U.S. Department of the Interior
Bureau of Land Management
White River Field Office
220 E Market St
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: DOI-BLM-CO-110-2009-0014-EA

CASE FILE/PROJECT NUMBER (optional):

Lease No.	Well No.
COC-69438	PE Federal 29-15
COC-69442	PE Federal 36-05

PROJECT NAME: Piceance Energy's 2 Exploration Oil Wells

LEGAL DESCRIPTION:

Well No.	Twp.	Rng.	Sec.	P.M.	Qtr. Sec	X[a]	Y[a]
PE Fed-29-15	3 North	102 West	29	6th	SWSE	40.196560	108.863684
PE Fed-36-05	3 North	102 West	36	6th	SWNW	40.189404	108.797912

[a] Coordinates obtained using NAD83 datum (Zone 12).

APPLICANT: Piceance Energy LLC

ISSUES AND CONCERNS (optional): The White River Field Office (WRFO) received Notices of Staking (NOSs) for the two proposed oil wells on July 11, 2008. On-site inspections for both well locations were conducted on August 27, 2008. Piceance Energy LLC (Piceance Energy) subsequently filed Applications for Permit to Drill (APDs) with the Bureau of Land Management (BLM) on October 19, 2008. The APDs also included requests to construct new access roads.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: The Project Area includes Piceance Energy's three oil and gas leases (COC-69438, COC-59442 and COC-69439) in the eastern Uintah Basin, north of Rangely, Colorado. The Project Area involves approximately 5,763 acres, of which approximately 5,603 acres are Federal surface and approximately 160 acres are private surface (refer to Figure 1). Site characteristics of the proposed well pad locations are summarized in Table 1 below.

Table 1. Dominant vegetation, elevation, well and road densities, and watershed for the proposed well pad locations.

Well No.	Dominant Vegetation	Elevation (ft)[a]	Well Density (wells/mi^2)[a]	Road Density (rd mi/mi^2)[a]	Watershed
PE Fed-29-15	Historically disturbed site within a clayey salt desert shrub community	5,590	0	1.65	Stinking Water
PE Fed-36-05	Wyoming sagebrush-perennial grasslands community	6,330	0	1.10	Red Wash

[a] Source: Individual APDs and current survey diagrams.

Proposed Action: The proposed action is taken from the individual APDs for each proposed well. Specifically, the proposed action would involve construction of a well pad and the drilling of a single, vertical oil well at each of the two locations identified above. The proposed action would also involve the construction, use and maintenance of one access route per well for the life of the project. The access route width would be 30 feet, with a running surface of 16 feet. The project survey diagrams included with the individual APDs provide estimated surface disturbance for the well pads and access routes. Specifically, the estimated surface disturbance for Piceance Energy (PE) Federal 29-15 is approximately 3.18 acres and the estimated surface disturbance for PE Federal 36-05 is approximately 3.07 acres, resulting in a total estimated surface disturbance of approximately 6.3 acres. Geographic Information System (GIS) calculations completed during preparation of this environmental assessment (EA) identified slight variations in the estimated surface disturbance provided in the APDs. This slight discrepancy can be due to a rounding effect and/or a slight change in measurement of the proposed action elements. Table 2 provides the GIS-derived calculations as assessed in this EA.

Table 2. Planned surface disturbance for the proposed well pads and access roads.

Well No.	Anticipated Construction Date[a]	Pad Size (Feet)[a]	Disturbance (Acres)[b,c]	New Road Access (Feet)[c]	Disturbance (Acres)[c]
PE Fed-29-15	February 2009	250 x 300	2.85	666	0.45
PE Fed-36-05	May 2009	250 x 300	2.85	506	0.36
		Total	**5.7**	**1,172**	**0.81**
				Total Disturbed Acres	**6.51**

[a] Source: Surveyed well diagrams, dated 6/30/08.
[b] Includes planned surface disturbance for well pad, tank battery site and excess material and topsoil stockpiles.
[c] GIS-derived calculations.

Should the proposed wells demonstrate sufficient flow or indicate economic potential, the product would be hauled by truck from the locations. As such, tie-in pipelines are not included in this proposal. Water needed for drilling, dust suppression and workover operations would be hauled over approved access routes; as such, water pipelines are not included in this proposal. Stormwater management actions specific to each proposed well would be completed as described in Attachment 1 of the Surface Use Plan (SUP) in the APD for each proposed well located in the well files. Interim and final reclamation, including weed control, would be accomplished as outlined in Attachment 2 of the SUP in the APD for each proposed well also located in the well files. Design, placement and construction of well pads and access roads would follow

appropriate guidance as set out in BLM's 2007 "Gold Book" (USDI-USDA 2007) and standard engineering road designs as set out in BLM's Manual Section 9113.

No Action Alternative: Under the no action alternative, the applications would be denied and the well pads and access roads would not be constructed.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None.

NEED FOR THE ACTION: The need for the action is to respond to a request by Piceance Energy to exercise its lease rights and to develop potential hydrocarbon reserves.

The purpose of the proposed action is to manage the exploration and development of mineral resources on Public Lands in a manner that avoids, minimizes, reduces, or mitigates potential impacts to other resource values.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Pages 2-5 through 2-6

Decision Language: "Make Federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values." (BLM 1997).

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

NATURAL, BIOLOGICAL, AND CULTURAL RESOURCES

The following natural, biological and cultural resources elements are not present or would not be affected by either the proposed action or the no action alternative: Threatened, endangered and sensitive plant species (BLM 2008b) and prime and unique farmlands. As such, these elements are not presented and assessed in this document.

AIR QUALITY

Affected Environment: The Project Area is located within a Class II Prevention of Significant Deterioration (PSD) air quality area. The nearest Class I PSD area, the Flat Tops Wilderness Area, is more than 60 miles east of the Project Area.

The principal air quality parameter likely to be affected by construction of well pads, roads, and pipelines is the inhalable particulate level (PM_{10} – particles ten microns or less in diameter) associated with fugitive dust. Although no monitoring data are available for the Project Area located in the White River Basin, it can be surmised from conditions that the air quality is good. Overall air quality conditions in the White River Basin are influenced by effective atmospheric dispersion conditions and limited transport of air pollutants from outside the area.

Although specific air quality monitoring data are not available for the White River Basin, data have been collected in the region. The cities of Grand Junction (southwest), Steamboat Springs (northeast), and Parachute (directly south) all host air quality monitoring stations. Available monitoring data at Grand Junction, Steamboat Springs, and Parachute indicate that the area is likely to be in the attainment category, meaning that the ambient concentrations of criteria pollutants are less than the applicable air quality standards (NAAQS and CAAQS). However it should be noted, not all criteria pollutants have been monitored at each site, there is not continuous monitoring of all criteria pollutants at any of the sites and the atmospheric, proximity to emissions, and climate conditions at these monitoring sites are likely to be different from this location.

The Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado to be less than 50 micrograms per cubic meter ($\mu g/m^3$) (CDPHE-APCD 2008). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: Vehicle emissions would occur during construction and drilling activities but are difficult to quantify due to varying environmental conditions and differences in individual vehicle emissions. Natural gas processing and transportation would result in the combustion of fuels for compressors and other equipment in addition to flaring. Any potential increase in emissions would likely fall within NAAQ and CAAQ standards. Non-criteria pollutants such as visibility, nitric oxide, air toxins (e.g. benzene) and total suspended particulates (TSP) may also experience slight, temporary increases as a result of the Proposed Action (no national ambient air quality standards have been set for non-criteria pollutants).

The construction of facilities proposed for the Project Area (i.e., well pads and access roads) would result in short-term, localized elevated levels of PM_{10} during and after construction due to fugitive dust being distributed into the air. PM_{10} levels would be elevated along roads due to operational traffic creating airborne dust. Airborne particulate matter would not exceed Colorado air quality standards on an hourly or daily basis. Following successful revegetation of disturbed sites, airborne particulate matter should return to near pre-construction levels. Therefore, the most likely and consistent impact from this project is the periodical increase in fugitive dust associated with vehicles. Fugitive dust production can be moderated by good road maintenance and design as well as dust abatement measures.

Environmental Consequences of the No Action Alternative: Under the no action alternative there would be no change from current levels and trends.

Mitigation: All activities would be required to comply with all applicable local, State, and Federal air quality laws, statutes, regulations, standards, and implementation plans. Documentation of this compliance should be provided to the BLM annually. Further recommendations for mitigating air quality impacts include:

- All access roads would be maintained according to BLM Manual Section 9113 standards for road shape and drainage features at all times during construction, drilling, completion and production of the wells.
- All access roads would be treated with water and/or a dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. All vehicles would abide by company or public speed restrictions during all activities. If water is used as a dust suppressant, there should be no traces of oil or solvents in water. Only water needed for abating dust should be applied; dust abatement should not be used as a water disposal option under any circumstances.
- Surfacing of access roads constructed on soils susceptible to wind erosion with gravel or other appropriate materials approved by the AO.
- Suspension of land clearing, grading, earth moving and excavation activities when wind speeds exceed 20 mph.
- Restoration of disturbed areas including re-grading to original contours, revegetation with a BLM-approved seed mixture, and post-seeding placement of woody debris in appropriate areas to increase effective ground cover and retain soil moisture.
- Maintenance of construction equipment and vehicles in good operating condition to ensure engines run efficiently.

SOILS (includes a finding on Standard 1)

Affected Environment: Soils in the Project Area occupy varying landforms including narrow valleys, rolling hills and steep-sided ridges. Semi-arid environments typically take a long time to develop soils. Lack of moisture and relatively cool temperatures in these semi-arid environments suppress vegetation growth and slow the chemical and biological processes needed for good soil development (BLM 1994).

Soils in some portions of the Project Area contain high levels of sodium and other salts. These soils generally support a sparse vegetation cover of salt-tolerant shrubs, grasses and lichens, making reclamation difficult. Soils that are highly susceptible to water erosion are present within the Project Area. The surface of these soils generally has a high proportion of fine materials with little organic matter, which leads to little infiltration and rapid runoff.

In 1982, Order III baseline soils data were collected for Rio Blanco County by the Natural Resources Conservation Service (NRCS) (USDA-SCS 1982). These data are available online on the U.S. Department of Agriculture, NRCS Web Soil Survey (USDA-NRCS 2008).

Of the 12 major soils found in the Project Area, five soils would be associated with the proposed action. Descriptions of the involved soil types are provided below in Table 3. All of the involved soils are derived from shale. The Moyerson stony clay loam has some characteristics indicative of landslide areas (i.e., having slopes exceeding 35 percent and an erosion potential of very high to severe). No soils within the Project Area were classified as fragile in the 1997 White River ROD/RMP.

Table 3. Soil characteristics involved with the proposed action.

Well No.	Map Unit	Map Unit Name (Slope range %)	Landforms and Parent Material	Erosion Potential	Reclamation Potential[a]	Disturbance (Acres)	
						Initial	Long-Term
PE Fed 29-15	5	Badland (mixed slopes)	Canyon, ridges, hills. Highly calcareous & gypsiferous, residuum from shale	Very Severe	Not rated, but likely poor	0.5	0.0
	7	Billings silty clay loam (0-5%)	Terraces, valley floors. Calcareous, silty, alluvium derived from shale	Slight	Fair (Org, Na, carb, clay)	2.5	0.9
	16	Chipeta silty clay loam (3-25%)	Toeslopes, hills. Gypsiferous residuum from calcareous shale	Slight	Poor (Sh, Dr, clay, Org, Na)	0.3	0.1
PE Fed 36-05	53	Moyerson stony clay loam (15-65%)	Plateaus, ridges. Residuum from calcareous shale	Severe	Poor (Dr, Sh, clay, Org, Na)	3.2	0.9
TOTALS						6.5	1.9

Source: USDA-NRCS 2008.

[a] Reclamation source material rating: Org = organic matter content low; Na= high sodium content; carb = high carbonate content; clay = high clay content; Sh = shallow depth to bedrock; Dr = droughty soil.

Environmental Consequences of the Proposed Action: Potential impacts to soils from the proposed action include removal of vegetation, mixing of soil horizons, soil compaction, increased susceptibility to erosion, loss of topsoil productivity and contamination of soils with petroleum constituents.

A total of approximately 6.5 acres of soils would be initially disturbed under the proposed action. The majority of the disturbance would be to the Billings silty clay loam (2.5 acres) and the Moyerson stony clay loam (3.2 acres), as shown above.

Excavation of well pads and construction of the access roads would result in the loss of vegetative cover, increasing the potential for water erosion and soil loss. Compaction due to

construction activities would slightly reduce aeration, permeability and water-holding capacities of the soils. An increase in surface runoff could be expected, potentially causing increased sheet, rill and gully erosion. In addition, the segregation and reapplication of surface soils could cause the mixing of shallow soil horizons, resulting in a blending of soil characteristics and types. This blending would modify physical characteristics of the soils, including structure, texture and rock content, which could lead to reduced permeability and increased runoff from these areas.

The primary effect of surface disturbances on soil resources is in increasing erosion. Increased erosion of soils would also directly reduce vegetative productivity. Erosion potential for the soil types that would be disturbed in the Project Area ranges from slight to very severe.

The proposed action includes both interim reclamation actions and stormwater protection actions to reduce soil loss. Interim reclamation, including revegetation, would be conducted on portions of the well pads and access roads that are not needed for production operations. Of the estimated initial surface disturbance of 6.5 acres, approximately 4.6 acres would undergo interim reclamation. If successful, interim reclamation would reduce the long-term disturbance to 1.9 acres, potentially reducing the soil loss from erosion by about 70 percent.

The Billings soils are rated as fair for reclamation potential by the NRCS. Factors that inhibit successful revegetation for these soils include low organic matter content and high sodium, carbonate, and clay contents. The Moyerson soils are rated poor because of drought-like conditions, shallow depth to bedrock, low organic matter content and high sodium and clay contents.

As part of the proposed action and to minimize the mixing of soil horizons, topsoil would be stored separately from other cut (subsoil) materials. Topsoil excavated from well pad locations would be scalped, stockpiled and seeded to preserve it for future reclamation activities. During reclamation actions, the cut materials would be spread first, with the topsoil being spread over the cut material. Table 4 provides an estimate of the amount of cut and topsoil materials that would be generated under the proposed action. An estimated total of 5,020 cubic yards of topsoil would be available for interim and final reclamation actions.

Table 4. Estimated amounts of cut and topsoil materials associated with the proposed action.

Well No.	Estimated Amount of Cut Material (Cubic Yards)	Estimated Amount of Topsoil Materials (Cubic Yards)
PE Federal 29-15	6,890	2,510
PE Federal 36-05	6,795	2,510
Estimated Total	**13,685**	**5,020**

Source: Surface Use Plan included with individual APD for each proposed well.

Contamination of surface and subsurface soils can occur from leaks or spills of oil, produced water, and condensate liquids from wellheads, produced water sumps and condensate storage tanks. Leaks or spills of drilling and fracing chemicals, fuels and lubricants could also result in soil contamination. Such leaks or spills could compromise the productivity of the affected soils. Of these materials, leaks or spills of condensate would have the greatest potential environmental impact.

Depending on the size and type of spill, the impact to soils would primarily consist of the loss of soil productivity. In addition, petroleum released to surface soils infiltrate the soil and, under the right conditions, can migrate vertically until the water table is encountered, thus contaminating shallow groundwater. Typically contaminated soils would be removed and disposed of in a permitted facility or would be bioremediated in place using techniques such as excavating and mulching to increase biotic activities that would break down petrochemicals into inert and/or common organic compounds.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to soils resulting from energy development activities in the Project Area would remain unchanged from current levels and trends.

Mitigation: Refer to the Water Quality Section

Finding on Public Land Health Standard for Upland Soils: Standard 1 states that upland soils shall exhibit infiltration and permeability rates that are appropriate to soil type, climate, landform and geologic processes. Assuming implementation of the proposed reclamation plans, proposed stormwater management plans, and the recommended mitigation measures outlined above, the proposed action and no action alternatives is not likely to affect the land health standard for upland soils.

WASTES, HAZARDOUS OR SOLID

Affected Environment: The management of hazardous and non-hazardous (solid) wastes is regulated under the Resource Conservation and Recovery Act (RCRA), while the management of releases of hazardous materials into the environment is regulated under the Comprehensive Environmental Response, Compensation and Liabilities Act (CERCLA). Oil and gas exploration and production wastes, and releases of hazardous materials into the environment, are regulated by the Colorado Oil and Gas Conservation Commission (COGCC) or the Colorado Department of Public Health and Environment (CDPHE), as well as by the BLM.

Piceance Energy has developed an Emergency Action Response Plan for releases of hazardous materials. Chemicals subject to reporting under SARA Title III (hazardous materials including diesel fuel, produced hydrocarbons, drilling fluids, etc.) would be on site during drilling, testing, completion and production phases of the project. Piceance Energy would complete and submit all necessary chemical inventory reports per Federal and State requirements. Scrap metal and other recyclable refuse would be periodically hauled off site.

A search of the Colorado Hazardous Materials and Waste Management Division and the Environmental Protection Agency's (EPA) RCRA databases reveals that there are no known hazardous waste disposal sites or permitted solid waste disposal sites within the Project Area.

Environmental Consequences of the Proposed Action: The proposed action includes construction and operation elements that would require the use of hazardous materials such as drilling mud, pipe cement, corrosion inhibitors, new and used lube oils, paints, gasoline and

diesel fuel. Use of these materials would be limited to the proposed well sites and associated infrastructure locations. Due to the existing Federal and State requirements for hazardous material handling and management, it is not expected that any extremely hazardous substances, as defined by RCRA, would be used in these operations.

Environmental Consequences of the No Action Alternative: Under the no action alternative impacts from hazardous or solid wastes from ongoing energy-related activities would not occur due to continued strict adherence to Federal and State regulations relative to hazardous and solid waste materials.

Mitigation: 1. The release of any chemical, petroleum product, produced water, or sewage, etc., (regardless of quantity) would be reported by the operator, to the BLM WRFO Hazardous Materials Coordinator at (970) 878-3800.

2. Prior to drilling, the operator would submit an updated Spill Prevention, Control Countermeasure (SPCC) plan to the BLM that details procedures that would be used to contain, store and dispose of all chemicals used or produced from the proposed action. Remediation of contaminated soils or off-site disposal of contaminated materials would need to be approved by the BLM AO prior to taking any action. Emergency containment measures would be allowed without approval.

3. The operator would submit to the BLM the method of handling produced water from completed wells, per Onshore Order No.7 requirements.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The Project Area is drained by a series of ephemeral tributaries to Stinking Water Creek, Nate Spring Draw and Red Wash. Stinking Water Creek and Nate Spring Draw flow generally to the south into the White River. Red Wash flows to the northeast and then turns south to join the White River above Rangely, Colorado. Stinking Water Creek is an intermittent stream and the other streams within the Project Area are ephemeral with flows occurring only after storm events and during spring snowmelt. PE Federal 29-15 and its access road would be located approximately 0.25 mile from the channel of Stinking Water Creek. PE Federal 36-05 and it access road are within 0.25 mile of an ephemeral tributary to Red Wash. Red Wash was identified as a “Fragile Watershed” in the 1997 White River ROD/RMP for the White River resource area.

Limited streamflow and water quality data are available for Stinking Water Creek and Red Wash. Instantaneous measurements of streamflow and field water quality parameters (water temperature, specific conductance (SC) and pH) were collected by the BLM WRFO from April 1979 through September 1988. For period of record, Stinking Water Creek had a maximum discharge recorded of 31.9 cubic feet per second (cfs) on October 13, 1981 and averaged 4.90 cfs during spring runoff. Red Wash’s maximum discharge recorded was 6.09 cfs on June 1, 1981 and averaged 1.90 cfs during spring runoff. One U.S. Geological Survey (USGS) gaging station (station 09306300) is located on the White River, immediately upstream from Rangely.

Streamflow data was recorded between April 1972 and July 1982 at this location. For the period of record, average streamflow in the White River ranged from 362 cfs in January to 1,820 cfs in June, with an average of 633 cfs (USGS 2008).

Water Quality parameters collected from Stinking Water indicated that the specific conductance ranged from 1,120 to 31,890 micromhos. On the October 1 visit, the measured SC was 1,120 micromhos, while the highest recorded SC was collected with a discharge of 0.10 cfs. Specific conductance data collected at Red Wash ranged from 920 micromhos upwards to 5,720 micromhos.

In addition to the streams, there are several small ponds within the Project Area. These ponds are associated with coal mines, which are unaffiliated with the Proposed Action. One small pond, the Burning Mine Reservoir, is located adjacent to PE Federal 36-05.

Table 5 provides a distance to the nearest surface drainage or perennial stream for each proposed well. (Refer also to Table 4 for the estimated amounts of cut material for the proposed action.)

Table 5. Estimated distance to the nearest surface drainage or perennial stream.

Well No.	Distance to Nearest Ephemeral Drainage	Distance to Nearest Perennial Stream -
PE Federal 29-15	1,000 feet	4 miles
PE Federal 36-05	500 feet	4 miles

Source: Surface Use Plan included with individual APD for each proposed well.

Groundwater: Groundwater occurs in both bedrock and alluvial aquifers near the Project Area. Alluvial groundwater occurs along the White River, south of the Project Area. The White River alluvium generally consists of silty sand and rounded gravel and cobbles derived from sandstone, quartzite, basalt, and granite (Van Liew and Gesink 1985). The width of the alluvial aquifer ranges from 0.1 to 1.5 miles, with an average saturated thickness of about 22 feet. Well yields are generally less than 25 gallons per minute. The total amount of water in storage in the alluvium between Meeker and Rangely is estimated to be about 103,000 acre-feet.

Groundwater is also present in the Dakota-Cheyenne aquifer beneath the Coal Oil Basin (Topper et al. 2003). The Dakota-Cheyenne aquifer consists of an assemblage of water yielding sedimentary rocks of the Dakota Sandstone of Lower Cretaceous age.

Environmental Consequences of the Proposed Action: Surface Water: Potential impacts to surface water from the proposed action include increased turbidity and sedimentation in watercourses, increased runoff, and depletion of surface water flows in the White River. Impacts would likely be greatest shortly after the start of construction activities and would likely decrease in time due to stabilization, reclamation, and revegetation efforts. Changes in surface hydrology from road construction would continue through the life of the project and may extend beyond the project life if roads are left in place. Surface disturbance would increase wind and water erosion and change soil properties leading to increased runoff and rain splash erosion.

The operator has indicated that two 18" culverts would be placed for the access road to PE Federal 29-15 and one for the access to PE Federal 36-05. The SUP details a plan for handling excess soil piles, topsoil piles, stormwater measures and reclamation activities. These practices should be adequate to protect downstream water quality from increased sediment transportation due to these activities. One additional culvert should be placed along Rio Blanco County Road No. 96, as per BLM request.

Sediment transportation in ephemeral systems requires storm events and typically occurs in stages with intense and localized storms. For example, increased surface runoff or concentrated flows in rills and gullies in upland hillsides may transport material to channels where it is stored for months or years. Storm events that result in flows in ephemeral channels may then move sediment stored in channel bottoms and include additional material eroded from the channels themselves. As construction activities disturb vegetation, increase surface runoff, concentrate surface flows, and otherwise modify surface hydrology, annual sediment yields are likely to increase in these ephemeral systems.

The amount of additional sediment that would reach the ephemeral drainages in the Project Area depends on natural factors and the effectiveness of the site-specific stormwater management plan for each well. Natural factors which attenuate the transport of sediment into creeks include water available for overland flow; the texture of the eroded material; the amount and kind of ground cover; the slope shape, gradient, and length; and surface roughness (Barfield et al. 1981). The magnitude of the increased sedimentation is expected to be small due to the small amount of new disturbance proposed for this project relative to the Red Wash watershed. Sediment transported to the perennial stretches of Stinking Water Creek could potentially degrade aquatic habitat by covering stream substrates with fine sediments, and increase the sediment loading and turbidity within Stinking Water Creek.

Soil compacted on roadways and well pads contribute greater runoff than undisturbed sites. The increased runoff could lead to slightly higher peak flows in Stinking Water Creek, potentially increasing erosion of the channel banks. The increased erosion could lead to slightly increased turbidity in Stinking Water Creek during storm events. The magnitude of this impact cannot be quantified, but is likely negligible based on the small amount of proposed surface disturbance compared to the size of the watershed.

Surface water quality could be negatively affected from leaks from production facilities, including pipelines. The SUP, submitted by the operator, details secondary containment structures around production tanks (capable of holding at least 110 percent of the storage capacity of the largest tank), adherence to industry standards for pipeline materials and installation, and adherence to Federal and State regulations regarding notification and cleanup actions should a leak occur. These actions would reduce the likelihood of possible leaks and reduce the extent and magnitude should a leak occur.

Groundwater: Groundwater within the White River aquifer is located several miles from the Project Area and would not be affected by the proposed action. The water-bearing zones within the Dakota aquifer beneath the Project Area are several thousand feet below the surface and are also unlikely to be impacted by the drilling operations.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to surface and ground water quality resulting from ongoing energy development activities in the Coal Oil Basin would remain unchanged from current levels and trends.

Mitigation: 1. Place an additional culvert under the access road to PE Federal 36-05 in the drainage ditch for Rio Blanco County Road No. 96 to convey water under the new road.

2. Culverts or drainage dips should be installed at a frequency specified in BLM Manual Section 9113 and in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Adequate spacing to avoid accumulation of water in ditches or road surfaces should be provided. Culvert installations should be monitored to ensure adequate armoring of inlet and outlet and no erosion of design.

3. Road inlet and outlet ditches, catch basins, and culverts should be kept free of obstructions, particularly before and during spring runoff. Routine machine-cleaning of ditches should be kept to a minimum during wet weather. Disturbed areas should be left in a condition that provides drainage with no additional maintenance.

Finding on the Public Land Health Standard for Water Quality: Project activities, with the proper implementation of recommended mitigation measures, are not anticipated to negatively affect the status of these waters. The no action alternative would not change current water quality trends and conditions. Thus, neither the proposed action nor the no action alternative would affect the land health standard for water quality.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: A total of 11 linear miles of streams and drainages, including approximately 48 acres of associated floodplains, occur within the Project Area. Stinking Water Creek, Nate Spring Draw and Red Wash, are major drainages within the Project Area.

Stinking Water Creek, an intermittent stream, is located approximately 0.25 miles to the west of PE Federal 29-15. The BLM WRFO has assessed Stinking Water Creek and has determined that approximately eight acres of this creek supports “medium priority riparian habitat.” The BLM WRFO has rated this habitat to be in a properly functioning condition (BLM 1997).

Nate Spring Draw, an ephemeral stream, is located approximately 1.5 miles west of PE Federal 36-05. This draw flows through the center of the Project Area from southwest to northeast toward Red Wash and ultimately into the White River immediately upstream from Kenny Reservoir. Nate Spring Draw, the ephemeral tributary to Red Wash, and Burning Mine Reservoir have not been identified as supporting riparian zones. None of these waters have been assessed for riparian condition by the BLM WRFO.

The BLM WRFO determines riparian-wetland areas to be in a properly functioning condition "when adequate vegetation or landforms are present that help to: a) dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; b) filter sediment, and aid floodplain development; c) improve flood-water retention and groundwater recharge; d) develop root masses that stabilize streambanks against cutting action; e) develop diverse ponding and channel characteristics to provide habitat and the water depth, duration, and temperature needed for fish production, waterfowl breeding, and other uses; and f) support greater biodiversity. The functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water, and vegetation" (BLM 1997).

Environmental Consequences of Proposed Action: No surface-disturbing activities under the proposed action would occur in designated riparian-wetland areas. PE Federal 29-15 would be the closest surface-disturbing activity (approximately 0.25 mile) to Stinking Water Creek. PE Federal 36-05 would be located approximately 1.5 miles to the east of Nate Spring Draw and approximately 0.1 mile southeast of the Burning Mine Reservoir. Direct impacts to Stinking Water Creek, Nate Spring Draw, Red Wash, and Burning Mine Reservoir would not occur as a result of the proposed action.

Indirect impacts to potential riparian areas or wetlands adjacent to Stinking Water Creek, Nate Spring Draw, the ephemeral tributary to Red Wash and Burning Mine Reservoir could result from increased sediment loading to these areas, a potential increase in noxious weeds, and a potential for spills and leaks from construction equipment. Specific actions set out under the proposed action would reduce impacts to these resources. These actions include: avoidance of streams or ponds and any associated riparian and wetland areas, revegetation of disturbed areas, proper control and prevention of noxious weeds, and actions to reduce surface runoff and soil sediments. Successful interim reclamation would reduce by 4.6 acres the estimated total initial surface disturbance of 6.5 acres. As such, long-term surface disturbance in the Project Area would be approximately 1.9 acres for the life of the project (LOP).

Environmental Consequences of the No Action Alternative: Under the no action alternative, the proposed wells and supporting infrastructure would not be approved. Thus, impacts to riparian areas and wetlands associated with Stinking Water Creek, Nate Spring Draw, Red Wash, and Burning Mine Reservoir resulting from energy development activities in the Project Area would remain unchanged from current levels and trends.

Mitigation: No additional mitigation measures for riparian areas and wetlands are recommended.

Finding on the Public Land Health Standard for Riparian Systems: The proposed and no action alternatives would not have any reasonable potential to influence any riparian or wetland zones in the Project Area. Thus, in the context of the Land Health Standard 2, neither would prevent lands in the Project Area from meeting the public land health standard for riparian systems.

VEGETATION (includes a finding on Standard 3)

Affected Environment: Native vegetation communities are closely aligned to soil types. The U. S. Department of Agriculture (USDA) - Natural Resource Conservation Service (NRCS) has mapped vegetation communities as "ecological sites" based on soil mapping information for Rio Blanco County including the Project Area (USDA-NRCS 2008). The ecological site descriptions for this vegetation mapping are currently being prepared by the USDA-NRCS. Therefore, USDA-NRCS "range site descriptions" developed in the 1970s are currently used in lieu of "ecological site descriptions" (per personal communication with F. Cummings, October 15, 2008). The range site descriptions for each of the ecological sites have been used in the vegetation community analysis below.

Four major ecological sites, or native vegetation communities, are located in the Project Area. Five soils do not have associated ecological sites or the data are currently unavailable. Table 6 provides the current ecological sites, their associated soils and estimated acreage in the Project Area.

Table 6. Ecological sites (vegetation communities) within the Project Area.

Ecological Sites (Vegetation Community)	Associated Soils	Estimated Total Acres in Project Area	Percent of Project Area
Clayey Saltdesert	16 Chipeta silty clay loam, 3 to 25% slopes 18 Chipeta-Killpack silty clay loams, 3 to 15% slopes	220	4
Clayey Slopes	53 Moyerson stony clay loam, 15 to 65% slopes	2,528	44
Foothill Swale	41 Havre loam, 0 to 4% slopes	37	0
Rolling Loam	33 Forelle loam, 3 to 8% slopes 64 Piceance fine sandy loam, 5 to 15% slopes	224	4
Not Rated or Not Available	5 Badland 7 Billings silty clay loam, 0 to 5% slopes 8 Billings-Torrifluvents complex, 0 to 5% slopes 74 Rentsac-Moyerson-Rock outcrop complex, 5 to 65% slopes 94 Turley fine sandy loam, 3 to 8% slopes	533 47 304 1,838 32	9 1 5 32 1
	Subtotals	2,754	48
	Total Acres	**5,763**	**100**

Clayey Saltdesert: This ecological site occurs in the western portion of the Project Area, including a small portion of PE Federal 29-15. The vegetation community within this site is primarily a mat saltbush (*Atriplex corrugata*) – Gardner saltbush (*Atriplex gardneri*) association with patches of various grass species including galleta (*Pleuraphis jamesii*), Salina wildrye (*Elymus salina*), squirreltail (*Elymus elymoides*), and Indian ricegrass (*Achnatherum hymenoides*). Forb and shrub species are also present, including globemallow (*Sphaeralcea* spp), sego lily (*Calochortus nuttallii*), woody-rooted aster (*Aster xylorrhiza*), buckwheat (*Eriogonum* sp.), spiny horsebrush (*Tetradymia spinosa*), low Douglas rabbitbrush, prince's plume (*Stanleya pinnata*), prickly pear cactus (*Opuntia* spp.), vetches (*Vicia* spp.), phlox (*Phlox* sp.), snakeweed (*Gutierrezia sarothrae*), biscuit root (*Lomatium macrocarpum*), wild onion (*Allium* sp.) and primrose (*Primula* sp.) (USDA-NRCS 2008).

Clayey Slopes: This site encompasses a large portion of the Project Area, including the entire location of PE Federal 36-05. The dominant grasses include Salina wildrye, muttongrass (*Poa*

fendleriana), western wheatgrass (*Pascopyrum smithii*), Junegrass (*Koeleria* sp.), and squirreltail. Other native grasses include bluegrass (*Poa* spp.) and Indian ricegrass. Forbs include wild onion, Hoods phlox (*Phlox hoodii*), stonecrop (*Sedum* sp.), hollyleaf clover (*Trifolium gymnocarpon*), fleabane (*Erigeron* sp.), and aster (*Aster* sp.). Native shrubs include shadscale (*Atriplex* sp.), big sagebrush (*Artemisia tridentata* var. *tridentata*), snowberry (*Symphoricarpos* spp.), serviceberry (*Amelanchier* spp.), horsebrush (*Tetradymia* sp.), rabbitbrush (*Chrysothamnus* spp.) and greasewood (*Sacrobatus vermiculatus*) (USDA-NRCS 2008).

Foothill Swale: This site occurs within the southeastern corner of the Project Area, south of PE Federal 36-05. Grass species include basin wildrye (*Elymus cinereus*), various wheat-grasses (*Agropyron* spp), Indian ricegrass and squirreltail. Shrubs include basin big sagebrush, rubber rabbitbrush (*Chrysothamnus viscidiflorus*) and fourwing saltbush (*Atriplex canescens*). Principal forbs include yarrow (*Achillea* spp), fleabane, globemallow, Indian paintbrush (*Castilleja* spp) and wild buckwheat (*Eriogonum ovalifolium*) (USDA-NRCS 2008).

Rolling Loam: This site is scattered throughout the Project Area, but does not occur in areas proposed for development. The vegetation consists of open stands of Wyoming big sagebrush with an abundance of grasses including western wheatgrass, bluebunch wheatgrass (*Agropyron spicatum)*, needlegrasses (*Nassella* sp.), squirreltail, bluegrasses (*Poa* spp.) and Indian ricegrass. In addition to Wyoming big sagebrush, other shrubs include gray horsebrush, rabbitbrush and serviceberry. Forbs include American vetch (*Vicia americana*), buckwheat, bluebells (*Mertensia* sp.), balsamroot (*Balsamorhiza* sp.), globemallow, lupine (*Lupinus* spp.), yarrow and fleabane (USDA-NRCS 2008).

Not Rated or Not Available: Approximately 48 percent of the Project Area has not been mapped as a specific ecological site type as the soil map units have not been rated or the data are not available. PE Federal 29-15 is located predominantly within the Billings silty clay loam soil map unit; however, the northeast corner of this proposed well pad falls within the Badlands soil map unit, and a small portion of the access road falls within the Billings-Torrifluvents complex soil map unit (USDA-NRCS 2008).

Onsite investigations of the two proposed well pad locations were completed in August 2008. The existing vegetation communities associated with the two proposed wells and their access routes do not exhibit the full diversity of plant species expected from the plant communities described for the ecological site described above. PE Federal 29-15 is within a disturbed area dominated by greasewood with noxious and invasive weedy plant species including cheatgrass (*Bromus tectorum*), halogeton (*Halogeton glomeratus*), curveseed butterwort (*Ceratocephala testiculata*) and tumble mustard (*Sisymbrium altissimum*). There are also native grasses, forbs and some sagebrush, but these are not the dominant plants in the area. PE Federal 36-05 is located within a sagebrush-bunchgrass community dominated by sagebrush and native grasses. Other plant species present include snakeweed, phlox, greasewood, and cheatgrass. Approximately 8-10 juniper (*Juniperus osteosperma*) trees would be removed as a result of this proposed well and access road (B&A 2008a).

Environmental Consequences of Proposed Action: Under the proposed action, approximately 6.5 acres of existing vegetation would be removed in the Project Area. Table 7 below provides a breakdown of disturbance by ecological site for the proposed action.

Table 7. Surface disturbance by ecological site for the proposed action.

Ecological Site (Vegetation Community)	Acres of Initial Surface Disturbance (% of Project Area)	Acres of Long-Term Surface Disturbance (% of Project Area)
Clayey Saltdesert	0.3 (0.14%)	0.1 (0.05%)
Clayey Slopes	3.2 (0.13%)	0.9 (0.04%)
Foothill Swale	0 (0%)	0 (0%)
Rolling Loam	0 (0%)	0 (0%)
Not Rated or Not Available	3.0 (0.11%)	0.9 (0.03%)
Total Acres	**6.5 (0.11%)**	**1.9 (0.03%)**

The proposed interim reclamation, if successful, would reduce the initial surface disturbance by approximately 4.6 acres (70 percent) on the proposed well pads and access roads. As such, residual surface disturbance of vegetation in the Project Area would be approximately 1.9 acres for the LOP.

Vegetation removal and soil handling associated with the proposed action would have both direct and indirect impacts on vegetation resources. Direct impacts would include removal of vegetation and modification of species composition and structure. Indirect impacts may include increased potential for weed invasion, increased exposure of soils to accelerated erosion, increased potential for fugitive dust and degradation and loss of topsoil and soil microorganisms.

Increased roadway infrastructure and vehicle traffic in the Project Area could lead to loss or modification of plant habitat due to the spread of invasive weed species, and an increase in fugitive dust. Weed species may compete with individual special status plants, potentially resulting in loss of individuals and degradation of special status plant habitat. Fugitive dust from areas cleared of vegetation, such as roadways, may affect photosynthesis, respiration, and transpiration and allow the penetration of phytotoxic gaseous pollutants (Farmer 1993).

Specific actions set out under the proposed action, including revegetation of disturbed areas as set out in the reclamation plans, control and prevention of noxious weeds, and dust abatement would reduce impacts to vegetation communities in the Project Area.

Environmental Consequences of the No Action Alternative: Under the no action alternative, the proposed wells and supporting infrastructure would not be approved. Thus, under the no action alternative, impacts to vegetation communities in the Project Area resulting from ongoing energy development activities would remain unchanged from current levels and trends.

Mitigation: 1. All seed tags will be submitted to the designated Natural Resource Specialist (NRS) within 24 hours from the time the seeding activities have ended via Sundry Notice (SN). The SN will include the purpose of the seeding activity (i.e., seeding well pad cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well

pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his or her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, an estimate of the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.

2. The designated NRS will be notified 24 hours prior to beginning all reclamation activities associated with this project via email or by phone. The designated NRS for this project is Brett Smithers (Phone: (970) 878-3818; Email: brett.smithers@blm.gov).

3. In an attempt to track interim and final reclamation of federal actions related to the development of federal mineral resources, the operator shall submit Geographic Information System (GIS) data to the White River Field Office (WRFO) for any post construction (i.e., "as-built") polygon feature that was included in the Application for Permit to Drill (APD) or Sundry Notice, and associated with the proposed action. GIS polygon features may include, but are not limited to, constructed access roads, existing roads that were upgraded, pipeline corridors, and well pad footprints. Geospatial data will be submitted as ArcView datasets (i.e., shapefiles or features), ArcInfo coverages, or as ArcView compatible data files (e.g., AutoCAD export .dwg files). All AutoCAD files must include the projection information and/or spatial (datum) reference to allow import into a spatially referenced GIS format. The preferred spatial reference for AutoCAD .dwg files is State Plane, Colorado North, NAD83, feet. GIS data shall be submitted electronically to BLM, WRFO Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov; Phone: [970] 878-3818) using the 1983 Geographic Coordinate System (NAD 83 datum). These data shall be submitted within 14 calendar days from the time when construction-related activities have ended for all geographic features associated with the proposed action. If the operator is unable to submit the required information within the specified time period, the operator shall notify the designated BLM contact person (see below) via email or by phone, and provide justification supporting an extension of the required data submission time period. Internal and external review of the reporting process and the adequacy of the associated information to meet established goals will be conducted on an on-going basis. New information or changes in the reporting process will be incorporated into the request, as appropriate. If the operator is unable to send the data electronically, the operator shall submit the data on compact disk(s) to:

BLM, White River Field Office
220 East Market Street
Meeker, Colorado 81641
Attn: Brett Smithers

If for any reason the location or orientation of the geographic feature associated with the proposed action changes, the operator shall submit updated GIS data to BLM, WRFO within 7 calendar days of the change. This information should be submitted via Sundry Notice.

4. A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by 15 April and 15 August of each calendar year, and will include the well

number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, estimate of acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person(s) responsible for developing the report. The report will be accompanied with maps showing each point (i.e., well pad), polygon, or polyline (i.e., pipeline) feature that was included in the report. Geospatial data will be submitted using the NAD83 UTM, Zone 12 North projected coordinate system, the Transverse Mercator projection, and the GCS North American 1983 geographic coordinate system (NAD 83 datum). In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report, and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report. The Reclamation Status Report will be submitted electronically via email and as a hard-copy to Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov). Please submit the hardcopy to:

BLM, White River Field Office
220 East Market Street
Meeker, Colorado 81641
Attn: Brett Smithers

Finding on Public Land Health Standard for Plant and Animal Communities (partial, see also Wildlife, Aquatic; and Wildlife, Terrestrial): Most plant communities within the Project Area have an appropriate age structure and diversity of species which meet the criteria established in the standard for vegetation on a watershed basis. With successful reclamation, implementation of the proposed action would not change this status. The no-action alternative would not affect this standard. Thus, it is expected that both the proposed action and the no action alternative would continue to meet this standard for plant communities.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Noxious weeds are plants that are designated by Federal, State, or county governments as injurious to public health, agriculture, recreation, wildlife, or property. Noxious weeds known, or historically known, to occur in the area include: perennial pepperweed (*Lepidium latifolium*), hoary cress (*Cardaria draba*), Russian knapweed (*Acroptilon repens*), cheatgrass (*Bromus tectorum*), and halogeton (*Halogeton glomeratus*). Additional noxious weed species which may occur within the Project Area include: spotted knapweed (*Centaurea maculosa*), houndstongue (*Cynoglossum officinale*), tamarisk (salt cedar) (*Tamarix ramosissima*), common mullein (*Verbascum thapsus*), black henbane (*Hysocyamus niger*), bull thistle (*Cirsium vulgare*), Canada thistle (*Cirsium arvense*), dalmatian toadflax (*Linaria dalmatica*), and narrow-leaved toadflax (*Linaria genistifolia*) (Rio Blanco County 2008).

Invasive weeds include plants that are not listed as noxious, but are not native to a geographical area. Invasive species known to occur in the Project Area include: Blue mustard (*Chorispora tenella*), flixweed (*Descurainia sophia*), curveseed butterwort (*Certatocephala testiculata*),

yellow alyssum (*Alyssum alyssoides*), western salsify (*Tragopogon dubius*), and tumble mustard (*Sisymbrium altissiumum*) (B&A 2008a).

A site-specific pre-construction weed survey was conducted within PE Federal 29-15 and 36-05 and their associated access routes in the summer of 2008. The noxious weeds documented during this survey include cheatgrass and halogeton. The invasive species documented during the survey include curveseed butterwort and tumble mustard (B&A 2008a).

Environmental Consequences of the Proposed Action: Surface disturbance of approximately 6.5 acres would allow for the introduction and expansion of invasive and noxious weed species in the Project Area. Roads provide a major conduit for the spread of exotic plants into natural areas, particularly in arid and semiarid landscapes of the American West (Gelbard and Belnap 2003). Clearing of vegetation and soils, addition of fill, and grading of roads and well pads could create areas of deep, bare soil that would be susceptible to exotic seed establishment (Trombulak and Frissell 2000). Negative impacts of noxious and invasive weeds can include 1) reduction in the overall visual character of an area; 2) competition with, or elimination of, native plants; 3) reduction or fragmentation of wildlife and threatened and endangered plant habitats; and 4) increased soil erosion (Gelbard and Belnap 2003).

Specific measures outlined in the proposed action, including revegetation of disturbed areas as provided for in the reclamation plans, would reduce impacts from invasive, non-native weed species in the Project Area. Interim reclamation would occur on about 4.6 acres (or 70 percent) of the estimated 6.5 acres of total initial surface disturbance. As such, approximately 1.9 acres of disturbance would remain for the LOP. In addition to interim reclamation, Piceance Energy has also committed to several additional mitigation measures related to weed control including: cleaning equipment prior to entering weed free zones, monitoring disturbed areas for the presence and extent of weed species, and following appropriate BLM guidance related to herbicide application to control and eradicate weed species. Assuming successful implementation of these protection measures, the potential impacts described above would be reduced.

Environmental Consequences of the No Action Alternative: Under the no action alternative, there would be no change from the present condition.

Mitigation: No mitigation measures are recommended.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: There are no threatened or endangered (T&E) animals known to inhabit or derive important use from the Project Area. The Project Area does provide water to the White River (and subsequently the Green River) which provides habitat for the Federally-listed Colorado River endangered fish species (i.e., the Colorado pikeminnow, humpback chub, razorback sucker and the bonytail). The USFWS has designated critical habitat for the Colorado pikeminnow (*Ptychocheilus lucius*) along the White River, including the confluence of Stinking

Water Creek and Red Wash, approximately 10.5 miles downstream of the Project Area (USFWS 2008). In addition, critical habitats for the bonytail (*Gila elegans*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*) have been designated further downstream along portions of the White and Green Rivers, and their respective 100-year floodplains (USFWS 2008).

Black-footed ferrets (*Mustela nigripes*) are listed as federally endangered and are currently being re-introduced into portions of their historic range within northwestern Colorado. The preferred habitat of this species includes short-grass and mid-grass prairies to semidesert shrublands (Fitzgerald et al 1994). This species has co-evolved with prairie dogs, relying on their burrows for shelter and hunting opportunities. Approximately 512 acres of CDOW-identified habitat for the prairie dog, and thus potential black-footed ferret habitat, occur within the Project Area.

Although the black-footed ferret is not known to exist within the Project Area, a potential black-footed ferret reintroduction area, as established by the BLM WRFO in 1997, is located approximately three miles to the northeast of the Project Area and approximately six miles from PE Federal 29-15. There is a remote possibility that black-footed ferrets may at some point during the 30-year life of the project, occupy the existing prairie dog colonies within the Project Area, specifically those near to PE Federal 29-15.

Several BLM WRFO sensitive animal species are known to inhabit or derive use from the Project Area. The following BLM WRFO sensitive animal species either have the potential to occur within the Project Area or be affected by development activities within the Project Area: Townsend's big-eared bat (*Corynorhinus townsendii*), fringed myotis (*Myotis thysanodes*), bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*), greater sage-grouse (*Centrocercus urophasianus*), burrowing owl (*Athene cunicularia*), and the midget faded rattlesnake (*Crotalus concolor*).

The two bat species are designated as BLM sensitive species by the WRFO (BLM 2007a). The Townsend's big-eared bat is also considered a State species of special concern (CDOW 2007a). While pinyon-juniper woodlands and suitable rock crevices provide potential roosting sites and foraging opportunities for the two bat species, to date no individuals of these species have been observed in the Project Area.

Under the authority of the ESA, the USFWS delisted the bald eagle in the lower 48 States (except Arizona) from the Federal list of endangered and threatened wildlife, effective August 8, 2007 (72 Federal Register 37346). The species is currently protected by the MBTA and by the Bald and Golden Eagle Protection Act of 1940 (16 U.S.C. 668a-668d), as amended. The bald eagle is also designated as State threatened by the CDOW (CDOW 2007b).

Bald eagle wintering habitat (i.e., roosting sites and foraging areas) is typically associated with food source concentrations, including major rivers that remain unfrozen where fish and waterfowl are available and areas near ungulate winter ranges that provide carrion. Roadways, with their potential to provide roadside carrion, are another of the bald eagle's primary winter use areas. Bald eagles may forage opportunistically for carrion and small mammals across the Project Area from November through March.

According to the Colorado Division of Wildlife (CDOW), the entire Project Area is bald eagle winter range. The CDOW has identified a concentrated winter use area along the White River, approximately 5 miles east of the Project Area. Additionally, a number of bald eagle winter roost sites are located in mature cottonwood forests along the White River.

The ferruginous hawk is a BLM WRFO sensitive raptor species. It is found throughout grasslands, agricultural lands and shrub-steppe of the arid west. Common prey for the ferruginous hawk includes lagomorphs, rodents and other small mammals, such as prairie dogs. Ferruginous hawk nests may be located on trees, rock outcrops, cliffs, utility structures or on high points of ground.

BLM WRFO raptor nest data has identified two ferruginous hawk nests immediately outside the northeast boundary of the Project Area. Raptor nest surveys from September 2008, did not find any ferruginous hawk nests within 0.5 mile of the proposed well pads (B&A 2008b).

The greater sage-grouse is a BLM WRFO sensitive species due to the widespread loss and fragmentation of sagebrush habitat throughout its historic range. In Colorado, the species occupies sagebrush habitat of the Colorado Plateau from 6,000 to 9,000 feet in elevation (Sibley 2003). The CDOW has identified approximately 251 acres of greater sage-grouse overall range in the northeast portion of the Project Area. The proposed action would not involve this overall range. No leks, which are courtship display and mating areas, are known to exist within or near to the Project Area.

The burrowing owl is a BLM WRFO sensitive species. Burrowing owls are summer residents on the plains of Colorado and usually arrive on breeding grounds from late March to mid-April. The species is associated with dry, open habitat that has short vegetation and contains an abundance of burrows (Johnsgard 2002). In Colorado, prairie dog burrows are the most important source of burrowing owl nest sites. The CDOW has identified approximately 512 acres of white-tailed prairie dog overall range within the Project Area. There are no known burrowing owl nests within the Project Area and burrowing owl surveys have not been conducted for the Project Area. An inactive prairie dog colony is present at PE Federal 29-15 and burrowing owls have the potential to occur there.

The midget faded (western) rattlesnake is a BLM WRFO sensitive species. It is found in a variety of desert-like vegetation communities throughout western Colorado, eastern Utah and southern Wyoming. This snake preys on small mammals, birds, lizards and occasionally amphibians. The midget faded rattlesnake may occupy mammal burrows, crevices, or caves and may occur in large numbers (CDOW-NDIS 2008). Although rattlesnakes have not been observed there, they may occur anywhere throughout the Project Area.

Environmental Consequences of the Proposed Action: Implementation of the proposed action could alter potential habitat for the two sensitive bat species in proximity to and within the Project Area. Increased noise levels from traffic and construction operations could directly impact potential roosting sites, and could cause temporary displacement, reduced foraging opportunities, or abandonment of these areas. As habitat for these species is widespread

throughout Colorado, the proposed action may affect individual bats, but would not likely result in a trend towards Federal listing of any of the species.

As no development is proposed within ½ mile of the White River corridor, the proposed action would not affect bald eagles that may roost in these areas. Within the Project Area, construction of proposed well pads and associated access roads during the winter could result in the temporary displacement of bald eagles from potential winter foraging habitats. Surface-disturbing activities would result in the direct loss of approximately 6.5 acres of prey species' habitat, thereby decreasing the abundance of upland prey species in the Project Area for the short-term. Further, increased traffic on area roads could increase the potential for vehicle collisions with carrion-feeding eagles.

Potential impacts to ferruginous hawks could include temporary displacement or avoidance of potential nesting sites, increased potential for collisions with vehicles or the loss of approximately 6.5 acres of foraging habitat. Interim and final revegetation actions and adherence to the protocol for carrion removal from roadways could reduce potential impacts to the ferruginous hawk.

As no burrowing owl nests were identified within ½ mile of either proposed well, it is not likely that burrowing owls would be directly impacted by the proposed action. Indirect impacts to burrowing owls could include the loss of approximately 0.3 acres of prairie dog habitat which provides potential future nesting grounds for the burrowing owl. Interim and final revegetation actions could reduce potential impacts to the burrowing owl.

Impacts to the midget faded rattlesnake would be limited to a short-term loss of 6.5 acres of prey habitat. This equates to approximately 0.1% of the entire Project Area. After successful interim reclamation, potential prey habitat loss is expected to be approximately 1.9 acres for the LOP.

For the purposes of this EA, impacts to the endangered Colorado River fishes are analyzed collectively, as these species are all affected by activities that deplete and/or degrade the flow of downstream waters to the Upper Colorado River Basin, including those portions that contain USFWS-designated critical habitat. Development activities in the Project Area could primarily affect the Colorado River fish and their USFWS-designated critical habitats by depleting water from the Upper Colorado River Basin. Depletions can reduce the ability of the White and Green Rivers to create and maintain the physical habitat (areas inhabited by, or potentially habitable to, the Colorado River fish for spawning, development of fish larvae, feeding, or serving as corridors between these areas) and the biological environment. Water depletions can also contribute to alterations in flow regimes that favor non-native fish.

In order to address depletion (and other) impacts on the Colorado River fish, a Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) was initiated on January 22, 1988. Under the 1988 Recovery Program, any water depletions from tributary waters within the Colorado River drainage are considered to "*jeopardize the continued existence"* of these fish. In order to further define and clarify the recovery processes in the Recovery Program, a Section 7 agreement was implemented on October 15, 1993, by Recovery Program participants. Incorporated into this agreement is a

Recovery Implementation Program Recovery Action Plan (RIPRAP). The RIPRAP identifies actions currently required to recover the endangered fish species in the most expeditious manner. Included in the RIPRAP was the requirement that a one-time depletion fee would be paid to help support the Recovery Program for all non-historic water depletions (i.e., occurring after January 1988) from the Upper Colorado River Basin. The depletion fee of $18.29 per acre-foot, as of October 1, 2008, was intended to be the reasonable and prudent alternative to avoid jeopardy to the endangered fishes by depletions to the Upper Colorado River Basin (USFWS 2007, as amended). In 1995, the USFWS eliminated the water depletion fee for non-historical water depletions (permitted after January 1988) from the Upper Colorado River Basin of 100 acre-feet or less (USFWS 1995, as amended).

In May 1994, the Colorado BLM prepared a Programmatic Biological Assessment (PBA) that addressed water-depleting activities associated with BLM's management programs in the Colorado River Basin. The Colorado BLM has recently submitted an updated PBA that specifically addresses Upper Colorado River depletions attributable to the BLM's Fluid Mineral Program in western Colorado. Water depletions considered in the BLM's proposed PBA include water used for access road dust abatement, hydrostatic testing of newly constructed flow and trunk pipelines, and the drilling and completion of wells. The average annual depletion value being analyzed would be derived from the number of new oil and gas wells drilled from October 2007 through September 2008. If finalized, this collective annual depletion figure would form the basis for a one-time fee paid to the National Fish and Wildlife Foundation to help fund the Upper Colorado River endangered fish program—an established strategy that is expected to comply with the reasonable and prudent alternative and provide the means to avoid jeopardy from water depletions attributable to the development of Federal oil and gas reserves and Federally connected actions.

Each of the two proposed wells identified in the proposed action may require up to approximately 1.3 acre-feet for drilling and completion activities, for a total of approximately 2.6 acre-feet. Water needed for drilling and completion activities would be obtained from existing water permits from the City of Rangely through a third party, and would be trucked to the drilling sites. Water used for drilling and completion activities would be cleaned, tested and reused for drilling and completion activities at the next proposed well. Therefore, the total amount of water used for these actions would likely be less than the 2.6 acre-feet, as estimated above. An unknown amount of additional water would be used for dust-abatement activities. Water needed for these actions would also be obtained from existing water permits from the City of Rangely through a third party. This estimated total quantity of water used for the project would be considered a non-historic depletion to the Upper Colorado River Basin.

Based on the estimated non-historic water depletion from the Upper Colorado River Basin, the proposed action **"***may affect, is likely to adversely affect*" the Colorado River fish and their USFWS-designated critical habitats downstream of the Project Area in the White and Green Rivers. Because the effects of this project on Colorado River fish and their critical habitats are considered integral with collective depletion impacts presently being evaluated within BLM's Programmatic Consultation with the USFWS, the proposed action requires no further consultation.

Potential impacts to the black-footed ferret could include an approximately 0.3-acre loss of habitat, including habitat for prey species, until the area is reclaimed. Indirect impacts, however, could extend beyond the 0.3 acres of vegetation loss due to noise disturbances across the landscape which may cause black-footed ferrets to occupy less than optimal habitat. However, currently the black-footed ferret is not present within or near the Project Area, thus impacts to the species are not anticipated during the construction phase of the project. If ferret presence were confirmed within the Project Area during the maintenance and production phase of the project, no timing/spatial restrictions would be placed on Piceance Energy. The proposed action *"may affect, is not likely to adversely affect"* the black-footed ferret.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts from ongoing energy development activities in the Project Area as they relate to threatened, endangered or sensitive animal species would remain unchanged from current levels and trends.

Mitigation: To minimize the potential for vehicle collisions with raptors, the operator should advise project personnel regarding appropriate speed limits in the Project Area and CDOW should be contacted regarding the presence of carrion within or along roadways.

Finding on the Public Land Health Standard for Threatened and Endangered Species: Implementation of the proposed action or no action alternative would not prevent lands in the Project Area from meeting the public land health standards for threatened or endangered terrestrial species. The proposed action is considered an incremental addition to those lands dedicated to mineral development.

The proposed action would adversely affect the Colorado River fish and their USFWS-designated critical habitat. As such, the proposed action would detract incrementally from, but would not compromise continued attainment of the public land health standard for T&E aquatic species. The no action alternative would continue to meet the public land health standard.

MIGRATORY BIRDS

Affected Environment: The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703 et seq.), as amended, makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products, unless permitted by regulations. Executive Order (EO) 13186 sets forth the responsibilities of Federal agencies to further implement the provisions of the MBTA. EO 13186 requires that agencies integrate bird conservation principles and practices into activities on their lands and ensure that Federal actions evaluate the effects of actions and agency plans on migratory birds. The U.S. Fish and Wildlife Service (USFWS) has compiled a list of Birds of Conservation Concern (BCC), which identifies migratory and non-migratory bird species (not including those already designated as Federally threatened or endangered) that, without conservation actions, may become candidates for listing under the Endangered Species Act (ESA) of 1973, as amended (USFWS 2002). Additionally, the Partners in Flight (PIF) North

American Landbird Conservation Plan guides the protection of bird species not protected by other existing conservation programs (Rich et al 2004).

Pinyon-juniper woodlands support the largest variety of nesting bird species of any upland vegetation cover type in the western United States (CPIF 2000). Within the Project Area, numerous migratory birds occupy the pinyon-juniper woodlands and big sagebrush shrublands, including several species identified as BCC by the USFWS or high priority by the CPIF. The USFWS identifies the following migratory BCC birds within pinyon-juniper woodlands and sagebrush shrublands of Bird Conservation Region 16: black swift, Lewis' woodpecker, gray vireo, pinyon jay, Virginia's warbler, black-throated gray warbler (USFWS 2002). The CPIF has identified the following species as high priority within sagebrush shrublands and mountain shrublands within physiographic region 62: black swift, Virginia's warbler, green-tailed towhee, sage sparrow, and brewer's sparrow (CPIF 2000).

Similar to the migratory bird species discussed above, all raptor species and their nests are protected from take or disturbance under the MBTA. Potential raptor nesting habitat consists of mature and old growth stands of pinyon-juniper woodlands as well as rock outcrops/cliffs. Old growth stands of pinyon-juniper woodlands and suitable rock nesting substrate exist in localized sites throughout the Project Area. Raptor species with the potential to nest in the Project Area are listed below in Table 8.

Table 8. Raptor species potentially occurring in the Project Area.

Species	Scientific Name	Nesting Habitat
American Kestrel	*Falco sparverius*	Cliffs
Burrowing Owl	*Athene cunicularia*	Prairie dog burrows
Cooper's Hawk	*Accipiter cooperii*	Pinyon-juniper
Ferruginous Hawk	*Buteo regalis*	Arid grasslands, isolated trees
Golden Eagle	*Aquila chrysaetos*	Cliffs
Great-horned Owl	*Bubo virginianus*	Pinyon-juniper, cliffs
Long-eared Owl	*Asio otus*	Pinyon-juniper
Northern Goshawk	*Accipiter gentillis*	Pinyon-juniper
Northern Harrier	*Circus cyaneus*	Grasslands, marshes
Northern Pygmy Owl	*Glaucidium californicum*	Pinyon-juniper
Prairie Falcon	*Falco mexicanus*	Cliffs
Red-tailed Hawk	*Buteo jamaicensis*	Cliffs, pinyon-juniper
Sharp-shinned Hawk	*Accipiter striatus*	Pinyon-juniper
Swainson's Hawk	*Buteo swansoni*	Isolated trees

Source: Sibley 2003.

The ferruginous hawk, burrowing owl and bald eagle are considered BLM WRFO sensitive species, and as such, are discussed under the Threatened, Endangered and Sensitive Animal Species section below.

Surveys by both the BLM and Buys & Associates, Inc. (B&A) have been completed in the past several years. These surveys have been project-driven and are limited in extent, but have documented nesting activity throughout the Project Area by red-tailed hawks, great-horned owls, ferruginous hawks and golden eagles. As of October, 2008, there were no known raptor nests within ½ mile of either proposed well location or their associated access roads (B&A 2008b).

Environmental Consequences of the Proposed Action: Approximately 6.5 acres of habitat for raptor prey species such as small mammals, songbirds, and reptiles would be disturbed by the proposed action. Rodriguez-Estrella et al. (1998) identified loss or fragmentation of habitat for prey species as a contributor to raptor population declines. Increased traffic on Project Area roads could also increase the potential for vehicle collisions with carrion-feeding raptors.

Indirect, negative impacts associated with the loss of bird nesting habitats (i.e., habitat fragmentation) would include decreased productivity and lower recruitment of juveniles into the population. These indirect impacts cannot be quantified. Negative impacts to migratory birds dependent on pinyon-juniper woodlands may occur as a result of PE Federal 36-05, but are not likely to occur at PE Federal 29-15. However, PE Federal 29-15 is located at an inactive prairie dog colony and there is the potential for burrowing owls to nest within or near the proposed location.

Specific measures outlined under the proposed action would reduce both direct and indirect impacts to migratory birds. Successful reclamation and implementation of a weed control plan would contribute to the re-establishment of shrub or woodland habitats in the long term. Interim reclamation would occur on about 4.6 acres (or 70 percent) of the estimated 6.5 acres of total initial surface disturbance. As such, approximately 1.9 acres of disturbance would remain for the LOP. Adherence to surface occupancy restrictions and seasonal timing limitations for individual raptor species associated with surface-disturbing activities at proposed development sites would also minimize disturbances to nesting raptors.

The development of the reserve pit associated with the proposed action may attract waterfowl and other migratory birds for purposes of resting, foraging, or as a source of free water. Mortality events that include migratory waterfowl (e.g., several teal species) contacting oil-based drilling fluids stored in reserve pits during or after completion operations have been documented in the WRFO resource area, and these events constitute a violation of the MBTA. The extent and nature of the problem is not well-defined, and until vectors of mortality are better understood, management measures must be conservative and directed at preventing bird contact with produced water and drilling and completion fluids which may pose a risk (i.e., acute or chronic toxicity, compromised insulation) to these species.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts from energy development on migratory birds, including raptors, would remain unchanged from current levels and trends.

Mitigation: 1. To minimize the potential for vehicle collisions with raptors, the operator should advise project personnel regarding appropriate speed limits in the Project Area. Additionally, the CDOW should be contacted regarding the presence of carrion within or along roadways.

2. The Operator would be responsible for implementing mitigation measures that minimize bird injuries or mortality as a result of contact with produced water in the reserve pit. The most effective measure currently being used includes the use of netting to cover the pit. The use of plastic balls that float on the surface and reduce the area that might be perceived by waterfowl as a place to rest and/or forage has also been used in certain circumstances, with limited results. The use of plastic flagging has proven to be ineffective at deterring use by migratory waterfowl for foraging, resting or as a source of free water, and is strongly discouraged. The Operator would notify WRFO Natural Resource Specialist, Brett Smithers via Email (brett_smithers@blm.gov) or by phone ([970] 878-3818) of the method that would be used to prevent impacts to birds at least two weeks prior to the date when completion activities are expected to begin. The BLM-approved method would be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds would be reported to the Petroleum Engineer Technician immediately.

WILDLIFE, AQUATIC (includes a finding on Standard 3) Refer also to the Threatened, Endangered and Sensitive Animal Species section for a discussion of fisheries potentially influenced by the proposed action.

Affected Environment: Drainages which flow through the Project Area are considered ephemeral, except for Stinking Water Creek, which is intermittent. Various seeps and springs, although not mapped by the BLM, may be present and could potentially provide isolated habitat for amphibians. There are approximately 48 acres of floodplain habitat identified within the Project Area. These areas may support small populations of amphibians, however, there is no information suggesting that these drainages support the northern leopard frog (*Rana pipiens*), a State Species of Special Concern and a BLM-sensitive species. There is no evidence to support the presence of the great basin spadefoot (*Spea intermontana*), a BLM-sensitive species. There are no fisheries present within the Project Area.

Environmental Consequences of the Proposed Action: Although implementation of the proposed action would not directly affect aquatic habitats in the Project Area, project-related activities under the proposed action could indirectly affect aquatic habitats in the Project Area. Specifically, construction of the proposed well pads and their associated roads and pipelines could increase erosion and sedimentation, and may change surface water runoff patterns, thereby affecting area drainages to the White River (e.g., Stinking Water Creek and Red Wash). Further, increased traffic levels in the Project Area would increase fugitive dust, which subsequently could reduce productivity of aquatic vegetation.

Specific measures set out in the proposed action, including implementation and adherence to a stormwater management plan and use of dust abatement practices, would reduce the above-

mentioned indirect impacts to aquatic habitats in the Project Area. Erosion control measures would minimize impacts related to increased sediment loading and changes to surface water runoff patterns for area drainages. Dust abatement practices would reduce impacts to aquatic habitats by minimizing fugitive dust along Project Area roads.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to aquatic wildlife associated with area drainages resulting from ongoing energy development activities in the area would remain unchanged from current levels and trends.

Mitigation: No mitigation measures are recommended.

Finding on Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): Neither the proposed action nor the no action alternative would have any effective influence on the function or condition of drainages within the Project Area, aquatic habitat values, or the public land health status. Thus, it is expected that both the proposed action and the no action alternative would continue to meet this standard for animal communities.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The Project Area supports a diversity of wildlife and wildlife habitats. Species occurrences are typically dependent on habitat availability, carrying capacities, and the degree of existing habitat disturbance. The 5,763-acre Project Area is comprised primarily of sagebrush and desert scrub habitat, interspersed with juniper woodlands. Naturally occurring water resources are limited to channel riparian habitats associated with various drainages within the Project Area.

Most non-game species within the Project Area are common across the WRFO and have wide distributions within northwest Colorado. There are no narrowly endemic or highly specialized, terrestrial wildlife species known to inhabit those lands potentially affected by the proposed action. Consequently, the relationship of most of the typical, non-game species to the proposed project is not discussed in the same depth as those game species (e.g., mule deer) that are of high interest or unique value.

Mule deer are abundant statewide in Colorado, where they occupy edge habitats, within pinyon-juniper and mountain shrub mosaic landscapes (CDOW 2007c). The Project Area is included as part of the Data Analysis Unit D-6, Game Management Unit 10 (CDOW 2007c). According to the CDOW, the entire Project Area is mule deer winter range. Approximately 1,193 acres of CDOW-designated severe winter range and 5,330 acres of CDOW-designated winter concentration habitat exist within the Project Area. Additionally, approximately 5,400 acres of CDOW-designated mule deer summer range is located within the Project Area. The proposed wells and their associated access roads would be located outside the severe winter habitat designated for mule deer by the CDOW.

Elk are common in most mountainous regions of Colorado, where they can be found in mountains during the summer and in foothills and grasslands during the winter. Elk are gregarious animals, with herds of more than 200 occurring in open habitats. In more heavily forested habitats, group sizes are typically smaller. Elk summer at higher elevation ranges in aspen, conifer, and mountain browse vegetation types where they are more or less evenly distributed. The entire Project Area is identified as an elk concentration area by the CDOW. Approximately 677 acres of the Project Area have been mapped as severe winter range for elk by the CDOW. The Project Area is included as part of the Data Analysis Unit E-21, Game Management Unit 10 (CDOW 2007c).

Pronghorn typically inhabit grasslands and semi-desert shrublands of the western and southwestern United States. This species is most abundant in short- and mixed-grass habitats where their diet is split between forbs and browse. Approximately 1,226 acres of CDOW-designated pronghorn antelope overall range is located within the northeast portion of the Project Area and near PE Federal 29-15. According to the CDOW, a resident population of pronghorn inhabits approximately 211 acres of the Project Area along Stinking Water Creek near PE Federal 29-15 well. The Project Area is included as part of the Data Analysis Unit A-21, Game Management Unit 10 (CDOW 2007c).

Environmental Consequences of the Proposed Action: Implementation of the proposed action would result in the direct loss of wildlife forage and cover habitat due to the removal of vegetation in the Project Area. Indirect impacts to wildlife include increased visual and noise disturbances, increased habitat fragmentation, and displacement of wildlife to lesser quality habitat; all of which combine to reduce the usability of available habitat within the Project Area. The estimated surface disturbance of approximately 6.5 acres of wildlife habitat associated with the construction of well pads and roads would reduce the habitat availability and relative habitat values for a variety of common wildlife species. Long-term habitat modification would be expected to have minimal impacts on local wildlife populations as these species are not tightly restricted to specific habitat types.

Visual and noise disturbances from increased traffic levels and construction, drilling, and completion activities could temporarily displace wildlife from habitats in areas of human activity. Construction, drilling, and completion activities could result in temporary displacement from specific affected habitats during the entire construction period. Production activities could result in shorter temporary displacement only during well visits (generally a few hours per day). Displaced individual animals that move into less suitable habitats could potentially experience deteriorated physical conditions, decreased productivity, and increased general distress.

Overall, the severity of impacts to wildlife species under the proposed action would depend on the seasonal and daily timing of traffic, construction, drilling, and completion activities, site-specific topography and vegetation, species' sensitivity to human disturbance, and the availability of suitable habitat within and adjacent to the Project Area.

Successful interim reclamation would be realized on about 4.6 acres (or 70 percent) of the estimated 6.5 acres of total initial surface disturbance. As such, approximately 1.9 acres of disturbance would remain for the LOP. Successful final reclamation would further restore

herbaceous forage, and accelerate the reestablishment of woody forage and cover habitat in the Project Area.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to terrestrial wildlife resulting from ongoing energy development activities in the Project Area would remain unchanged from current levels and trends.

Mitigation: To help monitor possible impacts to big game and raptors as result of drilling, completion, and well maintenance (i.e., work-over) activities, the operator shall notify the designated NRS the day the drilling rig moves on to the location and inform him or her of the move. In addition, the operator shall notify the designated NRS within 24 hours from the time the drilling rig moves off the location, when the completion rig moves on to the location and when the completion rig moves off the location. Well maintenance operations would also be reported to the designated NRS within 24 hours from the time the work-over rig moves on to the location and when the work-over rig moves off the location.

Finding on Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Aquatic)*:* The Project Area presently meets the public land health standard for terrestrial animal communities. As conditioned, the proposed action would have negligible long-term influence on the utility or function of big game or non-game habitats in the Project Area. Overall, lands affected by the no action or proposed action would continue to meet the land health standard for terrestrial animals.

CULTURAL RESOURCES

Affected Environment: PE Federal 29-15 well and access road were inventoried at the Class III (100% pedestrian) level on September 17, 2008 (B&A 2008c, Compliance Dated 12/17/2009). The inventory did not result in the identification of isolated finds or archaeological sites. Site 5RB1253, identified during the Class I review as within the surveyed area of the proposed well, was previously collected (Chandler and Nickens 1979, Compliance Dated 11/1/1979; Nickens and Chandler 1979, Compliance Dated 7/13/1979). Site 5RB1254 was not relocated.

PE Federal 36-05 and access road were inventoried at the Class III (100% pedestrian) level on September 18, 2008 (B&A 2008c, Compliance Dated 12/17/2008). The inventory did not result in the identification of any isolated finds or archaeological sites.

Environmental Consequences of the Proposed Action: The proposed action would not impact any known cultural resources. Previously undetected resources within 308 meters of PE Federal 29-15 well could be adversely impacted due to ground vibrations associated with construction and drilling activities. Unauthorized collection could occur due to increased access in the Project Area from the construction of new roads.

Environmental Consequences of the No Action Alternative: There would be no new impacts to cultural resources under the no action alternative.

Mitigation: 1. The operator would be responsible for informing their employees, contractors and subcontractors that they would be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during surface-disturbing activities, the operator would immediately suspend activities in the direct vicinity of the find that might further disturb such materials and immediately contact the authorized officer (AO). Within five working days, the AO would inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator would be required to undertake before the site could be used (assuming in-situ preservation is not necessary); and
- A timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the Colorado State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO would assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator would be responsible for mitigation costs. The AO would provide technical and procedural guidelines for the mitigation. Upon verification from the AO that the required mitigation has been completed, the operator would be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g), the operator would notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator must stop activities in the vicinity of the discovery and protect it for thirty (30) days or until notified to proceed by the AO.

PALEONTOLOGY

Affected Environment: PE Federal 29-15 and associated access road are located in an area mapped as containing Sego Sandstone, the Buck Tongue of Mancos Shale and Castlegate Sandstone formations (Rowley et al 1985). The proposed access road to the well pad would be located over alluvium, and the proposed pad would be located on alluvial cover of silty sand. In 2007, the BLM instituted the Potential Fossil Yield Classification (PFYC) System for paleontological resources on public lands. The new system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources (BLM 2007b). This proposed well and its associated access road are classified as PFYC System, Class 3(moderate). The proposed well pad and access road have been inventoried at the Class III (100% pedestrian) level for fossil resources (Hamblin 2008, Compliance Dated 2.2.2009); no fossils were found.

PE Federal 36-05 and associated access route is in an area mapped as the "Coal Unit" of the Mesaverde Formation (Rowley et al 1985). The proposed well pad would be located on a north-facing terrace, covered with slope wash alluvium, sand and rock fragments. Rock exposures are found along the west and northwest sides and in gullies through the location. This proposed well and its associated access road are classified as PFYC System, Class 3(moderate). The proposed

well pad and access road have been inventoried at the Class III (100% pedestrian) level for fossil resources (Hamblin 2008, Compliance Dated 2/2/2009). Small plant fragment imprints were found at one location and fragments of petrified wood in rocks at another location. Although no paleontological resources of significance were discovered, the area was recorded as locality 5Rb6275.

Environmental Consequences of the Proposed Action: There is the potential to impact scientifically important fossil resources if it becomes necessary to excavate into the underlying rock formation. Such activities may be necessary in order to construct the roads, level the well pads, or excavate the cuttings pits for any of the proposed wells. .

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the no action alternative.

Mitigation: 1. The operator should inform all persons who are associated with the project operations that they would be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately suspend activities in the vicinity of the find that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO would inform the operator as to:

- Whether the materials appear to be of noteworthy scientific interest; and
- The mitigation measures the operator would likely have to undertake before the site can be used (assuming in situ preservation is not feasible).

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO would assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator would be responsible for mitigation cost. The AO would provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator would then be allowed to resume construction.

2. An approved paleontological monitor should be present anytime it becomes necessary to excavate into the underlying rock formation to construct the road, level the well pad, excavate the cuttings pit or bury any of the associated pipelines to the well.

3. It is recommended that spoil piles from pad construction associated with proposed well PE Federal 36-05 be examined for plants and other fossils after construction.

OTHER ELEMENTS: For the following elements (Table 9), only those identified below as "Applicable, Present and Brought Forward for Analysis" would be addressed further.

Table 9. Non-critical elements.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable, Present and Brought Forward for Analysis
Visual Resources			X
Fire Management			X

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable, Present and Brought Forward for Analysis
Forest Management			X
Hydrology/Water Rights			X
Rangeland Management			X
Realty Authorizations		X	
Recreation			X
Wild Horses	X		
Access and Transportation			X
Geology and Minerals			X
Areas of Environmental Concern	X		
Wilderness	X		
Wild and Scenic Rivers	X		
Cadastral	X		
Socio-Economics	X		
Law Enforcement	X		

VISUAL RESOURCES

Affected Environment: The Project Area primarily consists of rolling topography in the middle and foreground viewing distance, with mountains in the background viewing distance to the north. The landscape in the western portion of the Project Area, near the location of PE Federal 29-15, is dominated by a salt desert shrub community, rock outcrops and moderately eroded drainages. The landscape in the eastern portion of the Project Area, surrounding PE Federal 36-05, is characterized by sagebrush with scattered juniper stands and moderately eroded drainages.

The Project Area offers a predominantly natural appearing landscape with little evidence of human activity. Visually noticeable human imprints include an abandoned coal mine near PE Federal 36-05, small mine tailings, an existing road network, and dispersed livestock management facilities. Each of these has introduced new elements of line, form, color and texture into the landscape; however, topographic and vegetative features provide visual screening.

According to the White River ROD/RMP, the entire Project Area has been designated by the BLM as VRM Class III (BLM 1997). The objective of VRM Class III is to partially retain the existing character of the landscape. The level of change to the landscape should be moderate.

Environmental Consequences of the Proposed Action: The construction and operation of oil and gas facilities and associated features such as roads and pipelines would result in both short-term and long-term impacts to the visual landscape.

Exposure of new bare ground in previously vegetated areas would introduce changes to the areas predominate colors of sage green and dark woodland green. Nighttime drilling activities would involve safety lighting, breaking up the generally “black effect” of night in the Project Area. Increased fugitive dust from activities conducted on bare ground would create dust plumes, resulting in visual change in the landscape for short intervals during construction. The

placement of permanent facilities, including two 400 bbl. tanks would introduce new elements of line, form, color and texture, which contrast with the natural landscape.

Visual impacts resulting from construction, drilling and completion of PE Federal 36-05 would be noticeable from both the foreground and middle ground viewing distances, as this proposed well is located in an upland area. Based on location, PE Federal 29-15 would only be visible from the foreground viewing distance.

Visual resource impacts in the Project Area are analyzed in terms of consistency of the proposed action with the existing VRM classification. The proponent has agreed to a number of measures which would reduce the above-mentioned visual impacts. In particular, all permanent facilities located on location longer than 6 months would be painted a Carlsbad Canyon color to match the surrounding environment; water or other approved suppressants would be used during construction activities to abate fugitive dust; and interim reclamation would be implemented on all disturbed areas that are not needed for production activities. Implementation of these measures would minimize direct, indirect, short- and long-term impacts to the visual landscape. This would allow the Project Area to remain consistent with its assigned VRM Class III designation.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to the visual landscape would remain unchanged from current levels and trends.

Mitigation: No mitigation measures are recommended.

FIRE MANAGEMENT

Affected Environment: The two proposed wells are located in the designated "C2-W Spooky Mountain fire management polygon" within the BLM WRFO portion of the Northwest Colorado Fire Management Unit (NWCFMU FMO 2008). This fire management polygon is an area where wildfire is desired but some constraints limit fire use potential and prescribed fire is limited. The appropriate management response strategy within fire management unit (FMU) C involves conditional response utilizing a direct, perimeter or prescription strategy. General fire management unit objectives for FMU C include the following:

- Allow wildland fire to resume its role in the ecosystem through the use of the appropriate management response concept, conditional fire use, and prescribed fire.
- Use prescribed fire and mechanical and chemical means on a site specific basis to improve habitat and critical winter range for identified species using fuel treatments to improve the shrub age class diversity, and to enhance sage-grouse habitat and potential lynx habitat.
- Provide the appropriate level of protection for oil and gas sites and associated facilities.
- Reduce accumulations of hazardous fuels in the wildland-urban interface in order to protect life and property and provide for firefighter safety.

- Provide protection for known heritage sites, scenic corridor and facilities, powerlines and other similar values.

Specific fire management objectives within fire management polygon C2-W include promoting a desired vegetation condition which promotes a vegetation mosaic representing natural distributions of plant communities of varying successional stages. Resource management objectives and constraints within this polygon include protection of the Deserado Coal Mine and associated infrastructure when threatened by public land fires and limits on fire size to 100 acres in juniper and 200 acres in sagebrush. Fire suppression constraints within polygon C2-W include limiting development of new roads or trails through off road use of firefighting equipment (NWCFMU FMO 2008).

While very little woody plant material is available as fuel for wildland fire immediately on the two proposed well locations, there are areas of pinyon-juniper woodlands immediately adjacent to the two well pads and within the overall Project Area. Cheatgrass, a potential wildland fire fuel, is present within the proposed well locations. The proposed Project Area is located in an area with an active fire history. PE Federal 29-15 is located within the boundaries of the 125 acre Spooky Fire which occurred in 2000. This well pad is also located within one mile of three separate small fires which have occurred since 2000. PE Federal 36-05 is also within one mile of three small fires that have occurred since 2000. The Project Area may experience naturally-ignited fires during the course of the year due to the presence of pinyon-juniper woodland, intermixed with sagebrush and grass and an active fire history.

Environmental Consequences of the Proposed Action: Construction of PE Federal 36-05 would involve removal of approximately 8 to 10 existing juniper trees. Due to the small number of trees requiring removal, a build-up of cleared and dried tree material from this proposed site would not likely result in an elevated hazardous fuels condition.

Environmental Consequences of the No Action Alternative: None.

Mitigation: The following mitigation measures would further reduce impacts from uncontrolled fires and should be incorporated as Conditions of Approval (COAs) in the final authorizations.

1. Woody material to be removed from the site would be stock piled to a size not exceeding 5 tons of wood per acre.

2. Excess woody material would be treated in one of the following methods:

- A hydro-ax or other mulching machine could be used to remove the trees. The machines are capable of shredding trees up to 12 inches in diameter and 15 feet tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size and the mulch is evenly scattered across the surface. This mulching action would effectively breakdown the woody fuel and scatter the debris thereby eliminating any hazardous fuel load adjacent to the pipelines, new roads and well pads.

- Cut trees and have them removed for firewood, posts or other products. The branches and tops should be mulched with a chipper or lopped and scattered to a depth of 24 inches or less. If the products are left for collection by the general public, they should be stacked in small, manageable piles along the roadside or pad to facilitate removal.

3. During construction of the well pads and associated access roads, there shall be one 10 lb. A/B/C rated fire extinguisher, one shovel and/or Pulaski or axe for each piece of equipment on site and ready for use in the event of an accidental fire ignition as a result of construction. No fire suppression actions shall be taken on any other fires in the area unless directed by the incident commander. In the event of an accidental ignition or other fire in the area, the contractor or a representative would contact Craig Fire Dispatch at 970-878-5037 so that a qualified fire crew can evaluate the situation for the safety of all crews in the area.

FOREST MANAGEMENT

Affected Environment: The Project Area is within the Wolf Ridge/Red Wash geographic reference area. Although neither of the two proposed well pads is located within vegetation types dominated by forest or woodland communities, construction of PE Federal 36-05 would involve removal of approximately 8 to 10 juniper (*Juniperus osteosperma*) trees. The White River ROD/RMP permits annual commercial and personal use harvest of 200 posts and poles within the Wolf Ridge/Red Wash geographic reference area. Commercial and non-commercial woodlands removed as a result of development, including oil and gas, must be appraised and purchased prior to removal. All permits for harvest of woodland products are subject to the specifications listed in BLM Manual Handbook 5420-l and the COAs listed in Appendix B of the White River ROD/RMP. All restrictions and specifications must be included in, or attached to, the permit authorizing harvest (BLM 1997).

Woodland diseases and pests do exist within the Project Area, but are considered within normal disturbance regime levels. These pests include: pinyon pine beetle (*Ips confusus*), black stain root fungus (*Leptographium wageneri*) and a species of tussock moth (*Dasychira sp.*) which affects junipers. Given the small number of juniper trees requiring removal for the proposed well pad development, there is minimal likelihood for an increase in insects or pathogens as a result of an increase of slash or through direct damage of trees by construction.

Environmental Consequences of Proposed Action: Approximately 8 to 10 juniper trees would be removed as a result of the proposed action. The removal of woodland resources is within the limit established within the land use plan. Following reclamation, juniper trees may reoccupy the site, but given the presence of grazing sheep in the area, the site is not likely to develop into mature woodland.

Removal of the few juniper trees currently present could slightly reduce the potential for outbreak of woodland diseases and pest infestations. Removal of juniper trees in areas historically included in sagebrush and grass communities would increase the open areas preferred as foraging areas by wildlife and livestock. Implementation of applicant-committed protection measures for woodland management would reduce the build-up of cleared woody

material from the Project Area, reducing the likelihood of contributing to possible catastrophic fire events. As required in the White River ROD/RMP, all trees removed in the process of construction would be purchased from the BLM by Piceance Energy. The trees would be cut with a maximum stump height of 6 inches and disposed of by one of the following methods:

a) Trees must be cut before being dozed off the area of disturbance. Trees shall be cut into four-foot lengths, down to four inches in diameter and placed along the edge of the disturbance.
b) Purchased trees may be removed from Federal land for resale or private use. Limbs may be scattered off the area of disturbance but not dozed off.
c) Chipped and scattered.

Environmental Consequences of the No Action Alternative: Under the no action alternative, the proposed wells and supporting infrastructure would not be approved. Thus, under the no action alternative, impacts to forest management resulting from ongoing energy development activities in the Project Area would remain unchanged from current levels and trends.

Mitigation: No additional mitigation measures for forest management, beyond those described above, are recommended.

HYDROLOGY AND WATER RIGHTS

Affected Environment: Refer to the water quality section above for a discussion of the affected environment influencing hydrology.

Water used to implement the proposed action would be provided from currently permitted private or commercial sources. A search of water rights through Colorado's Decision Support Systems web site was conducted to identify water rights potentially impacted by the proposed action. No water rights were identified.

Environmental Consequences of the Proposed Action: Water would be used during construction activities for drilling, dust control, and hydrostatic testing of the pipelines. The water would be obtained from the City of Rangely through a third party and would be hauled over the approved access roads. The total estimated water needed for each proposed well may be up to 1.3 acre-feet (10,000 barrels), or a total of 2.6 acre-feet for the two proposed wells. No water pipelines would be constructed. The average annual discharge of the White River at Rangely is about 633 cfs (458,271 acre-feet). Therefore, assuming that proposed wells are completed in one year, drilling, completion, and dust control activities would consume about 0.0006 percent of the average annual flow in the White River. Therefore, the use of this water is very unlikely to impact water uses downstream and/or water rights in the area.

Environmental Consequences of the No Action Alternative: Refer to the water quality section above.

Mitigation: Refer to the water quality section above.

RANGELAND MANAGEMENT

Affected Environment: Portions of two livestock grazing allotments occur within the Project Area. The Artesia allotment (06308) is located on the west side of Stinking Water Creek, and the Spooky Mountain allotment (06316) is located east of Stinking Water Creek. Details on each allotment are summarized below in Table 10.

Table 10. Grazing allotment information in the Project Area.

Allotment Name	Type	Use Period	Total BLM Allotment Acres	Total BLM Allotment AUMs	Allotment Acres in the Project Area	AUMs in the Project Area
Artesia	Sheep	12/1 – 4/20	40,099	3,960	352	35
Spooky Mountain	Sheep	11/20 – 4/10	27,464	2,241	5,411	442
		Total	**67,563**	**6,201**	**5,763**	**477**

Source: BLM 2008a, Rangeland Administration System (RAS)

An animal unit month (AUM) is defined as "the amount of forage necessary to sustain one cow and one calf or its equivalent for one month" (BLM 1994). Between the two allotments, there are approximately 477 livestock AUMs on 5,763 acres of land allotted for grazing within the Project Area.

All allotments have been placed in one of three management categories to establish priorities for management: improvement, maintenance and custodial. Both the Artesia and Spooky Mountain allotments have been placed in the "improve" category (BLM 2008a). Designation of categories is dynamic and based on rangeland conditions, present and potential resource production, resource use and conflict, and the opportunity for economic returns from public investment. Of the 144 grazing allotments affected by the White River ROD/RMP, 54 of them have been placed in the "improve" category, and all 54 of those have been identified for development of allotment management plans (BLM 1997). At the time the ROD/RMP was finalized, allotment management plans were developed for 19 of the 54 "improve" allotments. The Artesia allotment did have an allotment management plan; however, the Spooky Mountain allotment did not have an allotment management plan (BLM 1997).

In addition, the access road to PE Federal 36-05 would cross an existing pasture boundary fence. The Burning Mine Reservoir, used as a livestock watering pond, is located northwest of PE Federal 36-05.

Environmental Consequences of Proposed Action: The proposed action would initially result in the removal of approximately 6.5 acres of vegetation (involving 0.5 livestock AUMs) in that portion of the Spooky Mountain allotment located within the Project Area. The proposed action would not affect the Artesia allotment. Successful interim reclamation would reduce the initial surface disturbance by approximately 4.6 acres (70 percent) on the proposed well pads and access roads. As such, residual surface disturbance in the Project Area would be approximately

1.9 acres of vegetation (involving approximately 0.2 livestock AUMs) in the Spooky Mountain grazing allotment within the Project Area for the LOP. Table 11 provides a breakdown of the estimated loss of livestock AUMs by grazing allotment. As shown, activities under the proposed action would result in the initial, or short-term, loss of 0.11 percent and long-term loss of 0.04 percent, of grazing allotment acres in the Project Area.

Indirect effects to livestock grazing could consist of reduced forage quality due to potential weed infestations, and disturbance and displacement of livestock during project construction and drilling phases within the Project Area.

Table 11. Estimated livestock AUMs affected by the proposed action.

Allotment Name	Total Allotment Acres in the Project Area	Initial Loss of Acres in the Project Area (Percent of Total Acres in the Project Area)	Initial Loss of AUMs in the Project Area	Residual Loss of Acres in the Project Area (Percent of Total Acres in the Project Area)	Residual Loss of AUMs in the Project Area
Artesia	352	0 (0.0%)	0	0 (0.0%)	0
Spooky Mountain	5,411	6.5 (0.11%)	0.5	1.9 (0.04%)	0.2
Total	**5,763**	**6.5 (0.11 %)**	**0.5**	**1.9 (0.04%)**	**0.2**

Source: BLM 2008a, Rangeland Administration System.

Certain actions under the proposed action would reduce impacts to authorized livestock management operations. These include revegetation of disturbed areas, implementation of noxious weed control and monitoring and fencing of reserve pits. The pasture boundary fence that would be disturbed by PE Federal 36-05 access road would be realigned in order to allow trucks and trailers to enter the proposed well pad safely. Adjustments to the pasture boundary fence would include installation of a V-notch to allow safe and efficient heavy truck travel. A cattleguard and a wire gate, located immediately adjacent to the cattleguard, would be installed to maintain effective livestock movement and to prevent unauthorized grazing. The access road associated with PE Federal 36-05 would not impact the Burning Mine Reservoir, and would be constructed so as to maintain the integrity and functionality of this reservoir as a wildlife and livestock watering site.

Environmental Consequences of the No Action Alternative: Under the no action alternative, the proposed wells and supporting infrastructure would not be approved. Thus, under the no action alternative, impacts to rangeland management resulting from ongoing energy development activities in the Project Area would remain unchanged from current levels and trends.

Mitigation: To further minimize impacts to rangeland management, the following actions should be incorporated into COAs for each of the final authorization.

1. Where PE Federal 36-05 access road crosses the existing pasture boundary fence, install a minimum 20-foot wide cattleguard to BLM specifications for the lifetime of the project. All cattleguard/fence installation would take place prior to well location, pipeline or facility construction. A minimum 16-foot wide gate would be installed next to the cattleguard to allow

passage for livestock/heavy equipment. All fence construction would be completed to BLM specifications.

2. To offset possible interference or disruption of livestock grazing patterns and distributions, Piceance Energy would work with the BLM and individual grazing permittees to identify and construct additional surface water structures (e.g., water catchments, stock water tanks, etc).

RECREATION

Affected Environment: The Project Area is within the White River Extensive Recreational Management Area (ERMA), which is managed to provide the public with a broad spectrum and diversity of unstructured outdoor recreational opportunities.

Recreational use of lands within the Project Area is best characterized as dispersed. There are no developed recreation sites or facilities. Recreational opportunities within the Project Area include primitive camping, hiking, mountain biking, horseback riding, off-highway vehicle (OHV) use, hunting, cultural resource study, and wildlife viewing. Recreational use of the Project Area is limited, with the highest use occurring during the fall big game hunting season. According to the White River ROD/RMP, motorized vehicle use is limited to existing roadways and trails within the majority of the Project Area.

Environmental Consequences of the Proposed Action: Implementation of the proposed action would result in surface disturbance to approximately 6.5 acres of Federal land that are currently available for recreation in the White River ERMA.

Indirect effects to recreation from the proposed action would consist of diminished recreational experience due to the presence of natural gas facilities and increased human activity within the Project Area. Adverse impacts would be particularly felt by visitors seeking solitude or recreational opportunities in a relatively natural appearing landscape (e.g., hiking, mountain biking, horseback riding, and wildlife viewing). Impacts would be the greatest during construction, drilling and completion activities, when visitors would be subject to increased noise from drilling equipment, increased dust from construction activities and project-related traffic, and increases in human activity. Construction, drilling and completion of PE Federal 29-15 and PE Federal 36-05 are not expected to occur during the big game hunting season, thus impacts to hunting are expected to be minor.

Construction of about 0.2 miles of new roads within OHV limited areas could increase road density, expand the number of roads open for motorized vehicle use, and provide recreational users with increased access to broader portions of the Project Area. The addition of roads could potentially expand road-related recreational opportunities such as hunting. However, all new roads would terminate at proposed well locations and no new loop roads would be created by implementing the proposed action. Therefore, expanded motorized recreation would be minimal.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to recreation use of the Project Area would remain unchanged from current levels and trends.

Mitigation: No mitigation measures are recommended.

ACCESS AND TRANSPORTATION

Affected Environment: The Project Area is accessed by a network of roads including U.S. Highway 40 on the north, State Highway 64 on the south, and Rio Blanco County Roads Nos. 1, 65 and 96. Table 12 provides a summary of traffic volumes on these roads. The use of roads under State and County Road Department maintenance is necessary to access the proposed well sites. However, encroachment permits are not anticipated since no upgrades are proposed to either the State or County road systems.

Table 12. Average daily traffic volumes on roads accessing the project area.

Road No.	Year Data Taken	Mile Marker	Average Daily Traffic County
Rio Blanco County Rd #1	2008	0.0	292
Rio Blanco County Rd #65	2005	3.0	259
Rio Blanco County Rd #96			No Data
State Highway #64	2007	14.1-16.0	2,600
U.S. Highway #40	2007	4.9-11.0	1,000

Sources: Rio Blanco County Road and Bridge Department. 2009.
Colorado Department of Transportation (CDOT). 2009.

Environmental Consequences of the Proposed Action: The primary impacts from the proposed action would be associated with the increased industrial vehicle traffic on State and Rio Blanco County system roads to and within the Project Area, and the construction of new roads in the Project Area. Increased vehicle traffic would result in dust generation, road congestion, noise, accelerated deterioration of roads, and increased potential for vehicle accidents.

Vehicle types using Rio Blanco County and BLM systems roads related to the proposed action include light and moderate weight pick-up trucks, heavy loads and super-heavy vehicles (i.e., those vehicles capable of transporting drilling rigs).

Piceance Energy's commitment to employ dust abatement activities and to properly design and maintain roads would reduce the impacts from increased road dust and would reduce the acceleration of road deterioration. Other actions, including adherence to posted speeds, increased signage, etc., would minimize the potential risk for vehicle accidents.

Should Rio Blanco County road encroachment permits be needed, the County would receive permit fees that would help defray annual maintenance and operational costs of county road upkeep. All of these actions would reduce impacts to access and transportation in the immediate area of the proposed action and the roads and highways leading to the Project Area.

Traditional users of State and Rio Blanco County roads within the Project Area could encounter higher levels of drilling, field development and construction-related vehicle traffic, depending on the activities occurring at the time. This impact could lessen the public's overall experience while in the area. Traffic-related impacts are generally seen as temporary and seasonal in nature. Once the proposed wells are drilled and in production, the daily number of vehicle trips to and in the Project Area would be substantially reduced.

Approximately 1,172 feet, or 0.2 miles, of new access road would be constructed under the proposed action. Adherence to guidance set out in the BLM's "Gold Book" and the BLM's Manual Section 9113 for proper design, construction and maintenance of these roads would reduce impacts to the surrounding environment.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to the existing transportation system from ongoing energy development activities in the Yellow Creek Field would remain unchanged from current levels and trends.

Mitigation: No mitigation measures are recommended.

REALTY AUTHORIZATIONS

Affected Environment: According to the BLM's LR2000 database, there are no pending land uses on Federal lands and/or mineral rights within the Project Area. Existing linear rights-of-way include the COC65586 (power line) and COC64007 (telecommunications line) which parallel Rio Blanco County Road No. 1 at its junction with the access road to PE Federal 29-15.

Environmental Consequences of the Proposed Action: The proposed action would not require right-of-way authorizations for the new access roads as the proposed access roads would be within existing lease boundaries. If the proposed wells are capable of economic production, oil would be held onsite in tanks until a sufficient quantity is present and would be hauled by truck to a processing plant outside the Project Area. As such, no pipeline rights-of-way would be required. Also, water needed for drilling, dust suppression and operations would be trucked over approved access roads. As such, no water pipeline rights-of-way would be required.

Environmental Consequences of the No Action Alternative: Under the no action alternative, the proposed wells and supporting infrastructure would not be approved or constructed, resulting in no additional impacts.

Mitigation: The holder is responsible for obtaining all appropriate realty authorization permits from state and local governments.

GEOLOGY AND MINERALS

Affected Environment: The Project Area is located on the northern edge of the Coal Oil Basin north of Rangely along Stinking Water Creek, Nate Spring Draw and Red Wash, which flow into the White River. The Project Area is underlain by the Upper Cretaceous Mesaverde Formation, Sego Sandstone and the Buck Tongue of the Mancos Shale. The proposed wells have a targeted zone in the Dakota Formation.

Surficial geology of both wells is the Mesaverde Formation. The Mesaverde Formation is divided into the Upper Unit, consisting of brown to yellowish-gray sandstone and yellow-gray shale, and the Main Coal and Minor Coal Units, consisting of sandstone interbedded with carbonaceous shale and coal. The Minor Coal Unit is underlain by the Sego Sandstone, which outcrops in the southern portion of the Project Area. The Sego Sandstone consists of grayish-tan and very light gray sandstone interbedded with brown shale. The Buck Tongue of the Mancos Shale, exposed along the southern boundary of the Project Area, consists of gray-orange shale, thin-bedded sandstone, and gypsum.

Quaternary alluvium is present along the floor of the major valleys within the Project Area and consists of unconsolidated sand, gravel and clay.

Mineral resources near the Project Area include oil and gas deposits, coal and sand and gravel.

The Rangely Field has been the most productive oil field in Colorado for many years. At Rangely, oil is produced from the Weber Sandstone, Salt Wash Sandstone, Morrison Formation and Mancos Shale.

PE Federal 36-05 is located in a an area identified in the Draft WRFO RMP as suitable for surface and underground coal leasing and is less than one mile west of Blue Mountain Energy's Federal Coal Lease COC-8424. An active coal seam fire is located approximately 1,000 feet southwest of this proposed well. The maximum measured thickness is 15 feet. The coal beds in the Main Coal Unit apparently thin to the northwest and southeast, although only the thickest coals are of commercial thickness. The Minor Coal Unit contains thin discontinuous coals; no coal bed thicker than 2.5 feet was observed.

Sand and gravel are quarried from a number of terraces along the White River for use on county roads.

Environmental Consequences of the Proposed Action: Potential impacts to geologic resources from the proposed action include changes to the local topography and slope stability. Well pad excavations would alter the local topography to include square- or rectangular-shaped cuts and fills. Depending on the slopes involved, excavation of well pads and access roads could lead to slope instability. This instability could lead to slumping of material adjacent to the well pad and roads. The slumps would likely occur following rainstorms or during snowmelt. Properly designed well pads and roads, implementation of stormwater management actions, and successful site recontouring and reseeding during interim and final reclamation would reduce these impacts.

Potential impacts to oil and gas resources include the depletion of these resources due to extraction from the two proposed wells. Depletion of natural gas resources would be considered an irreversible effect.

Potential impacts to salable mineral resources include the depletion of sand and gravel deposits due to construction activities for the proposed project. These salable minerals would be purchased from private sources outside the Project Area.

Environmental Consequences of the No Action Alternative: Under the no action alternative, impacts to mineral resources resulting from ongoing energy development activities would remain unchanged from current levels and trends.

Mitigation: Cement would be placed across all coal seams that are encountered from the surface through the base of the Mesaverde Formation.

CUMULATIVE IMPACTS SUMMARY: The proposed action is consistent with the scope of impacts addressed in the White River ROD/RMP. The cumulative impacts of oil and gas activities are addressed in the White River ROD/RMP for each resource value that would be affected by the proposed action.

REFERENCES CITED:

Barfield, B.J., R.C. Warner, and C.T. Haan. 1981. Applied Hydrology and Sedimentology for Disturbed Areas. Oklahoma Technical Press. Stillwater, Oklahoma.

Bureau of Land Management (BLM). 1994. White River Resource Area Draft Resource Management Plan and Environmental Impact Statement. US Department of Interior, Bureau of Land Management, Craig District Office, White River Resource Area, Meeker, Colorado.

_____. 1997. Record of Decision and Approved White River Resource Area Resource Management Plan. US Department of Interior, Bureau of Land Management, Craig District Office, White River Resource Area, Meeker, Colorado. July 1997.

_____. 2007a. White River Resource Area Special Status Species List. Received from Lisa Belmonte, BLM Resource Specialist, via email correspondence with B&A dated September 4, 2007.

_____. 2007b. Potential Fossil Yield Classification System. Available from: http://www.blm.gov/nhp/efoia/wo/fy08/IM2008-009_att1.pdf. Accessed on October 29, 2008.

_____. 2008a. Rangeland Administration System. Land and Resources Reporting System: Authorized use by Allotment Report, and Allotment Master Report. Available from: http://www.blm.gov/ras/index.htm. Accessed on October 20, 2008.

_____. 2008b. Ken Holsinger (Botanist) personal communication with N. Jones (B&A). July 16, 2008.

Buys & Associates (B&A). 2008a. Piceance Energy, LLC. Proposed Federal 27-11, Federal 36-05 and Federal 29-15: 2008 Noxious/Invasive Weed Pre-Construction Inventory Report. July 2008.

_____. 2008b. Piceance Energy, LLC. Proposed Federal 36-05, Federal 27-11, Federal 29-15 Raptor Nest Inventory Report. October 2008.

_____. 2008c. Class III Cultural Resources Inventory of Three Wells and Access Roads, Rio Blanco County, Colorado. Prepared for Piceance Energy, LLC. B&A Report No. CO-01-08. October 6, 2008. pp 18.

Chandler, S. and P. R. Nickens. 1979. Archaeological Investigations of the Coal Development Areas and Coal Transport Corridors for the Moon Lake Project (Moon Lake Project Report 79-5). Nickens and Associates, Inc.

Colorado Department of Public Health and Environment – Air Pollution Control Division (CDPHE-APCD). 2008. Nancy Chick, Environment Protection Specialist, personal communication. January 2008.

Colorado Department of Transportation (CDOT). 2009. 2008 Traffic Information for Highway No. 64 and U.S. No. 40. Available at: http://www.dot.state.co.us/App_DTD_DataAccess/Traffic/index.cfm?display=true Accessed on January 14, 2009.

Colorado Division of Wildlife (CDOW). 2007a. Bats of Colorado. Available from: http://wildlife.state.co.us/WildlifeSpecies/Profiles/Mammals/BatsofColorado/ Accessed on February 25, 2008.

_____. 2007b. Colorado Division of Wildlife Species of Concern. Available from: http://wildlife.state.co.us/WildlifeSpecies/SpeciesOfConcern/. Accessed on February 25, 2008.

_____. 2007c. Herd Management DAU Plan Map for Mule Deer. April 2007.

Colorado Division of Wildlife – Natural Diversity Information Source (CDOW-NDIS). 2008. Midget Faded Rattlesnake. Available from: http://ndis.nrel.colostate.edu/index.html. Accessed on October 27, 2008.

Colorado Partners in Flight (CPIF). 2000. Physiographic Region 87: Colorado Plateau. Pinyon-Juniper. Available from: http://www.rmbo.org/pif/bcp/phy87/pi.htm Accessed on October 22, 2008.

Farmer, A.M. 1993. The effects of dust on vegetation – a review. Environmental Pollution. 79(1): 63-75.

Fitzgerald, J. P., C. A. Meaney, D. M. Armstrong. 1994. Mammals of Colorado. Denver Museum of Natural History and University Press of Colorado.

Gelbard, J. and J. Belnap. 2003. Roads as Conduits for Exotic Plant Invasions in a Semiarid Landscape. Conservation Biology 17(2): 420-432.

Hamblin, A.H. 2008. Paleontology Surveys and Reports on Piceance Energy LLC's proposed three wells in Rio Blanco County, Colorado. A.H. Hamblin Paleontological Consulting, Cedar City, UT. BLM Colorado Paleontological Resources Permit # C-60220. Dated October 10, 2008.

Johnsgard, P.A. 2002. *North American Owls: Biology and Natural History*. Smithsonian Institute Press, Washington. 295pp.

Nickens, P. R. and S. M. Chandler. 1979. Moon Lake Prospecting License Area (Report 79-2). Nickens and Associates, Inc.

Northwest Colorado Fire Management Unit Fire Management Officer (NWCFMU FMO). 2008. Northwest Colorado Fire Program Area Fire Management Plan – 2008.

Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, D.H. Dunn, W.C. Hunter, E.E. Inigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Pashley, K.V. Rosenberg, C.M. Rustay, J.S. Wendt, and T.C. Will. 2004. Partners in Flight North American Landbird Conservation Plan. Cornell Lab of Ornithology. Ithaca, NY.

Rio Blanco County. 2008. Burgell, P. personal communication (email) with K. McShea (B&A). September 3, 2008.

Rio Blanco County Road & Bridge Department. 2008. Traffic County Summary for Piceance Creek Roads. Revised as of July 2008.

Rodriguez-Estrella, R., Donazar, J.A. and F. Hiraldo. 1998. Raptors as Indicators of Environmental Change in the Scrub Habitat of Baja California Sur, Mexico. Conservation Biology 12(4): 921-925.

Rowley et al. 1985. Geologic Map of the Vernal 1^{o} X 2^{o} Quadrangle, Colorado, Utah, and Wyoming. MAP I-1526.

Sibley, D.A. 2003. The Sibley Field Guide to Birds of Western North America. Alfred A. Knopf, New York, New York.

Topper, R., K.L. Spray, W.H. Bellis, J.L. Hamilton, and P.E. Barkmann. 2003. Ground Water Atlas of Colorado. Colorado Geological Society Special Publication 53. Division of Minerals and Geology, Department of Natural Resources.

Trombulak, S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30.

Van Liew, W.P. and M.L. Gesink. 1985. Preliminary Assessment of the Groundwater Resources of the Alluvial Aquifer, White River Valley, Rio Blanco County, Colorado. U.S.G.S. Water Resources Investigations Report 84-4307.

U.S. Department of the Interior - U.S. Department of Agriculture (USDI-USDA). 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development. BLM/WO/ST-06/021+307/REV 07. Bureau of Land Management. Denver, Colorado. 84 pp.

U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS). 1982. Soil Survey of Rio Blanco County Area, Colorado. 219 pp.

U.S. Department of Agriculture - Natural Resources Conservation Services (USDA-NRCS). 2008. Web Soil Survey: Rio Blanco County Area, Colorado. Survey Area Data: Version 5. 10 January 2007. Available from: http://websoilsurvey.nrcs.usda.gov/app/. Accessed on October 10, 2008.

_____. 2008. Cummings, F. (Meeker Service Center) personal communication with K. King (B&A). October 15, 2008.

U.S. Fish and Wildlife Service (USFWS). 1995. Intra-Service Section 7 Consultation for Elimination of Fees for Water Depletions of 1000 acre-feet or Less from the Upper Colorado River Basin. March 9, 1995.

_____. 2002. Birds of Conservation Concern 2002. Division of Migratory Bird Management. Arlington, Virginia. 99 pp.

_____. 2007. RIPRAP, as amended (Parts I and II). Part I: Recovery Implementation Program Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement; Part II: Recovery Implementation Program Recovery Action Plan.

_____. 2008. Critical Habitat Portal. Available from: http://criticalhabitat.fws.gov/. Accessed on February 25, 2008.

U.S. Geological Survey (USGS). 2008. Streamflow Data for Gaging Stations. Available online at: http://waterdata.usgs.gov/nwis. Accessed on October 24, 2008.

PERSONS / AGENCIES CONSULTED:

Rio Blanco County Extension Agent, U.S. Department of Agriculture's Natural Resources Conservation Service's Meeker Office

INTERDISCIPLINARY REVIEW:

Project Team		
Name	**Title**	**Area(s) of Responsibility**
BLM Oversight		
Paul Daggett	Mining Engineer	Geology and Minerals
Brett Smithers	Natural Resource Specialist (NRS)	Migratory Birds; Threatened, Endangered and Sensitive Animal Species; Wildlife; Wetlands and Riparian Zones
Jim Michels	Forestry Technician	Recreation; Access and Transportation
Mark Hafkenschiel	Rangeland Management Specialist	Vegetation; Invasive, Non-Native Species; Rangeland Management
Michael Selle	Archeologist	Cultural and Paleontological Resources
Bob Lange	Hydrologist	Air Quality; Water Quality, Surface and Ground; Hydrology and Water Rights; Soils; and Wastes, Hazardous or Solid.
Penny Brown	Realty Specialist	Realty Authorizations
Jim Michels	Fuels Specialist	Fire Management
Jim Michels	Forester Technician	Forest Management
Melissa Kindall	Range Technician (Wild Horse Specialist)	Wild Horses
Maggie Marston	Botanist	Areas of Critical Environmental Concern, Threatened and Endangered Plant Species
Caroline Hollowed	Planning & Environmental Coordinator	Visual Resources
Buys & Associates, Inc., Littleton Colorado (Third Party Contractor)		
Tyler Ashcroft	Environmental Planner	Recreation, Visual Resources
Don Douglas	Senior Scientist	Air Quality
Nate Jones	Senior Biologist	Assistant Project Manager, Migratory Birds, Threatened, Endangered and Sensitive Animal Species, Aquatic and Terrestrial Wildlife
Kathryn King	Senior Ecologist	Invasive and Noxious Species, Riparian/Wetlands, Vegetation, Fire Management, Forestry Management, Rangeland Management
Gary Moore	Senior Archaeologist	Cultural Resources, Paleontological Resources
Dave Nicholson	Senior Geologist	Water Quality, Soils, Geology and Minerals, Hydrology and Water Rights, Paleontological Resources
Jean Sinclear	NEPA Specialist	B&A NEPA Project Lead, Access and Transportation; Realty; Waste Materials
Chris Hanes	GIS Specialist	Map Preparation, Spatial Data Analysis and Interpretation

Finding of No Significant Impact/Decision Record (FONSI/DR)

DOI-BLM-CO-110-2009-0014-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analysis of the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

Buys and Associates, Inc., an environmental consulting firm, with the guidance and participation of and the independent evaluation of the Bureau of Land Management (BLM) prepared this document. The BLM, in accordance with 40 CFR 1506.5 (a) and (c), is in agreement with the findings of the analysis and approves and takes responsibility for the scope and content of this document.

DECISION/RATIONALE: It is my decision to approve this action as described I the proposed action with the addition of the mitigation listed below.

MITIGATION MEASURES:

1. All activities will be required to comply with all applicable local, State, and Federal air quality laws, statutes, regulations, standards, and implementation plans. Documentation of this compliance should be provided to the BLM annually. Further recommendations for mitigating air quality impacts include:

    - All access roads will be maintained according to BLM Manual Section 9113 standards for road shape and drainage features at all times during construction, drilling, completion and production of the wells.
    - All access roads will be treated with water and/or a dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. All vehicles will abide by company or public speed restrictions during all activities. If water is used as a dust suppressant, there should be no traces of oil or solvents in water. Only water needed for abating dust should be applied; dust abatement should not be used as a water disposal option under any circumstances.
    - Surfacing of access roads constructed on soils susceptible to wind erosion with gravel or other appropriate materials approved by the AO.
    - Suspension of land clearing, grading, earth moving and excavation activities when wind speeds exceed 20 mph.

- Restoration of disturbed areas including re-grading to original contours, revegetation with a BLM-approved seed mixture, and post-seeding placement of woody debris in appropriate areas to increase effective ground cover and retain soil moisture.
- Maintenance of construction equipment and vehicles in good operating condition to ensure engines run efficiently.

2. The release of any chemical, petroleum product, produced water, or sewage, etc., (regardless of quantity) will be reported by the operator, to the BLM WRFO Hazardous Materials Coordinator at (970) 878-3800.

3. Prior to drilling, the operator will submit an updated Spill Prevention, Control and Countermeasures (SPCC) plan to the BLM that details procedures that will be used to contain, store and dispose of all chemicals used or produced from the proposed action. Remediation of contaminated soils or off-site disposal of contaminated materials will need to be approved by the BLM AO prior to taking any action. Emergency containment measures will be allowed without approval.

4. The operator will submit to the BLM the method of handling produced water from completed wells, per Onshore Order No.7 requirements.

5. Place an additional culvert under the access road to PE Federal 36-05 in the drainage ditch for Rio Blanco County Road No. 96 to convey water under the new road.

6. Culverts or drainage dips should be installed at a frequency specified in BLM Manual Section 9113 and in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Adequate spacing to avoid accumulation of water in ditches or road surfaces should be provided. Culvert installations should be monitored to ensure adequate armoring of inlet and outlet and no erosion of design.

7. Road inlet and outlet ditches, catch basins, and culverts should be kept free of obstructions, particularly before and during spring runoff. Routine machine-cleaning of ditches should be kept to a minimum during wet weather. Disturbed areas should be left in a condition that provides drainage with no additional maintenance.

8. All seed tags will be submitted to the designated NRS within 24 hours from the time the seeding activities have ended via Sundry Notice. The sundry will include the purpose of the seeding activity (i.e., seeding well pad cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his or her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, an estimate of the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.

9. The designated NRS will be notified 24 hours prior to beginning all reclamation activities associated with this project via email or by phone. The designated NRS for this project is Brett Smithers (Phone: (970) 878-3818; Email: brett.smithers@blm.gov).

10. In an attempt to track interim and final reclamation of federal actions related to the development of federal mineral resources, the operator shall submit Geographic Information System (GIS) data to the White River Field Office (WRFO) for any post construction (i.e., "as-built") polygon feature that was included in the Application for Permit to Drill (APD) or Sundry Notice, and associated with the proposed action. GIS polygon features may include, but are not limited to, constructed access roads, existing roads that were upgraded, pipeline corridors, and well pad footprints. Geospatial data will be submitted as ArcView datasets (i.e., shapefiles or features), ArcInfo coverages, or as ArcView compatible data files (e.g., AutoCAD export .dwg files). All AutoCAD files must include the projection information and/or spatial (datum) reference to allow import into a spatially referenced GIS format. The preferred spatial reference for AutoCAD .dwg files is State Plane, Colorado North, NAD83, feet. GIS data shall be submitted electronically to BLM, WRFO Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov; Phone: [970] 878-3818) using the 1983 Geographic Coordinate System (NAD 83 datum). These data shall be submitted within 14 calendar days from the time when construction-related activities have ended for all geographic features associated with the proposed action. If the operator is unable to submit the required information within the specified time period, the operator shall notify the designated BLM contact person (see below) via email or by phone, and provide justification supporting an extension of the required data submission time period. Internal and external review of the reporting process and the adequacy of the associated information to meet established goals will be conducted on an on-going basis. New information or changes in the reporting process will be incorporated into the request, as appropriate. If the operator is unable to send the data electronically, the operator shall submit the data on compact disk(s) to:

    BLM, White River Field Office
    220 East Market Street
    Meeker, Colorado 81641
    Attn: Brett Smithers

11. If for any reason the location or orientation of the geographic feature associated with the proposed action changes, the operator shall submit updated GIS data to BLM, WRFO within 7 calendar days of the change. This information should be submitted via Sundry Notice.

12. A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by 15 April and 15 August of each calendar year, and will include the well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, estimate of acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person(s) responsible for developing the report.

The report will be accompanied with maps showing each point (i.e., well pad), polygon, or polyline (i.e., pipeline) feature that was included in the report. Geospatial data will be submitted using the NAD83 UTM, Zone 12 North projected coordinate system, the Transverse Mercator projection, and the GCS North American 1983 geographic coordinate system (NAD 83 datum). In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report. Internal and external review of the WRFO Reclamation Status Report, and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report. The Reclamation Status Report will be submitted electronically via email and as a hard-copy to Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov). Please submit the hardcopy to:

BLM, White River Field Office
220 East Market Street
Meeker, Colorado 81641
Attn: Brett Smithers

13. The Operator will be responsible for implementing mitigation measures that minimize bird injuries or mortality as a result of contact with produced water in the reserve pit. The most effective measure currently being used includes the use of netting to cover the pit. The use of plastic balls that float on the surface and reduce the area that might be perceived by waterfowl as a place to rest and/or forage has also been used in certain circumstances, with limited results. The use of plastic flagging has proven to be ineffective at deterring use by migratory waterfowl for foraging, resting or as a source of free water, and is strongly discouraged. The Operator will notify WRFO Natural Resource Specialist, Brett Smithers via Email (brett_smithers@blm.gov) or by phone ([970] 878-3818) of the method that will be used to prevent impacts to birds at least two weeks prior to the date when completion activities are expected to begin. The BLM-approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

14. To help monitor possible impacts to big game and raptors as result of drilling, completion, and well maintenance (i.e., work-over) activities, the operator shall notify the designated NRS the day the drilling rig moves on to the location and inform him or her of the move. In addition, the operator shall notify the designated NRS within 24 hours from the time the drilling rig moves off the location, when the completion rig moves on to the location and when the completion rig moves off the location. Well maintenance operations will also be reported to the designated NRS within 24 hours from the time the work-over rig moves on to the location and when the work-over rig moves off the location.

15. The operator will be responsible for informing their employees, contractors and subcontractors that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during surface-disturbing activities, the operator will immediately suspend activities in the direct vicinity of the find that might further disturb such materials and immediately contact the authorized officer (AO). Within five working days, the AO will inform the operator as to:

- Whether the materials appear eligible for the National Register of Historic Places;
- The mitigation measures the operator will be required to undertake before the site could be used (assuming in-situ preservation is not necessary); and
- A timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the Colorado State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

16. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will be allowed to resume construction.

17. Pursuant to 43 CFR 10.4(g), the operator will notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), the operator must stop activities in the vicinity of the discovery and protect it for thirty (30) days or until notified to proceed by the AO.

18. The operator should inform all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately suspend activities in the vicinity of the find that might further disturb such materials, and contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

    - Whether the materials appear to be of noteworthy scientific interest; and
    - The mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible).

19. An approved paleontological monitor should be present anytime it becomes necessary to excavate into the underlying rock formation to construct the road, level the well pad, excavate the cuttings pit or bury any of the associated pipelines to the well.

20. It is recommended that spoil piles from pad construction associated with proposed well PE Federal 36-05 be examined for plants and other fossils after construction.

21. Woody material to be removed from the site will be stock piled to a size not exceeding 5 tons of wood per acre.

22. Excess woody material will be treated in one of the following methods:

    - A hydro-ax or other mulching machine could be used to remove the trees. The machines are capable of shredding trees up to 12 inches in diameter and 15 feet tall as well as

mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size and the mulch is evenly scattered across the surface. This mulching action will effectively breakdown the woody fuel and scatter the debris thereby eliminating any hazardous fuel load adjacent to the pipelines, new roads and well pads.

- Cut trees and have them removed for firewood, posts or other products. The branches and tops should be mulched with a chipper or lopped and scattered to a depth of 24 inches or less. If the products are left for collection by the general public, they should be stacked in small, manageable piles along the roadside or pad to facilitate removal.

23. During construction of the well pads and associated access roads, there shall be one 10 lb. A/B/C rated fire extinguisher, one shovel and/or Pulaski or axe for each piece of equipment on site and ready for use in the event of an accidental fire ignition as a result of construction. No fire suppression actions shall be taken on any other fires in the area unless directed by the incident commander. In the event of an accidental ignition or other fire in the area, the contractor or a representative will contact Craig Fire Dispatch at 970-878-5037 so that a qualified fire crew can evaluate the situation for the safety of all crews in the area.

24. Where PE Federal 36-05 access road crosses the existing pasture boundary fence, install a minimum 20-foot wide cattleguard to BLM specifications for the lifetime of the project. All cattleguard/fence installation will take place prior to well location, pipeline or facility construction. A minimum 16-foot wide gate will be installed next to the cattleguard to allow passage for livestock/heavy equipment. All fence construction will be completed to BLM specifications.

25. To offset possible interference or disruption of livestock grazing patterns and distributions, Piceance Energy will work with the BLM and individual grazing permittees to identify and construct additional surface water structures (e.g., water catchments, stock water tanks, etc).

26. The holder is responsible for obtaining all appropriate realty authorization permits from state and local governments.

27. Cement will be placed across all coal seams that are encountered from the surface through the base of the Mesaverde Formation.

COMPLIANCE/MONITORING: On-going compliance inspections and monitoring of drilling, production and post-production activities will be conducted by White River Field Office staff during construction of well pads, access roads, and pipelines. Specific mitigation developed in this Environmental Assessment and the lease terms and conditions will be followed. The Operator will be notified of compliance related issues in writing, and depending on the nature of the issue(s), will be provided 30 days to resolve such issues.

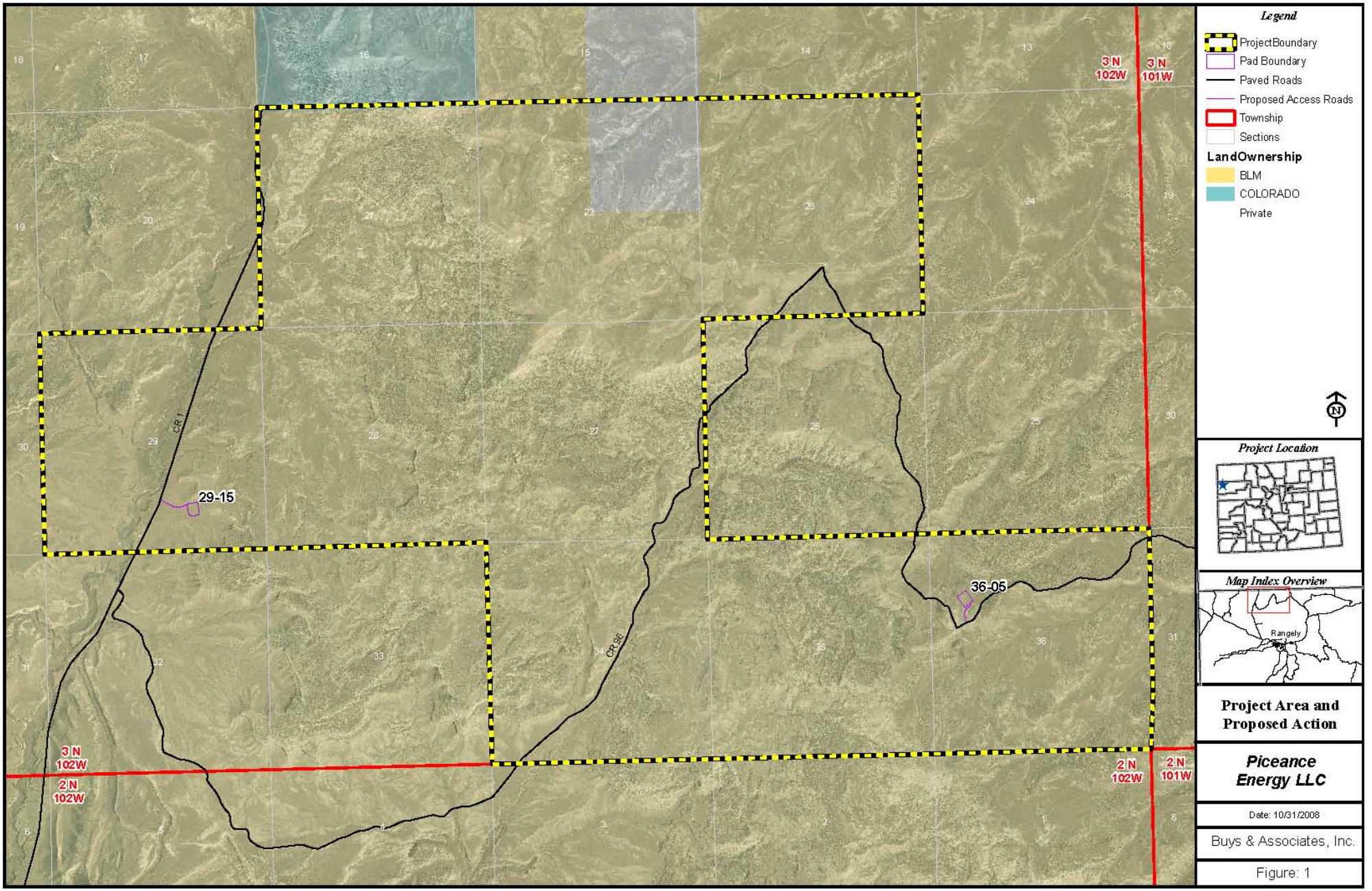
NAME OF PREPARER: Brett Smithers

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: _____
Field Manager

DATE SIGNED: 02/04/09

ATTACHMENTS: Figure 1. Project area map.


Legend
ProjectBoundary
Pad Boundary
Paved Roads
Proposed Access Roads
Township
Sections
LandOwnership
BLM
COLORADO
Private
Project Location
Map Index Overview
Rangely
29-15
36-05
CR 1
CR 86
3 N 102W
3 N 101W
2 N 102W
2 N 101W
Project Area and Proposed Action
Piceance Energy LLC
Date: 10/31/2008
Buys & Associates, Inc.
Figure: 1