

U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
73544 Hwy 64  
Meeker, CO 81641

## ENVIRONMENTAL ASSESSMENT

**NUMBER:** CO-110-2006-164 -EA

**CASEFILE/PROJECT NUMBER:**

COD-052141 Piceance Creek Unit (PCU) 297-15; A1, A3-A9  
COD-035679 PCU 297-15; A2

**PROJECT NAME:** APDs for 9 gas wells PCU 297-15; A1-A9

**LEGAL DESCRIPTION:** Surface Location: T2S, R97W, 6<sup>th</sup> P.M., NENW sec.15  
Production Zone Locations:

Piceance Creek Unit 297-15; A1 (NENW sec.15),  
Piceance Creek Unit 297-15; A2 (SESW sec.10),  
Piceance Creek Unit 297-15; A3 (NWNE sec.15),  
Piceance Creek Unit 297-15; A4 (SWNE sec.15),  
Piceance Creek Unit 297-15; A5 (SWNE sec.15),  
Piceance Creek Unit 297-15; A6 (SENE sec.15),  
Piceance Creek Unit 297-15; A7 (SENE sec.15),  
Piceance Creek Unit 297-15; A8 (NWNW sec.15),  
Piceance Creek Unit 297-15; A9 (NENW sec.15)

**APPLICANT:** ExxonMobil Oil Corporation

**ISSUES AND CONCERNS** (optional): On-site conducted on 06/22/05 (old pad # 55 or 255). Drilling plan is scheduled for 3/22/07 through 11/22/07, with one well per month.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**Proposed Action:** The applicant proposes to drill nine (9) wells from the same well pad. Approx. 0.3 mi. of new access road would be required, and approx. 1.4 mi. of existing two-track would be up graded. Access road ROW would be 40' for approximately 6 acres of new surface disturbance. The well pad size would be approximately 490' x 450' with a production pad (200' x 80') for a total surface disturbance of approx. 8 acres. Two new steel (6" gas & 3" water) pipelines (7200' x 20' addl. ROW) would be buried adjacent to access road to a tie in point with existing pipelines. Pipeline ROW would overlap with access road ROW to minimize new surface disturbance during construction/burial of pipeline. Approximate surface disturbance of

the pipeline would be 3.3 acres. Total acres for this well pad, access road and pipeline would be 17.3 acres (includes cut/fill slopes).

Company committed mitigation is as follows:

- The maximum grade of the access road would not exceed 5%.
- Turnouts would be required for the access roads as needed.
- CMPs would be placed as needed.
- Surfacing material will be hauled over existing roads from a source not yet identified.
- No cattleguards will be required.
- The proposed access road would be flagged prior to construction.
- Water would either be piped with surface lines or trucked over access road. Remaining clear water would be pumped or hauled forward from previous wells after surface casing is set.
- Location sub-grade will be constructed by normal cut and fill methods.
- Drill cuttings would be disposed of in the reserve or dry cutting pit and buried with at least 4' of cover. E & P waste would be handled as defined, prescribed or permitted by the COGCC Rules.
- Any drilling mud with greater than 1% diesel net weight would be hauled to a proper disposal site.
- An alternative to hauling would be solidification in the pit with method approved by the Colorado Oil and Gas Conservation Commission (COGCC).
- All mud cuttings will meet these requirements before being buried or removed from the location.
- All cuttings will have all harmful properties of the waste reduced or removed and the mobility of leachate constituents reduced or eliminated.
- The BLM will be contacted prior to testing the cuttings of the first well so that the BLM may witness the testing procedures.
- Trash, waste paper, and other garbage would be contained in a fenced trash cage and hauled to a commercial disposal site.
- Salts that are not used in the drilling fluid would be removed from the location by the supplier.
- Sewage from the trailer houses will be disposed of in a manner meeting the Rio Blanco County Regulations, as under the guidance of Colorado Water Quality Control Commission, Department of Public Health and Environment.
- Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion and as needed the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility.
- Chemicals that are not used in the drilling and completion of the well would be removed from the location by the supplier.
- Drilling fluids would be allowed to evaporate in the reserve pit until the pit is dry enough for back filling.
- Water produced during tests would be disposed of in the reserve pit as per Onshore Order #7.
- Oil produced during tests would be stored in test tanks until sold, at which time it would be hauled from the site.

- In the event fluids in the pit do not evaporate in a reasonable time, the fluids would be hauled to a state approved disposal site or would be mechanically evaporated.
- The reserve pit would be fenced on three sides with 4 strand barbed wire during drilling and on the fourth side after the rig is released.
- No camps, airstrips, etc. would be constructed.
- All equipment and vehicles will be confined to the access road and well pad.
- Mud pits in the active circulation system would be steel pits. The reserve pit may be lined with an impermeable liner if needed to hold fluid.
- If snow is encountered, the snow would be removed before construction begins or the topsoil is disturbed, and placed downhill of the proposed topsoil stockpile.
- All available topsoil would be stripped on well locations and access roads, prior to construction, and stockpiled for use in reclamation of the site. Topsoil stockpile would be clearly segregated from any spoil pile and placed where it can be easily retrieved without impact to natural features.
- Upon completion of the operation and disposal of trash and debris as prescribed above, pits would be backfilled and recontoured as soon as practical after they have dried.
- Unneeded disturbed surfaces remaining after completion to the surface production facilities would be shaped to match the surrounding terrain and seeded as specified by the BLM.
- When the well is abandoned, ExxonMobil would rehabilitate the road and location as per BLM specifications.
- Revegetation of the drill pad would comply with BLM specifications.
- Rehabilitation operations would start in a timely manner following the completion of operations, typically the following construction season.
- An archaeological investigation and report will be prepared for the proposed access road and well site by Archaeological-Environmental Research Corporation and submitted to the BLM.
- Completed wells on this pad will continue to produce during drilling operations per Exxon Mobil Simultaneous Operations guidelines.

Approximate date proposed action work would start would be 03/22/2007, scheduled one well per month, thru 11/22/2007 for location PCU 297-15A.

**No Action Alternative:** Proposed action would not be approved and no construction or drilling would take place and no environmental impacts would occur.

**ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:**

**NEED FOR THE ACTION:** To respond to the request by the applicant to exercise lease rights to construct access road, well pad, and install pipelines to develop hydrocarbon reserves.

**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: Page 2-5

Decision Language: “Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.”

## **AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:**

**STANDARDS FOR PUBLIC LAND HEALTH:** In January 1997, Colorado Bureau of Land Management (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:

## **CRITICAL ELEMENTS**

### **AIR QUALITY**

*Affected Environment:* The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM<sub>10</sub>) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction due to the combustion of fossil fuels associated with construction operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than PM<sub>10</sub>. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM<sub>10</sub> levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter (µg/m<sup>3</sup>). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM<sub>10</sub> (24-hour average) of 150 µg/m<sup>3</sup>.

*Environmental Consequences of the Proposed Action:* Cumulative impacts detrimental to air quality in the Piceance Creek Basin can be expected as carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated due to increased oil and gas development. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM<sub>10</sub>) during construction. Elemental and organic carbon existing in the air as PM<sub>10</sub> can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

*Environmental Consequences of the No Action Alternative:* Impacts from the No-Action alternative are not anticipated.

*Mitigation:* The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

## **AREAS OF CRITICAL ENVIRONMENTAL CONCERN**

*Affected Environment:* A portion of the proposed well pad location falls within the boundary of the Dudley Bluffs ACEC. PBS&J has done extensive surveying in this ACEC over the last two years. The ACEC has been mapped of all existing populations of Threatened, Endangered or BLM sensitive plant species for which this ACEC was designated to protect.

*Environmental Consequences of the Proposed Action:* A pedestrian survey was conducted by BLM staff in August 2006. There was no habitat present associated with any Threatened, Endangered or BLM sensitive plant species to occur. The vegetation consisted of openings dominated by Wyoming big sagebrush with a native perennial grass understory are scattered throughout the site. There would be no direct or indirect affect to the identified important values of the ACEC.

*Environmental Consequences of the No Action Alternative:* Impacts from the no-action alternative are not anticipated.

*Mitigation:* None

## **CULTURAL RESOURCES**

*Affected Environment:* The proposed well pad location and access road have been inventoried at the Class III (100% pedestrian) level (Metcalf 2005, Compliance Dated 10/21/2005) with no cultural resources identified along the access route or in the well pad area.

*Environmental Consequences of the Proposed Action:* The proposed action will not impact any known cultural resources.

*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 is responsible for informing all persons who are associated with the project operations 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 any project or construction activities, the operator is to immediately stop activities in the immediate area 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 likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the 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 will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must 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), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

## **INVASIVE, NON-NATIVE SPECIES**

*Affected Environment:* There are no known noxious or problem weeds at the immediate project site. The noxious weeds black henbane, bull thistle and mullein occur along access roads to the project site. Cheatgrass occurs along access roads to the proposed site primarily in association with unvegetated areas of earthen disturbance

*Environmental Consequences of the Proposed Action:* Noxious weeds and cheatgrass continue to proliferate in the Magnolia area due to unnecessary earthen disturbance and grossly revegetation and weed control measures. The proposed action will create about 18 acres of new earthen disturbance, which if it is not revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project sites to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. There will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

## **MIGRATORY BIRDS**

*Affected Environment:* The project site is encompassed by moderately open-canopied, early-mature pinyon-juniper woodlands. Openings dominated by Wyoming big sagebrush with a native perennial grass understory are scattered throughout the site. A number of migratory birds fulfill nesting function in these communities during late-May through mid-July. Those bird populations identified by the Rocky Mountain Bird Observatory Partners in Flight program as having higher conservation interest include gray flycatcher, pinyon jay, juniper titmouse, and black-throated gray warbler. The species identified are well distributed at appropriate densities in the White River Resource Area's extensive woodland habitats.

Although this high plateau area has no open water or wetland areas that support or attract waterfowl use, the development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November) and likely have similar attraction for migratory and resident passerines.

*Environmental Consequences of the Proposed Action:* Construction of pad 297-15A will be initiated prior to the nesting season and would have no potential to directly impact migratory bird nesting functions. Drilling procedures will extend into the spring and summer, however, nest initiation would have been made in the face of ongoing drilling activities. Development of this site (well pad and associated road and pipeline) will result in the loss of approximately 17 acres of pinyon-juniper woodlands, which would take 200 - 300 years to return to preconstruction condition. Construction of this site could potentially displace up to eight pairs of higher conservation interest species.

The Piceance Creek valley is used by waterfowl and other migratory birds throughout the year. The development of reserve pits that contain fluids have attracted waterfowl use, particularly during the migratory period (i.e., local records: mid-March through late May; mid-October through late November) and likely have similar attraction for migratory and resident passerines. There have been several recent instances of migratory waterfowl having contacted drilling or frac fluids stored in reserve pits during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with fluids that may pose a problem.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would potentially influence nesting activity of migratory birds.

*Mitigation:* It is recommended that earthwork associated with this project be conducted outside the migratory bird nesting season (late-May through mid-July).

See discussion in Terrestrial Wildlife regarding interim reclamation.

It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

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

*Affected Environment:* There are no threatened, endangered or BLM-sensitive animal species that inhabit or derive important use from the project area.

*Environmental Consequences of the Proposed Action:* The proposed action would have no conceivable influence on special status animals or associated habitat.

*Environmental Consequences of the No Action Alternative:* The no action alternative would have no conceivable influence on special status animals or associated habitat.

*Mitigation:* None

*Finding on the Public Land Health Standard for Threatened & Endangered species:* The proposed and no action alternatives would have no influence on populations or habitats of animals associated with the Endangered Species Act or BLM-sensitive species and, as such, would have no influence on the status of applicable land health standards.

#### **THREATENED, ENDANGERED, AND SENSITIVE PLANT SPECIES (includes a finding on Standard 4)**

*Affected Environment:* There are no threatened, endangered or BLM-sensitive species that are known to inhabit or derive important use from the project area. A portion of the proposed well pad location falls within the boundary of the Dudley Bluffs ACEC. PBS&J has done extensive surveying in this ACEC over the last two years. The ACEC has been mapped as to all the existing populations of Threatened, Endangered or BLM sensitive plant species for which this ACEC was designated to protect. A pedestrian survey was conducted by BLM staff in August 2006. There was no habitat present associated with any Threatened, Endangered or BLM sensitive plant species to occur. The vegetation consisted of openings dominated by Wyoming big sagebrush with a native perennial grass understory are scattered throughout the site.

*Environmental Consequences of the Proposed Action:* The proposed action would have no conceivable influence on special status species.

*Environmental Consequences of the No Action Alternative:* The no-action alternative would not have any conceivable influence on special status species.

*Mitigation:* None

*Finding on the Public Land Health Standard for Threatened & Endangered species:* The proposed and no action alternatives would have no influence on populations or habitats of animals associated with the Endangered Species Act or BLM-sensitive species and, as such, would have no influence on the status of applicable land health standards.

#### **WASTES, HAZARDOUS OR SOLID**

*Affected Environment:* There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

*Environmental Consequences of the Proposed Action:* No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

*Environmental Consequences of the No Action Alternative:* No hazardous or other solid wastes would be generated under the no-action alternative.

*Mitigation:* The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

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

*Affected Environment:* The proposed action is located in the Lower Piceance Creek (~25 acres) fifth level watershed. The proposed well pad location #PCU 297-15 is located in the Piceance Creek watershed along the drainage divide between McKee Gulch, Miller Hill Draw and Piceance Creek 6<sup>th</sup> and 7<sup>th</sup> level catchment areas. McKee Gulch and Miller Hill Draw are both situated in stream segment 16 of the White River Basin. The affected portion of the Piceance Creek (6<sup>th</sup> and 7<sup>th</sup> level catchment areas) is situated within stream segment 16 of the White River Basin. McKee Gulch and Miller Hill Draw are both ephemeral tributaries to Piceance Creek which is a perennial tributary to the White River. The White River is a tributary to the Green River (in Utah) which is a tributary to the Colorado River.

The “Status of Water Quality in Colorado –2006” (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages within the project area. Stream segment 15 of the White River Basin is defined as the mainstem of Piceance Creek from the Emily Oldhand diversion dam to the confluence with the White River. Segment 15 has not been designated use-protected. An intermediate level of water quality protection applies to waters that have not been designated outstanding waters or use-protected waters. For these waters, no degradation is allowed unless deemed appropriate following an antidegradation review. The state has classified segment 15 as being beneficial for the following uses: Warm aquatic life 2, Recreation 1b, and Agriculture (CDPHE 2005a).

Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 of the White River Basin as “Use Protected” and further designated as beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegradation

review requirements in the Antidegradation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. For this reach, minimum standards for three parameters have been listed. These parameters are: dissolved oxygen = 5.0 milligrams per liter (mg/l), pH = 6.5 - 9.0, and Fecal Coliform = 2,000/100 milliliters (ml) and 630/100 ml E. coli. Numeric standards for inorganic compounds and metals can be found within Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State's Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs includes two segments within the White River - segment 9b, White River tributaries North and South Forks to Piceance Creek, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL development) and segment 22, tributaries to the White River, Douglas Creek to the Colorado/Utah boarder, specifically West Evacuation Wash, and Douglas Creek (sediment impairments). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation, to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek) and 22 (Soldier Creek). Stream segments 15 and 16 were not listed.

Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes streamflow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987). No BLM springs have been identified within 0.5 miles of any surface disturbing activities associated with the proposed actions. However, water well Piceance Creek Well #4, has been identified on state lands near the mouth of Ryan Gulch.

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel,

and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

Ground Water: Surface geologic formation at proposed location is Tertiary in age (Uinta Formation) and consists primarily of interbedded sandstone and siltstone. A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary bedrock aquifers within the Piceance Basin are listed in table 1.

**Table 1:**

Summary of Hydrogeologic Units						
Hydrogeologic Unit	Stratigraphic Unit	Physical Description	Thickness	Hydraulic Conductivity	Yield	TDS
			(ft)	(ft/day)	(gpm)	mg/L
<b>Upper Piceance Basin aquifer</b>	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
<b>Lower Piceance Basin aquifer</b>	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
<b>Fort Union aquifer</b>	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
<b>Mesaverde aquifer</b>	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL

Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood in tightly cased wells, 1985) within hydrogeologic units: upper Piceance basin aquifer 550 feet, lower Piceance basin aquifer 350 feet, and Mesaverde aquifer 250 feet (based on a surface elevation of 7,250 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

*Environmental Consequences of the Proposed Action:* Surface Water: Clearing, grading, and soil stockpiling activities may temporarily alter overland flow and natural groundwater recharge patterns. Near-surface soil compaction caused by construction equipment and vehicles could reduce the soil's ability to absorb water and could increase surface runoff and the potential for ponding. The magnitude and duration of potential impacts to surface runoff and groundwater recharge would depend on soil depth, soil type, vegetation type and density, slope, aspect, erosive force of rainfall or surface runoff, and duration and extent of construction activities. Impacts would likely be greatest immediately following commencement of construction activities and would likely decrease thereafter due to reclamation activities.

Toxic metals and organic substances associated with fluid mineral development (such as substances found in produced water) that are relatively insoluble in water may be adsorbed on the surface of sediments and transported with sediment to surface waters further deteriorating water quality in stream segments 15 and 16 of the White River Basin. In addition, mechanical means of produced water evaporation may result in overspray which would likely result in increased salt deposits (notably sodium and chlorides). Salt deposition resulting from overspray may adversely impact the health of surrounding vegetation reducing effective ground cover and increasing the potential for soil erosion. In addition, salts deposited from overspray could be carried down gradient to surface waters of the Colorado River system deteriorating water quality.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminants down gradient to alluvial aquifers such as the Piceance Creek alluvium which is situated hydrologically down gradient from the proposed actions and is responsible for supplying water to the Piceance Creek Well #4 which is completed in alluvial material near the mouth of Ryan Gulch. Potential for ground water contamination in bedrock aquifers increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer, and Piceance Creek Alluvial Aquifer.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* Comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will restrict non emergency maintenance activities on pipeline ROW and associated access roads when soils become saturated to a depth of three inches or more. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit.

Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust and minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:

- Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.

- Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- The operator will be responsible for excluding livestock/wildlife grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).
- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- A bi-annual report showing the operators reclamation schedule and progress will be submitted to the WRFO Area Manager for review.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).

Upon final abandonment of well pads, new access roads, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics...) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

*Finding on the Public Land Health Standard for water quality:* Stream segments 15 and 16 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

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

*Affected Environment:* The closest channel system supporting riparian vegetation is Piceance Creek, which is separated by a minimum 3 miles of ephemeral channel from the proposed action (Dudley Gulch North and Hatch Gulch). This portion of Piceance Creek (and

about 7 miles downstream) is private and State-owned and stream function and morphology is heavily modified by irrigation practices (e.g., not strongly represented by obligate forms of riparian vegetation, moderately entrenched/undersized floodplains).

*Environmental Consequences of the Proposed Action:* This ridgeline project is separated from the nearest riparian system by at least 3 miles of ephemeral channel. Pad, pipeline, and road construction would have no direct impact on riparian/wetland resources. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated riparian resources.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream riparian communities.

*Mitigation:* None

*Finding on the Public Land Health Standard for riparian systems:* Downstream portions of Piceance Creek are private with the nearest BLM-administered reach about 7 miles downstream. These private portions of the creek are stable, but due to the factors listed above, their functional status is generally at-risk. Neither the proposed or no-action alternative would have any effective influence on the function or condition of the Piceance Creek channel, its riparian expression, or its land health status.

**CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:**

No flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers exist within the area affected by the proposed action. There are also no Native American religious or environmental justice concerns associated with the proposed action.

**NON-CRITICAL ELEMENTS**

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

**SOILS** (includes a finding on Standard 1)

*Affected Environment:* The following data is a product of an order III soil survey conducted by the Natural Resources Conservation Service (NRCS) in Rio Blanco County, CO. Table 2 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Soil Number	Soil Name	Slope	Acres w/in 30 m	Ecological site	Salinity (mmhos/cm <sup>2</sup> )	Run Off	Erosion Potential	Bedrock
70	Redcreek-Rentsac	5-30%	23	PJ woodlands/	<2	Very high	Moderate to high	10-20

Soil Number	Soil Name	Slope	Acres w/in 30 m	Ecological site	Salinity (mmhos/cm <sup>2</sup> )	Run Off	Erosion Potential	Bedrock
	complex			PJ woodlands				
73	Rentsac channery loam	5-50%	1.25	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20

CSU-1 “fragile soils” have been mapped along the last 270 meters of the proposed access road. However, observation of a topographic map revealed that no surface disturbing activities will occur on slopes greater than 35 percent. Thus, CSU stipulations will not apply.

*70-Redcreek-Rentsac complex* (5 to 30 percent slopes) can be found on mountainsides and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and grasses. Elevation is 6,000 to 7,400 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 85 to 105 days. This unit is 60 percent Redcreek sandy loam and 30 percent Rentsac channery loam. The Redcreek soil is shallow and well drained. It formed in residual and eolian material derived dominantly from sandstone. Typically, the surface layer is brown sandy loam about 4 inches thick. The next layer is brown, calcareous sandy loam about 7 inches thick. The underlying material is very pale brown, calcareous channery loam 5 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Redcreek soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, the upper part of the surface layer is grayish brown channery loam about 5 inches thick. The next layer is brown very channery loam about 4 inches thick. The underlying material is very pale brown extremely flaggy loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to hard sandstone or hard shale ranges from 10 to 20 inches. Permeability of the Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is medium, and the hazard of water erosion is moderate to high.

*73-Rentsac channery loam* (5 to 50 percent slopes) is a shallow, well drained soil found on ridges, foothills, and side slopes. It formed in residuum derived dominantly from calcareous sandstone. The native vegetation is mainly pinyon, juniper, brush, and grasses. Elevation is 6,000 to 7,600 feet. The average annual precipitation is 14 to 18 inches, the average annual air temperature is 42 to 45 degrees F, and the average frost-free period is 80 to 105 days. Typically, the surface layer is grayish brown channery loam about 5 inches thick. The next layer is very channery loam about 4 inches thick. The underlying material is extremely flaggy light loam 7 inches thick. Hard sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. Permeability of this Rentsac soil is moderately rapid. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is moderate to very high.

*Environmental Consequences of the Proposed Action:* Clearing and grading of well pads, pipeline right of ways and access roads will remove protective vegetative cover from the affected soils accelerating the erosion process. Grading, trenching, and backfilling activities could cause mixing of the soil horizons and could result in reduced soil fertility reducing revegetation potential. Water erosion of soils associated with construction activities will likely result in a net loss of valuable topsoil by sheet, rill, and gully erosion. Eroded topsoil and subsoil may increase salt loading and sedimentation to surface waters down gradient disturbed areas. Increased sedimentation/salt loads could adversely impact water quality and aquatic life.

Any leaks or spills of environmentally unfriendly substances (e.g. diesel fuel) could compromise the productivity of affected soils. Decreased soil productivity will hinder reclamation efforts and leave soils further exposed to erosional processes.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.

Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

All disturbed surfaces will be restored to natural contours and revegetated with a BLM approved seed mixture. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

*Finding on the Public Land Health Standard for upland soils:* Infiltration and permeability rates will be reduced with increased soil compaction. Following proper mitigation techniques and reclamation procedures, soil health will remain unchanged from current conditions.

## **VEGETATION** (includes a finding on Standard 3)

*Affected Environment:* The proposed action occurs in mid and late seral pinyon-juniper woodland.

*Environmental Consequences of the Proposed Action:* Two primary negative impacts will/could occur as a result of access road, pad and pipeline construction; 1) The 18 acres disturbed as a result of pipeline, access road and pad construction will accelerate the rate of plant community fragmentation which is presently occurring in this area of Piceance Basin. This impact is unmitigated in the short term and likely, longer. 2) In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline and access road construction. Drilling multiple wells from a single pad, while limiting disturbance and plant community fragmentation over both the short and long

term, will not completely mitigate the negative impact of the proposed action upon native plant communities.

*Environmental Consequences of the No Action Alternative:* there will be no change from the present situation.

*Mitigation:* Promptly revegetate all disturbed areas including cut and fill slopes and roadside borrow areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Native Seed Mix # 3		
Plant Species	PLS/Lb	Ecological Site
Western wheatgrass (Rosanna)	2	
Bluebunch wheatgrass ( Whitmar)	2	Gravelly 10"-14", Pinyon/Juniper
Needle and thread	1	Woodland, Stony Foothills, 147
Indian ricegrass (Rimrock)	2	(Mountain Mahogany)
Fourwing saltbush (Wytana)	1	

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Upland plant communities currently meet the Standard and are expected to continue to under the proposed action.

**WILDLIFE, AQUATIC** (includes a finding on Standard 3)

*Affected Environment:* Piceance Creek, separated by a minimum 3 miles of ephemeral channel from the proposed action, supports the nearest aquatic habitat. The nearest BLM-administered reach is about 7 miles downstream of this point. Stream function and morphology on these downstream reaches are heavily modified by summer-long irrigation practices, but the stream persists in supporting small populations of leopard frog, speckled dace, and flannelmouth sucker.

*Environmental Consequences of the Proposed Action:* This pad is situated on the crest of a ridge separated from the nearest aquatic system by a minimum 3 miles of ephemeral channel. Pad and road construction would have no direct impact on aquatic habitats. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated aquatic values.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would have any direct or indirect influence on downstream aquatic habitat.

*Mitigation:* None

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Terrestrial): Downstream portions of Piceance Creek are private with the nearest BLM-administered reach about 7 miles downstream. Neither the proposed or no-action alternative would have any effective influence on the function or condition of the Piceance Creek channel, its aquatic habitat values, or its land health status.

## **WILDLIFE, TERRESTRIAL** (includes a finding on Standard 3)

*Affected Environment:* The project area is categorized by the Colorado Division of Wildlife as severe winter range - a specialized component of winter range that periodically supports virtually all an area's deer under the most severe winter conditions (i.e., extreme cold and heavy snowpack). These ranges typically sustain big game use from January through April. The project area is also classified as general winter range for elk.

The pinyon-juniper woodlands may provide nesting substrate for woodland raptors such as sharp-shinned or Cooper's hawk. As prescribed by BLM during the on-site, woodlands in the project locale were surveyed for evidence of raptor nest activity by a wildlife consultant (report on file at the White River Field Office, Meeker). No nests were located nor were any raptors observed within the project area.

Nongame mammals and birds using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

*Environmental Consequences of the Proposed Action:* Construction of this pad would result in the loss of approximately 17 acres of mule deer severe winter range, which would be lost for the entire life of the project. Substantial road upgrades to access the pad will extend industrial development an additional 0.5 miles. Increased activity would likely result in the displacement of wintering big game and may preclude use of the area. Elevated energy demands due to increased activity can have adverse effects on the health of these animals, particularly during the critical winter months. While this 9-well pad would substantially reduce the extent and distribution of forage and cover resources dedicated to access roads, pipelines, and pads associated with the alternate development of 9 separate well pads, it still represents an intrusion on Magnolia's mule deer severe winter range. Final pipeline reclamation, vehicle deterrents (see below), and interim reclamation on the well pad would help offset herbaceous forage losses and accelerate the reestablishment of woody forage and cover components.

*Environmental Consequences of the No Action Alternative:* There would be no action authorized that would potentially influence big game and non-game species or their associated habitats.

*Mitigation:* No activity shall take place within the project area from 1 January through 30 April to minimize undue stress and displacement of wintering mule deer.

The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Aquatic): On a landscape scale, the project area meets the public land health standards for terrestrial animal communities. The proposed action is considered an incremental addition to those lands dedicated to mineral development, but would not detract measurably from continued meeting of the land health standard at the landscape scale.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			X
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise		X	
Paleontology			X
Rangeland Management			X
Realty Authorizations	X		
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

## ACCESS AND TRANSPORTATION

*Affected Environment:* BLM road 1172 bisects proposed pad location and is native surfaced.

*Environmental Consequences of the Proposed Action:* If pad is constructed as designed BLM road 1172 may be blocked to traffic.

*Environmental Consequences of the No Action Alternative:* None.

*Mitigation:* Assure traffic can continue to utilize BLM road 1172 by either allowing safe travel to pass over well pad or construct temporary route around pad to allow free flow of traffic.

## **FIRE MANAGEMENT**

*Affected Environment:* The proposed well pad PCU 297-15 involves approximately 1.4 miles of new road and pipeline and/or road improvement and about 8 acres of drill pad clearing for an approximate total of 17.3 acres of disturbance in pinyon/juniper stands.

The National Fire Plan calls for “firefighter and public safety” to be the highest priority for all fire management activities. In the pinion, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

*Environmental Consequences of the Proposed Action:* Due to the existing tree cover of pinion and juniper, there will be a need for the operator to clear some of these trees. If not adequately treated, these trees will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The road associated with this project may be used by the general public for a variety of uses, including access for fire wood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated the slash and woody debris will create an elevated hazardous dead fuel loading which could pose significant control problems in the event of a wildfire. Additionally there would be greater threat to the public, Exxon personnel, and fire suppression personnel.

*Environmental Consequences of the No Action Alternative:* The increased fuel build up along a public access route would not occur under the no action alternative

*Mitigation:* The operator has several options for treatment of slash from this project (see forest management section). If chipping and scattering is selected BLM recommends a hydro-ax or other mulching type machine be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' 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. This effectively breaks down the woody fuel and scatters the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. If the trees are cut

and removed for firewood, posts, or other products then the branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal or utilized in interim reclamation.

For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

## **FOREST MANAGEMENT**

*Affected Environment:* Vegetation at PCU 297-15 is middle aged pinyon-juniper woodland. Because of the productivity and site characteristics these woodlands are considered commercial. These woodlands are used by the local population for fuel wood, fence posts and Christmas trees.

*Environmental Consequences of the Proposed Action:* Construction of the well pad, access road and pipeline would remove approximately 17 acres of woodland. These woodlands would re-occupy the site following reclamation, with saplings occurring in thirty years and a mature stand occurring in 200-300 years. With treatment of the slash there would not be any increase in insect or disease occurrence.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to the woodland resource.

*Mitigation:* 7. From the White River ROD/RMP of 1997, Appendix B, All trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six 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.

## **GEOLOGY AND MINERALS**

*Affected Environment:* The surface geologic formation of the well locations is Uinta and ExxonMobil's targeted zone is in the Mesaverde. During drilling potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. Aquifers that will be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove and the

Dissolution Surface in the Green River formation. These aquifer zones along with the Wasatch formation are known for difficulties in drilling and cementing. Oil shale and sodium resources are located in the Green River formation. The bottom hole locations for A1 and A3 through A9 are located on Federal Oil and Gas Lease COD-052141 and A2 is located COD-035679. All are within the Piceance Creek Unit COC-47666X

*Environmental Consequences of the Proposed Action:* The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. This includes oil shale and coal zones. However, conventional recovery of the coals is not considered feasible at the depths that are encountered in the well. Development of this well will deplete the natural gas resources in the targeted formation

*Environmental Consequences of the No Action Alternative:* The natural gas resources in the targeted zone would not be recovered at this time.

*Mitigation:* None

## **HYDROLOGY AND WATER RIGHTS**

*Affected Environment:* The proposed action is located in the Lower Piceance Creek Fifth level watershed. Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes streamflow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987). No BLM springs or water wells have been identified within 0.5 miles of any surface disturbing activities associated with the proposed actions. However, a search of water rights through Colorado's Decision Support Systems web site (CDSS, 2006) found one watering well, Piceance Creek Well #4 located on state lands near the mouth of Ryan Gulch (T1S, R97W, Sec. 32 NESE). Piceance Creek Well #4 is an alluvial well with an appropriation date of December 3, 1913. Water rights were filed under case number W1258-72 and 0.011 CFS was decreed for use type "O" (other, monitoring well).

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel, and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

*Environmental Consequences of the Proposed Action:* Improper drainage from well pads, access roads, and pipeline rights of ways will elevate sediment production from disturbed areas. Increased sediment loads to local surface water drainages will result in a sediment rich system. Sediment rich systems are characterized by deposition and high width to depth ratios (W/D ratio) (wide shallow channels). As the W/D ratio increases, the hydraulic stress against the banks also increases and bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, productivity of alluvial wells (such as Piceance Creek Well #4), riparian areas and aquatic life.

Fracturing techniques in production formations may result in greater communication between over/underlying geologic formations. Increased communication between different geologic formations may impact head characteristics in the affected formations. However, fracturing will occur well below the aquifers and no impacts to the hydrology of bedrock aquifers or water rights should occur if surface and intermediate casings are properly cemented to isolate the aquifers.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation:* Refer to mitigation in the Water Quality portion of this document.

## **PALEONTOLOGY**

*Affected Environment:* The area of the proposed well pad and access road is in an area generally mapped as the Uinta Formation (Tweto 1979) which the BLM has classified as a Condition I fossil bearing formation, meaning it is known to produce scientifically important fossil resources.

*Environmental Consequences of the Proposed Action:* If it becomes necessary to excavate into the underlying rock formation to grade the road, level the well pad or excavate the reserve/bloolie pit there is a potential to impact scientifically important fossil resources.

*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 is responsible for informing 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 stop activities in the immediate area 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 to be of noteworthy scientific interest
- the mitigation measures the operator will 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 will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. If, at any time, it becomes necessary to excavate into the underlying rock formation to grade the access road, bury the well tie pipeline, level the well pad or excavate the reserve/bloolie pit a paleontological monitor shall be present prior to the beginning of excavation into the rock.

## **RANGELAND MANAGEMENT**

*Affected Environment:* The proposed action occurs within the Pat Johnson use area of the Little Hills allotment which is licensed for livestock use as follows:

Allotment	Permit #	Livestock # & Kind		Period of Use	Percent Public Land	Authorized Use (AUM)
Little Hills	051408	139	C	11/01-11/30	100	137
		277	C	12/01-12/31	100	282
		139	C	01/01-01/30	100	137

*Environmental Consequences of the Proposed Action:* There will be a net loss of 3 AUMs of forage production as a result of the proposed action.

*Environmental Consequences of the No Action Alternative:* There will be no change from the present situation.

*Mitigation:* Reserve pit fencing will comply with BLM specifications as described in the BLM Gold Book (Fourth Edition, 2005). Reserve pit fence specifications will be included as part of the conditions of approval.

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

## **RECREATION**

*Affected Environment:* The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project areas area has been delineated/most resembles a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

*Environmental Consequences of the Proposed Action:* The public will lose approximately 20 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likelihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment. After construction, the ROS will more resemble that of Roaded Natural.

*Environmental Consequences of the No Action Alternative:* No loss of dispersed recreation potential and no impact to hunting recreationists.

*Mitigation:* None.

## **VISUAL RESOURCES**

*Affected Environment:* The proposed action would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes

should repeat the basic elements found in the predominant natural features of the characteristic landscape.

*Environmental Consequences of the Proposed Action:* The proposed action would be located in an area that would not be visible from RBC 5 (Piceance Creek Road), which would be the route most frequently traveled by a casual observer. The proposed action would be located below the top of the ridgeline in stands of pinyon/juniper trees. By painting all above ground production equipment juniper green to blend with the surrounding vegetation, the level of change to the characteristic landscape would be less than moderate and the objectives of the VRM III classification would be retained.

*Environmental Consequences of the No Action Alternative:* There would be no environmental impacts.

*Mitigation:* All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in this EA, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

#### **REFERENCES CITED:**

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2005a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Amended December 12, 2005 and Effective March 2, 2006.

CDPHE-WQCC, 2006b. "Status of Water Quality in Colorado – 2006, The Update to the 2002 and 2004 305(b) Report," April 2006.

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**PERSONS / AGENCIES CONSULTED:** None

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>
Nate Dieterich	Hydrologist	Air Quality, Water Quality, Surface and Ground, Hydrology and Water Rights, Soils
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern, Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources, Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Lisa Belmonte	Wildlife Biologist	Migratory Birds, Threatened, Endangered and Sensitive Animal Species, Wildlife, Wetlands and Riparian Zones, Wildlife Terrestrial and Aquatic
Melissa J. Kindall	Hazmat Collateral; Range Technician	Wastes, Hazardous or Solid; Wild Horses
Chris Ham	Outdoor Recreation Planner	Wilderness, Access and Transportation, Recreation

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Penny Brown	Realty Specialist	Realty Authorizations
Keith Whitaker	Natural Resource Specialist	Visual Resources

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

## **CO-110-2006-164-EA**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE:** The environmental assessment and analyzing 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.

**DECISION/RATIONALE:** It is my decision to approve the proposal as described in the proposed action, with the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

**MITIGATION MEASURES:**

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour. Disturbed areas will be restored to original contours, and revegetated with a BLM preferred seed mixture. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.
2. Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.
3. The operator is responsible for informing all persons who are associated with the project operations 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 any project or construction activities, the operator is to immediately stop activities in the immediate area 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 likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the 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 will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

4. Pursuant to 43 CFR 10.4(g) the holder of this authorization must 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), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.
5. The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.
6. It is recommended that earthwork associated with this project be conducted outside the migratory bird nesting season (late-May through mid-July).
7. It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.
8. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.
9. Comply with "Gold Book" fourth edition surface operating standards for pipeline constructing (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will restrict non emergency maintenance activities on pipeline ROW and associated

access roads when soils become saturated to a depth of three inches or more. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

10. Surface Water: The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.
11. The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or [Nathan\\_Dieterich@blm.gov](mailto:Nathan_Dieterich@blm.gov). Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.
12. To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, all disturbed areas affected by drilling or subsequent operations, except areas reasonably needed for production operations, shall be reclaimed as early and as nearly as practicable to their original condition and shall be maintained to control dust and minimize erosion (COGCC). To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the WRFO-BLM Area Manager). Reclamation efforts on all pipelines will be final. Interim reclamation of well pads and final reclamation of pipeline right of ways (ROW) will commence as follows:
  - Debris and waste materials other than de minimus amounts, including, but not limited to, concrete, sack bentonite and other drilling mud additives, sand, plastic, pipe and cable, as well as equipment associated with the drilling, re-entry or completion operations shall be removed (COGCC).
  - Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.

- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
  - Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces affected by pipeline/road construction, drilling or subsequent operations, except areas reasonably needed for production operations. Areas on *well pads* not needed for production operations shall be partially reshaped as early and as nearly as practicable to near pre-construction contours. Pipelines will be recontoured to pre-construction contours as soon as construction activities cease.
  - The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in recontouring/partial-reshaping efforts.
  - Recontoured/partially-reshaped areas will be seeded with a BLM approved seed mixture, and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex...) to provide additional protection to topsoil, retain soil moisture, and help promote desired vegetative growth.
  - Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured/partially-reshaped areas to act as flow deflectors and sediment traps. Available woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
  - The operator will be responsible for excluding livestock/wildlife grazing from all reclaimed portions of *well pads*. To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris (unless otherwise instructed by the BLM).
  - The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
  - A bi-annual report showing the operators reclamation schedule and progress will be submitted to the WRFO Area Manager for review.
  - It will be the responsibility of the operator to continue revegetation/reclamation efforts until vegetative communities on all disturbed surfaces are composed of desirable seeded vegetation (as determined by the BLM).
13. Upon final abandonment of well pads, new access roads, and completion of pipelines, 100% of all disturbed surfaces will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative (straw bails, woody debris, straw waddles, biodegradable fabrics...) techniques. All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

14. The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.
15. Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.
16. All disturbed surfaces will be restored to natural contours and revegetated with a BLM approved seed mixture. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.
17. Promptly revegetate all disturbed areas including cut and fill slopes and roadside borrow areas with Native Seed mix #3 below. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipeline until after seeding operations are completed. Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.
 

SPECIES (VARIETY)	LBS. PLS/ACRE
Western wheatgrass (Rosanna)	2
Bluebunch wheatgrass (Secar)	2
Thickspike wheatgrass (Critana)	2
Indian ricegrass (Nezpar)	1
Fourwing saltbush (Wytana)	1
Utah sweetvetch	1
18. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities
19. No activity shall take place within the project area from 1 January through 30 April to minimize undue stress and displacement of wintering mule deer.
20. The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).
21. Assure traffic can continue to utilize BLM road 1172 by either allowing safe travel to pass over well pad or construct temporary route around pad to allow free flow of traffic.

22. The operator has several options for treatment of slash from this project (see forest management section). If chipping and scattering is selected BLM recommends a hydro-ax or other mulching type machine be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' 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. This effectively breaks down the woody fuel and scatters the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. If the trees are cut and removed for firewood, posts, or other products then the branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal or utilized in interim reclamation.
23. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.
24. From the White River ROD/RMP of 1997, Appendix B, All trees removed in the process of construction shall be purchased from the Bureau of Land Management. The trees shall be cut with a maximum stump height of six 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.
22. The operator is responsible for informing 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 stop activities in the immediate area 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 to be of noteworthy scientific interest
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible).
23. 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 cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.
24. If, at any time, it becomes necessary to excavate into the underlying rock formation to grade the access road, bury the well tie pipeline, level the well pad or excavate the reserve/blooi

pit a paleontological monitor shall be present prior to the beginning of excavation into the rock.

25. Reserve pit fencing will comply with BLM specifications as described in the BLM Gold Book (Fourth Edition, 2005). Reserve pit fence specifications will be included as part of the conditions of approval.
26. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities.
27. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

**COMPLIANCE/MONITORING:**

**NAME OF PREPARER:** Keith Whitaker

**NAME OF ENVIRONMENTAL COORDINATOR:** Caroline Hollowed

**SIGNATURE OF AUTHORIZED OFFICIAL:** Manny Z. Menducks *for Keith Whitaker*  
Field Manager

**DATE SIGNED:** 8/23/06

**ATTACHMENTS:** General location map of the proposed action.

# Location of Proposed Action CO-110-2006-164-EA

