas, thus requiring an assessment at the project level (IM 2008-011). The proposed project area is located within the paleontological rich area of the San Juan Basin of northern New Mexico.

Paleontological resource protection objectives include facilitating research and collection on public lands, use for education and recreation, protecting scientifically valuable resources that may be in conflict with other land and resource uses, and protecting scientifically valuable fossils as required by law.

The Tertiary Formations found within the proposed project area is known to contain any paleontological resources. Fossils are known to occur within or proximate to the proposed project area.

3.27 Transportation and Access

The proposed action (alternative B) is not known to impede upon existing or proposed road and transportation project. Analysis was conducted in the final PRMP/FEIS (BLM2003a).

3.28 Land Tenure, Rights-of-Way (ROWs), Other Realty Uses, Issues, or Concerns

A review of the Master Title Plats (MTP's) of the proposed action (alternative B) revealed no existing or proposed right of ways or other restricted land areas would be encroached upon.

3.29 SociaEconomic/Environmental Justice

Executive Order 12898 requires federal agencies to assess projects to ensure there is no disproportionately high or adverse environmental, health, or safety effects on minority and low-income populations. Minorities comprise a large proportion of the population residing inside the boundaries of the Farmington Field Office (see pages 3-106 to 3-107 of the PRMP/FEIS for more details on ethnicity and poverty rates).

3.30 Public Health and Safety

All worker safety is governed by Occupational Safety and Health Administration (OSHA) safety laws and regulations. Worker safety incidents must also be reported to the BLM under the procedures of Notice to Lessee (NTL)-3A. Pipeline safety regulations are administered by OSHA as well as Department of Transportation (DOT) regulations. Pipeline safety regulations (49 CFR Parts 190 and 192) govern design, construction and operation of gas transmission lines. Any incidents involving DOT-regulated pipelines must be reported under these regulations (District 2003a).

Most substances and wastes generated at oil and gas facilities are exempt from regulation under the Resource Conservation and Recovery Act (1976). The Environmental Protection Agency (EPA) and DOT regulate materials associated with well construction and production activities that are classified as hazardous. When significant amounts of chemicals are stored on-site, governmental agencies will be notified as required under the Emergency Planning and Community Right to Know Act (1986). The notification of releases such as natural gas, natural gas liquids, and petroleum, outside the facility site is required under the Comprehensive Environmental Response Compensation and Liability Act, 1980 (CERCLA) and under BLM NTL-3A. The well location must have an informational sign, as directed under 43 CFR 3160.

Additional hazards to the general public in the action area include safety hazards associated with increased traffic during the construction of the proposed or alternative well. General hazards around producing oil and gas fields such as accidental pipeline failures and moving equipment like pump jacks are potential/present in the action area. Hydrogen sulfide gas is not known to be or expected to be a problem at either Alternative B or C proposed sites.

4.0 Environmental Consequences

No Action Alternative

Under the No Action Alternative, the proposed wells would not be drilled. There would be no new impacts from oil and gas production to the resources. The No Action Alternative would result in the continuation of the current land and resource uses in the project area. This alternative will not be evaluated further in Chapter 4.

Alternative B - Proposed Action

Under **Alternative B,** the Proposed Action, the well would be drilled as proposed.

Table 4.0 Summary of Disturbance

Facility	Number	Feet of New Disturbance	Acreage of New Disturbance	Duration of Disturbance
Well Pad	1	330’x400’	3.03	Long Term
Gathering/Meter Facilities	1		0	Long Term
Compressors	1		0	Long Term
Pipeline Within Existing Disturbance	0	0	0	Short Term
Pipeline With New Disturbance	1	203’x 20’	0.09	Short Term

New Access	0	0	0	Long Term
Existing Access	1	0	0	Long Term

Short-term impacts are those which can be stabilized or mitigated rapidly and without long-term effects. Long-term impacts are those that would substantially remain for many years or for the life of the project (see Farmington PRMP/FEIS p.4-1)

4.1 General Topography

The well pad, access road and pipeline are located on top of Superior Mesa, just above Cibola Canyon. The general area is gentle rolling terrain with grassy sage flats and scattered pinion and juniper trees.

4.1.1 Direct and Indirect Effects Topography

The proposed project would disturb approximately 3.12 acres of land. No prominent topographical features would be removed, obscured or disturbed.

4.1.2 Mitigation

The interim cut and fill slope shall grade as close to the original contour as possible. The project location and access road will be closed and re-contoured as close to original contour as possible during the final abandonment of the well.

4.2 Air Resources

4.2.1 Direct and Indirect Effects Air Quality

Air quality would temporary be directly impacted with pollution from exhaust emissions, chemical odors, and dust that would be caused by the motorized equipment used to construct the access road, well pad, and by the drilling rig that will be used to drill the well. Dust dissemination would discontinue upon completion of the construction phase of the access road and well pad. Air pollution from the motorized equipment would discontinue at the completion of the drilling phase of the operations. The winds that frequent the northwestern part of New Mexico generally disperse the odors and emissions. The impacts to air quality would be greatly reduced as the construction and drilling phases are completed. Other factors that currently affect air quality in the area include dust from livestock herding activities, dust from recreational use, and dust from use of roads for vehicular traffic.

Over the last 10 years, the leasing of Federal oil and gas mineral estate in Farmington Field Office has resulted in an average total of approximately 450 to 500 wells drilled on federal leases annually. These wells would contribute an incremental increase to the total emissions (including GHG's) from oil and gas activities in New Mexico.

Potential impacts of development could include increased air borne soil particles blown from new well pads or roads, exhaust emissions from drilling equipment, compressors, vehicles, and dehydration and separation facilities, as well as potential releases of GHG, NOx and VOCs during drilling or production activities. The amount of increased emissions cannot be quantified at this time since it is unknown how many wells might be drilled, the types of equipment needed if a well were to be completed successfully (e.g. compressor, separator, dehydrator), or what technologies may be employed by a given company for drilling any new wells. The degree of impact will also vary according to the characteristics of the geologic formations from which production occurs.

The reasonable and foreseeable development scenario developed for the Farmington RMP demonstrated 522 wells would be drilled annually for federal minerals. Current APD permitting trends within the field office confirm that these assumptions are still accurate. This level of exploration and production would contribute a small incremental increase in overall hydrocarbon emissions, including GHGs, NOx, and VOCs released into the planet's atmosphere. When compared to total national or global emissions, the

amount released as a result of potential production from the proposed well would not have a measurable effect on climate change due to uncertainty and incomplete and unavailable information; therefore is not possible to determine the effects on climate change on a regional, national, or global scale.

Consumption of oil and gas developed from the proposed well is expected to produce GHGs, NOx and VOCs. Consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demography, and weather or climate. Regional and global transportation, metropolitan traffic, fires (including wildfires, controlled burns and use of domestic fire places), and power plant emissions from the west are all parts of the equation. Regional air quality modeling conducted for the Northern San Juan Basin Coal Bed Methane FEIS Project in August 2006, determined that potential cumulative visibility impacts to Federal PSD Class I Areas (Mesa Verde National Park and the Wenimuche Wilderness Area) could occur at some unspecified time in the future

The NAAQS are set for the most common and widespread pollutants. The standards are concentrations of air pollution above which the EPA has determined that serious health and welfare consequences could occur. If the concentrations are below the NAAQS, there are no expected adverse effects to humans and the environment.

4.2.2 Climate

The assessment of GHG emissions and climate change is in its formative phase. It is currently not feasible to know with certainty the net impacts from the proposed action on climate. The inconsistency in results of scientific models used to predict climate change at the global scale coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. When further information on the impacts to climate change is known, such information would be incorporated into the BLM's planning and NEPA documents as appropriate

4.2.3 Mitigation

The FFO has been a participant of the Four Corners Air Quality Task Force (FCAQTF) since its inception back in 2002 when it was known as the Four Corners Ozone Task Force. Because of the unanswered questions raised by these modeling efforts, the FCAQTF has continued to look at air quality issues in the Four Corners region. The FCAQTF is comprised of a broad base of representatives including federal, state, Indian, and local governments, as well as industry, interest groups, and concerned community members. The FCAQTF has several working groups, which worked on the development of a mitigation options report (completed December 2007), to serve as a resource and guide to the regulatory agencies. The responsible agencies may use the report as the basis for developing air quality management plans for the region. This may include developing new and revising existing regulations, supporting new legislation, developing new outreach and information programs, and developing and/or expanding voluntary programs for emission reductions.

Additional air quality modeling conducted since completion of the 2003 FEIS/RMP and provisions in the ROD for the FEIS/RMP provide for applications of additional emission controls if requested by the NMAQB. Based on this modeling, the NMAQB issued an interim directive that all newly issued APDs limit compressor emissions to no more than 2 grams per horsepower hour of N_2O for engines of 300 horsepower or less. The FFO has complied with this directive through a condition of approval (COA) which has been in effect since August 1, 2005. To date, NMAQB has made no other such requests.

Currently, development on Federal minerals in New Mexico's San Juan Basin is at a lower level than forecast in the Reasonable Foreseeable Development (RFD) Scenario prepared in 2001 for the FFO EIS/RMP. The impacts forecast by the RFD are still valid. At the time the 2003 EIS/RMP was written, ozone readings did not represent a violation of the NAAQS for this pollutant. The New Mexico Environment Department Air Quality Bureau has determined that the 2007 – 2009 ozone design value for San Juan County is 0.070 ppm. The design value for the county must be greater than the revised 8-hour ozone standard of 0.075 ppm for a nonattainment designation.

The EPA's inventory data describes "Natural Gas Systems" and "Petroleum Systems" as the two major categories of total US sources of GHG gas emissions. The inventory identifies the contributions of

natural gas and petroleum systems to total CO2 and CH4 emissions (natural gas and petroleum systems do not produce noteworthy amounts of any of the other greenhouse gases). Within the larger category of "Natural Gas Systems", the EPA identifies emissions occurring during distinct stages of operation, including field production, processing, transmission and storage, and distribution. "Petroleum Systems" subactivities include production field operations, crude oil transportation and crude oil refining. Within the two categories, the BLM has authority to regulate only those field production operations that are related to oil and gas measurement, and prevention of waste (via leaks, spills and unauthorized flaring and venting).

The BLM's regulatory jurisdiction over field production operations has resulted in the development of "Best Management Practices" (BMPs) designed to reduce impacts to air quality by reducing all emissions from field production and operations. Typical measures may include: flare hydrocarbon and gases at high temperatures in order to reduce emissions of incomplete combustion; require that vapor recovery systems be maintained and functional in areas where petroleum liquids are stored; placement of compressors engines 300 horsepower or less must have NOx emissions limited to 2 grams per horsepower hour; revegetate areas of the pad not required for production facilities to reduce the amount of dust from the pads; and water dirt roads during periods of high use in order to reduce fugitive dust emission. The significant threshold for particulate matter of 35 ug/m³ daily PM2.5 NAAQS is not expected to be exceeded under the proposed action alternative.

The EPA data show that improved practices and technology and changing economics have reduced emissions from oil and gas exploration and development (Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2006). One of the factors in this improvement is the adoption by industry of the BMPs proposed by the EPA's Natural Gas Energy Star program. The Farmington Field Office will work with industry and NMAQB to help facilitate the use of the relevant BMPs for operations proposed on federal mineral leases where such mitigation is consistent with agency policy.

4.3 Water Quality: Surface and Groundwater

There are no perennial water resources within the project area or immediate vicinity.

4.3.1 Direct and Indirect Effects

With any soil disturbance there is opportunity for erosion and diminishing water quality. There is also a possibility that the ground water could be affected during drilling process.

4.3.2 Mitigation

Culverts and silt traps, where indicated in the COA, will be used to stabilize and reduced sediment flow. The Operator would be responsible to ensure an adequate casing program is designed to protect ground water from contamination.

4.4 Soils - Watershed – Hydrology:

Soils in the immediate project area (all action alternatives) are comprised of the Orlie fine sandy loam 1-8% slopes.

4.4.1 Direct and Indirect Effects

Under the proposed action (Alternative B) an access road, pipeline tie and well pad would be constructed. Approximately 3.12 acres of soil would be disturbed to complete the project and allow for drilling, completion and production.

4.4.2 Mitigation

In mitigating the soil disturbance, the drilling of the proposed action (Alternative B) the Huntington Energy, Canyon Largo Unit #482 well would be subject to conditions of approval that may include

culverts, diversion ditches, berms, stockpiling of top soil, silt traps and other such soil erosion control structures as deemed necessary.

4.5 Floodplains:

A review of the BLM GIS data on active and 100-year floodplains (derived from Federal Emergency Management Agency floodplain maps) indicates the action alternative B is not located within any designated floodplains.

4.5.1 Direct and Indirect Effects

The proposed project will not have any effects in association with 100-year floodplains.

4.5.2 Mitigation

Floodplain mitigation will not be required for this proposed project.

4.6 Hazardous or Solid Waste Materials:

There will not be any hazardous waste used during this project.

4.6.1 Direct and Indirect Effects

Typical wastes associated with the proposed action would include trash, sewage, produced water and produced hydrocarbons.

4.6.2 Mitigation

During drilling and completion, a trash receptacle and chemically treated portable toilet would be used on location for trash and sewage disposal. Produced hydrocarbons and water would be collected and stored in steel tanks or lined reserved pit during the completion phase of the operation. All wastes would be disposed of in a proper manner as required by federal and state law and as described in the Conditions of Approval.

4.7 Mineral Resources:

The proposed project is located on an existing gas lease.

4.7.1 Direct and Indirect Effects

The proposed action (Alternative B) would allow for the development of the Basin Dakota formation and would result in the extraction of a non-renewable resource. Cross contamination between geologic zones could occur without adequate cementing and casing of the proposed well bore.

4.7.2 Mitigation

With the use of standard drilling and completion requirements such as adequate casing, cementing, mud weights and blow out preventer systems the short and long term effects to mineral resources and geology are anticipated to be low.

4.8 Riparian Zones/Wetlands:

The proposed project is not within any riparian zones or wetlands.

4.8.1 Direct and Indirect Effects

The proposed project will not have any effect on riparian zones or wetlands.

4.9 Farmlands, Prime or Unique:

The proposed project is not near or within any lands classified as farmlands prime or unique

4.9.1 Direct and Indirect Effects

The proposed project will not have any effects on prime or unique farmlands.

4.10 Livestock Grazing:

The proposed project is located within the Superior Mesa Allotment # 5115. The Superior Mesa Grazing Allotment is operated from November 15th thru June 15th annually with a maximum of 3148 AUM's. This allotment consists of 90% public land.

4.10.1 Direct and Indirect Effects

There would be temporary loss of 3.12 acres of forage prior to rehabilitation and reseeding. No reduction in AUMs would result from the proposed project.

4.10.2 Mitigation

Upon completion of the well, recontouring of cut and fill slopes, replacing the moved material and reseeding would be required.

4.11 Wild Horse and Burros:

The proposed project is not located in a designated wild horse and burro management area.

4.11.1 Direct and Indirect Effects

The proposed project will not have any effect on wild horses or burros.

4.12 Vegetation, Forestry:

The proposed project area consists primarily of sagebrush, blue grama grass, and sparsely scattered pinion and juniper trees.

4.12.1 Direct and Indirect Effects

Removal of the brush and grasses would likely increase soil erosion in the short term. There would be no mature trees removed during this project.

4.12.2 Mitigation

Following completion of the well, disturbed areas not needed for day to day operations and vehicular traffic will be immediately re-contoured and seeded. The re-establishment of vegetation is expected to take at least three growing seasons. The remaining long-term disturbance would be reclaimed upon final abandonment as prescribed in the conditions of approval.

4.13 Invasive, Non-native Species:

Invasive weeds are a progressively growing concern in the FFO region. Nonnative vegetation can dominate the native vegetation. Prevention and management of invasive plants assists in improving the health of public lands.

4.13.1 Direct and Indirect Effects

Weeds (invasive/nonnative vegetation) can be introduced in many ways, including wind, vehicles, heavy equipment, livestock, and wildlife. The potential for weeds to invade or spread within an area is increased when native vegetation is removed and physical disturbance to the soil occurs. Establishment of weeds usually occurs in disturbed sites such as oil/gas pads, pipelines, stock water ponds, and edges of roads.

4.13.2 Mitigation

To assist in controlling invasive/noxious plants the proposed project will be seed with certified weed-free seed upon interim reclamation. It will be the operator's responsibility to monitor, control and eradicate all noxious/invasive weeds within the proposed project area during the life of the project. Huntington Energy would follow BLM policy to control and manage invasive non-native vegetation species.

4.14 Wildlife:

The area of the proposed action provides habitat for both resident mule deer (*Odocoileus hemionus*) and elk (*Cervus canadensis*). Evidence of habitat utilization by deer was evident through tracks and scat observed within the project area. Based on the habitat within the proposed project area additional common mammal species most likely to occur would be desert cottontail (*Sylvilagus audubonii*), black-tailed jackrabbit (*Lepus californicus)*, and coyote *(Canis latrans).* No prairie dogs or evidence of burrows or colonies was observed within the proposed action area. The nearest recorded prairie dog community is 2 miles to the southwest. The proposed action would not be located in a BLM/FFO SDA for wildlife.

4.14.1 Direct and Indirect Effects

Some temporary displacement of wildlife could occur during the construction, drilling and completion phase of the proposed project. In addition, the proposed action represents an exacerbation of the habitat fragmentation and the accompanying anthropogenic activity in the area due to a new well with a new production life expectancy. Potentially affected species include the cottontail, blacktailed jackrabbit, elk, mule deer, coyote, and other species that typically utilize such habitat. Wildlife and bird species may alsolose nesting/den/burrow habitat and foraging habitat.

Alternative B would remove 3.12 acres of potential habitat for wildlife species that utilize the sagebrush habitat type. There are approximately 435,500 acres of sagebrush or desert scrub habitat and 633,400 acres of piñon-juniper woodland in the BLM/FFO planning area (BLM 2003a, pg 3-31). Habitat in action area is not unique to the planning area and is common throughout the northern half of the planning area. Effects to wildlife would be low for oil and gas development that adheres to proper conditions of approval.

4.14.2 Mitigation

After the well completion all areas of the well site location not utilized for the production operations on a daily basis will be reseeded with a BLM specified seed mix. The re-establishment of vegetation is expected to take at least three growing seasons. The re-established vegetation will provide food for the wildlife. The remaining long-term disturbance would be reclaimed upon final abandonment as prescribed in the conditions of approval. Effects to wildlife would be low and short term for oil and gas development that adheres to proper conditions of approval.

4.15 Threatened and Endangered Species/Special Status Species:

4.15.1 Threatened and Endangered Species

Under section 7 of the ESA, the BLM is required to consult with the USFWS on any proposed action which may affect federal listed threatened or endangered species or species proposed for listing. FFO reviewed and determined that the proposed action is in compliance with listed species management guidelines outlined in the September 2002 Biological Assessment (Cons. #2-22-01-I-389). No further consultation with the USFWS is required.

4.15.2 Special Management Species

The proposed action would not result in direct effects on any Special Management Species or their nests, burrows, or roosts. Indirect effects of the proposed action may include minor changes in vegetation composition and a temporary increase of human intrusion into the area with associated increases in noise, dust, and vehicle traffic. Construction and drilling activities would potentially displace raptor prey base species until the completion of drilling. None of the BLM/FFO SMS were observed during the field inspection of the proposed action area.

The effects to SMS are anticipated to be low to negligible in the short and long term.

4.15.3 Migratory Birds

4.15.4 Direct and Indirect Effects

The proposed project would not remove any juniper trees within proposed project area. Trees and sage brush provide shade for wildlife, provide perches for birds and screen the project area. No avifauna was observed utilizing the habitat within the proposed action area for nesting at the time during the onsite. The proposed action would remove approximately 3.12 acres of mixed composition understory species including sagebrush and piñon-juniper woodland habitat.

Based on the information available from the North American Breeding Bird Survey routes, it appears that the likelihood of more than one migratory bird nest in the project area is low. No old nests left from the previous breeding season or other evidence of these species was detected during the onsite conducted 11/23/10. The amount of projected habitat removal is negligible when compared to the total amount of available habitat. Actual potential effects on birds in the project area are difficult to predict. Ongoing studies have shown mixed effects of oil and gas development, including compressor noise on nesting migratory birds. Frances and Ortega (2007 unpublished report to BLM) found no significant difference in nest density or nest success between sites with or without wellhead compressors. Some species, such as black-chinned humming bird and house finch, were more common on sites with compressors while others, such as mourning dove and spotted towhee, appeared to either avoid or nest further from compressors. Holmes and King (2006) found that sage sparrow had lower nest survival in an area with ongoing gas development while Brewer's sparrow had higher survival rates when compared with populations in an undeveloped control area.

4.15.5 Mitigation

All construction activities will be confined to the permitted areas only. With the implementation of any proposed mitigation measures, effects to migratory birds are anticipated to be moderate for both the short term and long term for the proposed action. Any nests found during construction, drilling or completion activities will be immediately reported to a BLM/FFO biologist. The proposed action would result in less than 4 acres of new surface disturbance; therefore, a preconstruction migratory bird nest survey is not required per BLM/FFO Instruction Memorandum No. NM-F00-2010-001 (BLM 2010).

4.16 Visual Resources:

The proposed action is located in a remote area which is designated as a Class III VRM.

4.16.1 Direct and Indirect Effects

The proposed action would not be visible as a foreground or middle ground feature from any highway, county road, residence, or recreation area.

4.16.2 Mitigation

Visual changes of the proposed action will blend into the current setting, to the greatest extent possible. Above ground structures would be painted a color to mimic the vertical elements of the surrounding vegetation. During final abandonment and reclamation, the existing cut and fill slopes and flat well pad will be re-contoured to the existing pre-construction topography.

4.17 Recreation:

The proposed project is not located in a recreation SDA.

4.17.3 Direct and Indirect Effects

Construction, drilling, and production of the proposed action would result in increased human activity, construction activity, and production activity and equipment in the area. Noise levels within the area would increase moderately during construction and drilling of the proposed well. Long-term increases in noise would be low. Equipment and activities would also similarly increase visual disturbance in the immediate area with moderate short-term and low long-term effects. Noise and visual impacts would be less noticeable as there are numerous existing gas and oil developments in the area. A potential indirect effect would be the displacement of some wildlife species from the area surrounding the well location. This could detract from the recreational experience for those recreational visitors hoping to encounter such wildlife.

4.17.4 Mitigation

The proposed action is outside any designated recreation SDA in an area that is not readily used by recreationists or managed for recreational opportunities. The proposed action would be painted to help blend in with the surrounding scenery. Standard conditions of approval designed to protect wildlife and migratory birds would serve to limit effects to the activities of recreationally important animal species

4.18 Congressional or Administrative Designations/Areas of Critical and Environmental Concern (ACECs):

The proposed action is not within any ACEC. A Class III inventory of cultural resources has shown no cultural resources would be disturbed by the proposed action. The proposed action area does not contain any natural resources that would be considered necessary for the educational, cultural, heritage, architectural, historic, and other values in the FFO. The Superior Mesa ACEC is the nearest ACEC and located 700 ft to the north.

4.18.3 Direct and Indirect Effects

The proposed project would not have any effect on designated ACECs.

4.19 Wilderness Values:

The proposed action is approximately 8 miles from the Bisti/DE-NA-ZIN Wilderness Area. The Bisti/DE-NA-ZIN Wilderness Area contains 44,792 acres, with 38,381 of those acres being public land (BLM). The wilderness area is a remote desolate area of steeply eroded badlands with strange rock formations and fossils. The wilderness provides recreational, educational, and scientific opportunities to the public. The Bisti/DE-NA-ZIN and the AH-SHI-SLE-PAH Wilderness Study Area are the only two areas in the Farmington district that falls under the National Landscape Conservation System (NLCS).

4.19.3 Direct and Indirect Effects

The proposed project will not have any effect on the Wilderness.

4.20 Cultural or Historical Values:

4.20.1 Direct and Indirect Effects

Direct effects normally include alterations to the physical integrity of the cultural resources. If a cultural resource is significant for other than its scientific information, direct effects may also include the introduction of audible, atmospheric, or visual elements that are out of character for the cultural site. Based on a review of the archaeological reports and the assessment of the undertaking in this area, the BLM cultural resources staff has determined that the proposed action will have no effect on cultural resources.

4.20.2 Mitigation

In the event of a discovery during construction, the project proponent will immediately stop all construction activities in the immediate vicinity of the discovery and immediately notify the archaeological monitor, if present, or the BLM. The BLM would then evaluate or cause the site to be evaluated. Should a discovery be evaluated as significant (e.g., National Register, NAGPRA, ARPA), it will be protected in place until mitigating measures can be developed and implemented according to guidelines set by the BLM.

4.21 American Indian Religious Concerns:

4.21.1 Direct and Indirect Effects

The proposed action is not known to physically threaten any TCPs, prevent access to sacred sites, prevent the possession of sacred objects, or interfere or otherwise hinder the performance of traditional ceremonies and rituals pursuant to AIRFA or EO 13007. There are currently no known remains that fall within the purview of NAGPRA or ARPA.

4.21.2 Mitigation

No site-specific mitigation measures for Native American Religious Concerns have been recommended.

4.22 Paleontology:

The Tertiary Formations found within the proposed project area is known to contain any paleontological resources. Fossils are known to occur within or proximate to the proposed project area.

4.22.1 Direct and Indirect Effects

The effects to paleontological resources due this potential project are possible. If vertebrate fossils are present within the project area, they are especially vulnerable by the effects of this action. Direct impacts to fossil localities could result from the ground disturbing activates of this project. This project would also create indirect impacts to sensitive areas from changes to erosion patterns and providing vehicular access off the project area for recreational activities. These impacts would be assessed and mitigated during additional NEPA review at the time this project is proposed.

4.22.2 Mitigation

Discovery or adverse effects to paleontological resources are unlikely since the well pad and access road are already built. Any paleontological resource discovered by the Operator, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant 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 Authorized Officer after consulting with the Holder.

4.23 Transportation and Access:

The proposed project will utilize the existing roads and will not impose any more traffic than what there currently is.

4.23.1 Direct and Indirect Effects

The proposed action (alternative B) is not known to impede upon existing or proposed road and transportation project. Analysis was conducted in the final PRMP/FEIS (BLM2003a).

4.23 Land Tenure, Rights-of-Way (ROWs), or Other Realty Uses:

A review of the Master Title Plats (MTP's) of the proposed action (alternative B) revealed no existing or proposed right of ways or other restricted land areas would be encroached upon.

4.23.1 Direct and Indirect Effects

No effect

4.24 SociaEconomic/Environmental Justice:

No minority or low income populations would be directly affected in the vicinity of the proposed action.

4.24.1 Direct and Indirect Effects

Indirect effects could include positive effects due to overall employment opportunities related to the oil and gas and service support industry in the region as well as the economic benefits to state and county governments related to royalty payments and severance taxes. Negative effects could include a small increase in activity and noise disturbance in areas used for grazing, wood gathering, or hunting. However, these effects would apply to all public land users in the project area. A more detailed description of potential impacts is contained in the PRMP/FEIS p.4-120 and 4-129.

4.26 Cumulative Impacts

The leased area of the proposed action has been industrialized with oil and gas well development. The surface disturbance for each project that has been permitted has created a spreading out of land use fragmentation. The cumulative impacts fluctuate with the gradual reclamation of well abandonments and the creation of new additional surface disturbances in the construction of new access roads and well pads. The on-going process of restoration of abandonments and creating new disturbances for drilling new wells gradually accumulates as the minerals are extracted from the land. Preserving as much land as possible and applying appropriate mitigation measures will alleviate the cumulative impacts.

Due to the absence of regulatory requirements to measure GHG emissions and the variability of oil and gas activities on federal minerals, it is not possible to accurately quantify potential GHG emissions in the affected areas as a result of approving this application for permit to drill. A general assumption, however, can be made: drilling this well may contribute to GHG emissions.

The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts. However, potential impacts to natural resources and plant and animal species due to climate change are likely to be varied, including those in the southwestern United States. For example, if global climate change results in a warmer and drier climate, increased particulate matter impacts could occur due to increased windblown dust from drier and less stable soils. Cool season plant species' spatial ranges are predicted to move north and to higher elevations, and extinction of endemic threatened/endangered plants may be accelerated.

Due to loss of habitat or competition from other species whose ranges may shift northward, the population of some animal species may be reduced or increased. Less snow at lower elevations would likely impact the timing and quantity of snowmelt, which, in turn, could impact water resources and species dependant on historic water conditions. Forests at higher elevations in New Mexico, for example, have been exposed to warmer and drier conditions over a ten year period. Should the trend continue, the habitats and identified drought sensitive species in these forested areas and higher elevations may also be more affected by climate change

5.0 Consultation/Coordination

This section includes individuals or organizations from the public, public land users, the interdisciplinary team, and permitees that were contacted during the development of this document.

Table 5.1 Summary of Public Contacts Made During Preparation of Document and Interdisciplinary Team

Public Contact	Title	Organization	Present at Onsite?
Don Gosney	Grazing Allottee		No
ID Team Member	Title	Organization	Present at Onsite?
SC Willems	Environmental Protect. Spec.	BLM	Yes
John Kendall	T&E Specialist	BLM	No
John Hansen	Wildlife Biologist	BLM	No
David Moralas	Drilling Forman	Huntington Energy	Yes
Carol Ellington	Surveyor	Daggett	Yes

6.1 References

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6.0 Appendices

6.1.1 APD, with MAPS of all facilities, roads, pipelines, powerlines, etc**. Appendix A**

6.1.2 Conditions of Approval Appendix B

6.1.3 Authorities

Code of Federal Regulations (CFR)
40 CFR All Parts and Sections inclusive Protection of Environment, Revised as of July 1, 2001.
43 CFR, All Parts and Sections inclusive - Public Lands: Interior. Revised as of October 1, 2000.

U.S. Department of the Interior, Bureau of Land Management and Office of the Solicitor (editors). 2001. The Federal Land Policy and Management Act, as amended. Public Law 94-579.