

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

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-202-EA

CASEFILE/PROJECT NUMBER (optional):

COC70268 (ROW)
COC60829 (23-22-198)
COC61050 (33-18-198)
COC60826 (34-8-198)
COC60831 (42-31-198)
COC57285 (41-18-297)

PROJECT NAME: Williams' Five Well pad locations:
23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297

LEGAL DESCRIPTION:

Well	T	R	Sec.	P.M.	Quarter Section	X ^a	Y
23-22-198	1 N.	98 W.	22	6 TH P.M.	NE ¹ / ₄ SW ¹ / ₄	723557	4435034
33-18-198	1 N.	98 W.	18		NW ¹ / ₄ SE ¹ / ₄	719399	4426329
34-8-198	1 N.	98 W.	8		SW ¹ / ₄ SE ¹ / ₄	720679	4437871
42-31-198	1 N.	98 W.	31		SE ¹ / ₄ NE ¹ / ₄	719524	4432424
41-18-297	2 S.	97 W.	18		NW ¹ / ₄ NE ¹ / ₄	729006	4417877

^a UTM coordinates were collected during the on-site inspection using the NAD83 datum (Zone 12N).

APPLICANT: Williams Production RMT Company

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: Applications have been received by Williams Production RMT Company to construct 5 well pads, access roads, and install pipelines to each location. Site characteristics of the proposed well pad locations are summarized in Table 1.

Table 1. Dominant vegetation, elevation, watershed, date of on-site, watershed, and well and road density for the proposed well locations

Well Number	Dominant Vegetation	Elevation (ft)	Road Density (roads/mi ²)	Watershed	On-site Date	Surface Owner	Well Density (wells/mi ²)
23-22-198	Wyoming big sagebrush and mixed perennial grasses	6,294	1.68	Yellow Creek	24 April 2006	BLM	< 1
33-18-198	Greasewood and mixed perennial grasses	6,337	2.04				
34-18-198	Mixed perennial grasses	6,215	1.23				
42-31-198	Mixed perennial grasses	6,871	1.89	Duck Creek	12 June 2006		
41-18-297	Mature Pinion-juniper woodlands	6,622	3.11	Ryan Gulch	25 May 2006		

Proposed Action: The proposed action includes constructing **5** well pads (see Table 2 for pad dimensions and total area disturbed). The applicant would also upgrade 1.64 miles (9.91 acres) of existing roads to access the proposed well locations. Total area disturbed including overburden to construct well pads, access roads and pipelines would be approximately **62** acres.

Table 2. Pad dimensions and acres disturbed for the proposed well pad and access roads.

Well Number	Anticipated Construction Date	Dimensions (ft)	Disturbance ^a (Acres)	New Access Road (ft)	Disturbance (acres)
23-22-198	1 September 2006	250 x 400	2.5	2150	2.47
33-18-198	1 September 2006	250 x 400	2.8	209	0.24
34-8-198	1 September 2006	250 x 400	2.8	586	0.67
42-31-198	1 September 2006	250 x 400	2.6	123	0.14
41-18-297	1 September 2006	250 x 400	2.7	362	0.42
Total			13.4	Total	10.33
Roads to be Upgraded					
23-22-198	na	na	na	5570	6.39
Pipelines to be installed					
COC70268	1 June 2007	46,823 x 30	31.76	NA	NA
Total Disturbed Acres					61.88

^a Estimate includes total acres disturbed for pad surface and overburden.

The proposed action includes installing pipelines from the BCU 34-8-198, BCU 33-18-198, BCU 23-22-198, and BCU 42-31-198 wells to a tie-in point with Bass/Dominion's existing pipeline. The application also includes installing a pipeline from the RGU 41-18-297 location. Total length of this pipeline would be approximately 2,161 feet (0.41 mile) with a width of 30 feet. Total acres disturbed would be approximately 1.49 acres. The pipelines will be built next to existing road corridors except in T. 1 N., R. 98 W., sections 19, 29, 30, and 32. At this location, a pipeline would run across an undisturbed area to the tie-in point with Bass/Dominion's pipeline. There are no existing pipelines in this area that the proposed pipeline route could follow. The approximate length of all pipelines would be 46,823 feet (**8.87** miles), with a 30 foot width and include disturbance of **31.76** acres. The pipe diameter will vary between 4 inches to 8 inches. Pipeline construction would begin on 1 June and end on 1 August, 2007.

All access roads and surface disturbing activities will conform to standards outlined in the BLM Gold Book, *Oil and Gas Surface Operating Standards for Oil and Gas Development* (Sept 28, 2005)

Any fences crossed by an access road and /or pipeline to a well location will have a cattleguard installed and maintained to BLM specifications for the lifetime of the project. *All cattleguard/fence work will take place prior to well location, pipeline or plant construction.*

All roadside and well location cut and fill slopes will be revegetated immediately after construction with the seed mixture(s) specified in the conditions of approval. Such revegetation will be either temporary or permanent.

All reserve pits will be fenced to BLM specifications. These specifications will be provided to the operator as part of the Conditions of Approval

Produced waste water could be confined to the pit for a period of 90 days after initial production. During the 90 day period the required waste analysis will be submitted for the Authorized Officer's approval, pursuant to Onshore Oil and Gas Order No. 7 (NTL-2B). A permanent steel tank will be installed in the ground next to the production facilities to contain any produced water for the duration of the well.

Water based reserve pit fluids will be backfilled within one year of construction or by the end of the succeeding summer to allow for evaporation of fluids unless an alternative method of disposal is approved. The backfilling of the reserve pit will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated into the surface materials. There will be a minimum of three feet of cover (overburden) on the pit. All remaining cutting will be solidified and buried in place, or disposed of in an approved manner. The stockpiled ground cover will be evenly distributed over the disturbed areas. The recommended seed mix to be used on all disturbed areas will be determined by the White River Field Office (WRFO). The dirt contractor will be provided with an approved copy of the surface use plan.

Williams will build a temporary lined pit to store frac water while completing the well. The frac pit will be reclaimed immediately following completion.

Chemical pesticides or any other control agent which represents a potential soil, air or water pollutant will not be utilized for any purpose on public lands without express written authorization from the Authorized Officer of the BLM.

The Operator or his contractor will notify the BLM, White River Field Office, (970) 878-3800, forty-eight (48) hours before starting reclamation work that involves earth-moving equipment and upon completion of restoration measures.

During the environmental assessment process for this area, cultural resource clearance inventories were submitted under separate cover by Grand River Institute. Paleo and threatened and endangered species surveys have been completed for the proposed location.

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

NEED FOR THE ACTION: To respond to request by applicant to exercise lease rights and develop potential 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: Pages 2-5 thru 2-6

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

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 (PM₁₀) 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 PM₁₀. Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM₁₀ levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter (µg/m³). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM₁₀ (24-hour average) of 150 µg/m³.

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 (PM₁₀) during construction. Elemental and organic carbon existing in the air as PM₁₀ 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: None

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.

CULTURAL RESOURCES

Affected Environment: Proposed locations 23-22-198, 33-18-198, 34-8-198 and 42-31-198 and access roads: The proposed well pad locations and access roads have been inventoried at the Class III (100% pedestrian) level (Conner 2006, Compliance Dated 7/6/2006) with no new cultural resources identified in the inventoried area.

Proposed location 41-18-297 and access road: The proposed well pad location and access have been inventoried at the Class III (100% pedestrian) level (Conner 2006b, Compliance Dated 8/7/2006) with no new cultural resources identified in the inventoried area.

Well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, 32: The proposed pipeline route has been inventoried at the Class III (100% pedestrian) level (Conner and Davenport 2006c, Compliance Dated 8/24/2006) with one Isolated Find (5RB 5387) located in the inventoried right-of-way.

Environmental Consequences of the Proposed Action: Proposed locations and access routes 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297: The proposed well pads and access routes will not impact any known cultural resources and there are no currently known resources within 308 meters of the well. Previously unrecorded resources could be impacted by unauthorized collection, vibrations from drilling and transportation equipment and increased access into the area, leading to unauthorized collecting.

Proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, 32: The proposed well tie pipeline will probably destroy Isolated Find 5RB 5387 which will result in a very small loss of data to the regional archaeological data base. Most of the recoverable data has been recovered during recordation.

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

Mitigation: Proposed well locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-198-297 and related pipelines and access routes:

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.

Proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, and 32: Monitor during initial blading through the location of 5RB 5387 to ensure no subsurface features or artifact present then standard stipulations as above for the well pad locations for the pipeline.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Spotted knapweed occurs in close proximity to locations 33-18-198, 34-8-198. The alien invasive cheatgrass occurs throughout the project area in association with areas of unvegetated soil disturbance along roads, pipelines, at well locations and as a result of historical grazing practices.

Environmental Consequences of the Proposed Action: The proposed action will create about 62 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 further 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: None

Mitigation: The operator will be required to monitor the project area for a minimum of 5 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**.

Any hay and/or straw used for this proposal shall be certified noxious weed free.

MIGRATORY BIRDS

Affected Environment: Regarding locations 23-22-198, 34-18-198, 42-31-198 and 41-18-297, a variety of migratory bird species fulfill nesting functions in the project area's predominantly pinyon-juniper woodlands, mixed perennial grasslands, and Wyoming big sagebrush shrublands from late May through early August. Species associated with these woodland communities are typical and widely represented in the Resource Area and region. Those bird populations identified by the Rocky Mountain Bird Observatory Partners in Flight program as having higher conservation interest include Brewer's sparrow (which occur in sagebrush-dominated areas), and gray flycatcher, pinyon jay, juniper titmouse, black-throated gray warbler, and violet-green swallow, which occur in pinion-juniper dominated woodlands. The species identified are well distributed at appropriate densities in the White River Resource Area's extensive woodland and shrubland habitats.

The dominant vegetation at location 33-18-198 is basin big sagebrush with greasewood scattered throughout. Dominant herbaceous ground cover perennial grass species include western wheatgrass, basin wild rye, Sandberg bluegrass and squirreltail. Blue-gray gnatcatcher, Brewer's sparrow and Vesper's sparrow are associated with these shrub and grass communities although these basin big sagebrush-dominated shrublands typically support few nesting birds. There are no species of high conservation interest associated with this project.

Environmental Consequences of the Proposed Action: It is unlikely well pad and road construction-related activities at locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297 would have any negative impacts to nesting activities of migratory bird populations.

Construction related activities would start in mid October, 2006, with drilling operations extending into December. Heavy equipment use and high levels of activity associated with site construction would not occur during the migratory bird nesting season and would therefore have no influence on nesting activities of local breeding bird populations that use pinyon-juniper woodlands, greasewood, mixed perennial grass, and sagebrush communities for nesting.

The development of reserve pits in the project area may attract waterfowl and other migratory birds for the purposes of resting, foraging, or as a source of free water. Recently on BLM lands within the WRFO, there have been incidents of waterfowl mortality at reserve pits during or after completion operations, after birds have contacted oil-based drilling fluids (Brett Smithers, BLM WRFO, pers. comm.). Contact with these fluids may impact migratory birds by causing acute or

chronic toxicity, or by affecting the insulation of feathers. Such mortality of migratory birds is prohibited by the MBTA. The extent of these incidents is not well understood, but is being investigated by the BLM and the oil-and-gas companies involved. Until the causes of mortality are better understood, mitigation measures at reserve pits must be designed to prevent bird contact with produced water and drilling and completion fluids.

Environmental Consequences of the No Action Alternative: There would be no affect on migratory birds or their habitats under the no action alternative.

Mitigation: Williams would be responsible for implementing mitigation measures that minimize bird injuries or mortalities as a result of contact with reserve pits. The most common measure being used is placing netting or wiring over reserve pits. Williams will notify the BLM of the method that will be used to prevent impacts to birds two weeks prior to the date when completion activities are expected to begin. The BLM-approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

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

Affected Environment: There are no threatened or endangered animals that are known to inhabit or derive important benefit from the project vicinity.

The proposed project area for location 41-18-297 includes suitable nesting habitat for BLM-sensitive raptor species. Areas potentially influenced by the proposed action for location 41-18-297 were surveyed for woodland raptor nesting activity by WestWater Engineering on 30 August 2006. No nests were observed in the project area.

Location 41-18-297, and various sections of the proposed pipeline route and sections of access road to be constructed will include the removal of mature stands of Pinion-juniper. These mature stands include well developed forest canopies and large diameter trees that offer nesting and foraging habitat for northern goshawk, and roosting habitat for three species of bats (e.g., fringed and Yuma myotis, and Thompson's big-eared bat). Roosts and hiberacula of these BLM-sensitive bat species are generally associated with caves, buildings, and underground mines; woodland roost sites offer limited day roost habitat during the spring, summer and fall months. There is some evidence that suggests that bat roost trees may be more often situated within the interior of stands rather than on the stand margins.

Northern goshawk nesting habitat in the Piceance Basin can generally be described as contiguous stands of large diameter, mature to old-growth Pinion-juniper. Often, these sites are located on north to northwest facing slopes where conditions are generally more mesic. Suitable nesting habitat is also most often found mid-slope, or in the bottom of drainages with suitable nesting cover.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on animals listed under the Endangered Species Act.

Considering the nearly 250,000 acres of pinyon-juniper woodland in Piceance Basin, the direct removal of approximately **13** acres of mature stands of Pinion-juniper is unlikely to have any substantive influence on the availability of bat roost substrate or the suitability of stands for bat roosting activity. Indirect impacts to woodland raptor and bat populations as a result of cumulative removal of mature pinion-juniper woodlands throughout the Piceance Basin as a result of increased oil and gas activity and the construction of well pads, access roads, pipelines and other ancillary facilities is unknown.

Environmental Consequences of the No Action Alternative: No immediate action would be authorized that would involve the adverse modification of Pinion-juniper or sagebrush habitat. Alternate pad locations would likely be situated off the county road, involving more extensive access needs and more extensive direct and indirect loss sage grouse habitat.

Mitigation: None

Finding on the Public Land Health Standard for Threatened & Endangered species:

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 waste generated by the proposed action.

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

Affected Environment: The proposed action is located in the Yellow Creek and Lower Piceance Creek fifth level watersheds. Proposed locations 23-22-198, 33-18-198, 34-8-198, and 42-31-198 are all situated in the Yellow Creek fifth level watershed in stream segment 13b of the

White River Basin. Affected 6th and 7th level watersheds within stream segment 13b of the White River Basin are Duck Creek, Barcus Creek, and Pinto Gulch. Barcus Creek, Duck Creek, and Pinto Gulch are all ephemeral tributaries to Yellow Creek which is a perennial tributary to the White River. Proposed location 41-18-297 is situated in stream segment 16 of the White River Basin and is located in the Lower Piceance Creek fifth level watershed. Affected 6th and 7th level watersheds within stream segment 16 are Ryan Gulch and Hog Lot Draw. Ryan Gulch (intermittent) and Hog Lot Draw (ephemeral) are both 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. Table 1 shows the affected watersheds and associated water quality stream segments to be impacted by the proposed actions.

Table 1:

Watershed	Stream segment	Location #	Drainage Basin	Use Protected	303(d) listed	M&E listed	Beneficial Use Classification
Duck Creek	13b	42-31-198	White River	UP	N/A	N/A	Warm Aquatic life 2, Recreation 2, Agriculture
Barcus Creek		42-31-198; 33-18-198; 34-8-198					
Pinto Gulch		23-22-198					
Ryan Gulch	16	41-18-297					
Hog Lot Draw							

(CDPHE 2005a)

Stream segment 13b of the White River Basin is defined as the mainstem of Piceance Creek from the Emily Oldland diversion dam to the confluence with the White River. The State has classified stream segment 13b 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).

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 13 and 16 were not listed.

Within the Piceance/Yellow Creek drainage basin, the quality of the surface water and ground water are related, except during periods of extensive runoff due to storms and snowmelt, when streams are freshened. During other periods, approximately 80 percent of the annual flow of Piceance Creek and Yellow Creek originates as discharge from alluvial and bedrock aquifers. During steady-flow conditions on March 26, 1981, analysis of the major dissolved constituents at numerous sites in Piceance Creek generally indicated increases in the downstream direction. The concentrations of dissolved solids, bicarbonate, sulfate, and sodium increased due to the discharge of water from the bedrock aquifers to the stream valley and tributaries (Tobin, 1987).

Ground Water: Surface geologic formation at all of the proposed locations 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
Upper Piceance Basin aquifer	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
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000

Summary of Hydrogeologic Units						
Hydrogeologic Unit	Stratigraphic Unit	Physical Description	Thickness	Hydraulic Conductivity	Yield	TDS
			(ft)	(ft/day)	(gpm)	mg/L
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
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	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 water chemistry of the upper bedrock aquifers is dominated by dissolved calcium, magnesium, and bicarbonate along the rim of the basin; and by sodium, magnesium, bicarbonate, and sulfate in the central part of the basin. These constituents are characteristic of water in the upper aquifers, principally the Uinta Formation. Sodium and bicarbonate are the dominant dissolved constituents in the upper aquifers generally are lower than 1,000 milligrams per liter. Characteristic trace elements include strontium in concentrations of several milligrams per liter in the Uinta Formation, and fluoride in concentrations of greater than 1 milligram per liter in water samples from the lower part of the upper aquifers (Tobin, 1987).

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, sedimentation and salt loading to surface waters in of the Colorado River System. 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 the Colorado River System. In addition, spills or leaks of produced water or mechanical means of produced water evaporation which may result in overspray would likely result in increased salt deposits (notably sodium and chlorides). Salt deposition resulting from spills, leaks, or overspray may adversely impact the health of surrounding vegetation reducing effective ground cover and increasing the potential for soil erosion. In addition, salts deposits

would likely 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. 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 all surface disturbing activities (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. 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. 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 2006).
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- 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 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 responsible for achieving a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after the application of seed. The ground cover of reclaimed seed species shall be comparable to that of the nearby undisturbed plant communities at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM. Rehabilitation efforts must be repeated if it is concluded that the success rate is below an expectable level as determined by the BLM.
- A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by 15 May and 15 November of each calendar year, and will include the well number, legal description, project description (e.g., well pad or pipeline), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, estimate of acres seeded and seeding method (e.g., disk-plowed, drilled, or both). Internal and external review of this plan and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the plan. The Reclamation Status Report will be submitted electronically via email as a Microsoft Excel table to Natural Resource Specialist, Brett Smithers (brett_smithers@blm.gov).

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 than 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).

In addition, to mitigate water being channelized down the roadway, all activity must stop when soils or road surfaces become saturated to a depth of three inches. Furthermore, mud blading will be prohibited in attempts to reduce further soil displacement and sedimentation/salt loading to surface waters.

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Mesaverde Formation will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to surface water. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment will be required to intercept such contaminants prior to contacting soils. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

Finding on the Public Land Health Standard for water quality: Stream segments 13b and 16 of the White River Basin currently meet water quality standards set by the state. 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 area adjacent to the proposed project area does not support riparian or wetland communities. Furthermore, riparian or wetland communities will not be directly involved or potentially affected by the proposed action.

Environmental Consequences of the Proposed Action: The proposed action would have no conceivable influence on riparian or wetland communities.

Environmental Consequences of the No Action Alternative: The no-action alternative would not have any conceivable influence on riparian or wetland communities.

Mitigation: None

Finding on the Public Land Health Standard for riparian systems: This project would have no conceivable potential for influencing riparian attributes addressed in the Standards.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, Wilderness, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. 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 3 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Table 3:

Soil Number	Soil Name	Slope	Acres w/in 30 m	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
36	Glendive fine sandy loam	2-4%	80	Foothills Swale	2-4	Slow	Slight	>60
64	Piceance fine sandy loam	5-15%	10.27	Rolling Loam	<2	Medium	Moderate to high	20-40
70	Redcreek-Rentsac complex	5-30%	7.76	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	5-50%	154.23	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20
91	Torriorthents-Rock Outcrop complex	15-90%	15.32	Stoney Foothills	<2	Rapid	Very high	10-20
104	Yamac Loam	2-15%	1.39	Rolling Loam	<2	Medium	Slight to moderate	>60

CSU-1 “fragile soils” have been throughout the proposed project area. However, after an onsite evaluation and review of a topographic map it was determined that no surface disturbing activities will occur on slopes greater than 35%. Thus, controlled surface use stipulations will not be in effect.

36-Glendive fine sandy loam (2-4 percent slopes) is a deep, well drained soil, formed in alluvium and found along alluvial valley floors. Typically, the surface layer is pale brown fine sandy loam 6 inches thick. The underlying material to a depth of 60 inches or more is very pale brown, stratified fine sandy loam that has thin lenses of loamy fine sand to sandy clay loam. The soil is calcareous throughout. Permeability of this Glendive soil is moderately rapid. Available water capacity is moderate. Effective rooting depth is 60 inches or more. Runoff is slow, and the hazard of water erosion is slight.

64-Piceance fine sandy loam (5 to 15 percent slopes) is a moderately deep, well drained soil is on uplands and broad ridgetops. It formed in eolian material and colluvium derived dominantly from sandstone. The native vegetation is mainly low shrubs, grasses, and a few pinyon trees. Elevation is 6,300 to 7,500 feet. Typically, the surface layer is brown fine sandy loam 4 inches thick. The upper 5 inches of the subsoil is brown loam, and the lower 13 inches is light yellowish brown loam. The substratum is very pale brown channery loam 8 inches thick. Hard sandstone is at a depth of 30 inches. Depth to sandstone ranges from 20 to 40 inches. Permeability of this Piceance soil is moderate. Available water capacity is moderately low. Effective rooting depth is 20 to 40 inches. Runoff is slow to medium, and the hazard of water erosion is moderate to high.

70-Redcreek-Rentsac complex (5 to 30 percent slopes) is found on mountainsides and ridges. The native vegetation is mainly pinyon and juniper trees with an understory of shrubs and

grasses. 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 situated 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. 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.

91-Torriorthents-Rock outcrop complex (15 to 90 percent slopes) is found on extremely rough and eroded areas on mountains, hills, ridges, and canyon sides. The native vegetation is mainly sparse shrubs and grasses with some pinyon and juniper trees.

This unit is 50 percent Torriorthents that have slopes of 15 to 65 percent and 30 percent Rock outcrop that has slopes of 35 to 90 percent. Torriorthents are very shallow to moderately deep and are well drained and somewhat excessively drained. They formed in residuum and colluvium derived dominantly from sandstone, shale, limestone, and siltstone. Shale or sandstone is at a depth of 16 inches. Torriorthents are calcareous throughout. In some areas the surface layer is stony or flaggy. Permeability of the Torriorthents is moderate. Available water capacity is very low. Effective rooting depth is 10 to 20 inches. Runoff is very rapid, and the hazard of water erosion is very high.

Rock outcrop consists of barren escarpments, ridge caps, and points of sandstone, shale, limestone, or siltstone. The escarpments are 3 to 50 feet thick and 25 to 2,500 feet long.

104-Yamac loam (2 to 15 percent slopes) is a deep, well drained soil found on rolling uplands, terraces, and fans. It formed in eolian and alluvial material. The native vegetation is mainly low shrubs and grasses. Typically, the surface layer is brown loam 4 inches thick. The upper 8

inches of the subsoil is brown loam, and the lower 10 inches is highly calcareous loam. The upper 26 inches of the substratum is very pale brown loam, and the lower part to a depth of 60 inches or more is pale brown loam. Permeability of this Yamac soil is moderate. Available water capacity is moderate to high. Effective rooting depth is 60 inches or more. Runoff is medium, and the hazard of water erosion is slight to moderate.

Environmental Consequences of the Proposed Action: Clearing and grading of well pads, pipeline right of ways and access road 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 (rutting of roads, ect...) 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. In addition, surface disturbing activities could promote the spread of undesirable plant species such as cheatgrass within the vegetative understory. Undesirable plant species such as cheatgrass lack sufficient rooting structures required to stabilize soils and provide for adequate soil infiltration and permeability rates. Accelerated soil erosion from disturbed areas would likely follow spread of undesirable plant species.

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. Mud blading will be prohibited and all activity shall cease when soils or road surfaces become saturated to a depth of three inches (on BLM administered lands) unless otherwise approved by the AO. 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: Soils in the vicinity of the proposed action currently are meeting the standards. By following all suggested mitigation techniques and reclamation procedures, soil health should remain unchanged from current conditions.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The 23-22-198 well location will disturb approximately 2.5 acres of a north east facing toe slope that is sparsely vegetated with scattered Utah juniper and Wyoming sagebrush and a sparse > 10% cover of perennial bunch grasses including needle and thread, bluebunch wheatgrass, and sandberg poa. The associated road will disturb 2.68 acres of mature and old growth pinion juniper woodland with a limited understory of similar perennial bunchgrasses, mountain mahogany and Wyoming sagebrush and 6.18 acres of basin big sagebrush and greasewood drainage bottom. The cross country pipeline for this location will disturb 3.98 acres of mixed Wyoming and basin big sagebrush with greasewood and an understory of cheatgrass, western wheatgrass and Indian Ricegrass. The remaining 2 acres of disturbance from the pipeline will be in open old growth pinion juniper woodland with a limited understory of perennial bunchgrasses. The proposed disturbance is within a foothill swale or pinion juniper range site.

The 33-18-198 well location will disturb 3.04 acres of the 2001 Jelly fire which was reseeded with western wheatgrass, Indian ricegrass and bluebunch wheatgrass. The pipeline for this location will be along the road and will disturb approximately 12 acres of mature and old growth woodland as well as sagebrush and greasewood drainage bottoms and chained and burned flats on Pinto Mesa. The proposed disturbance is within a foothill swale or pinion juniper range site.

The 34-8-198 location will disturb 3.47 acres of perennial grass land with some cheatgrass infestation. The pipeline will disturb 5.4 acres of the 2001 Jelly fire which was reseeded with western wheatgrass, Indian ricegrass and bluebunch wheatgrass and will tie into the pipeline for location 33-18-198. The proposed disturbance is within a foothill swale or pinion juniper range site.

The 42-31-198 well location will disturb 2.74 acres of old growth pinion juniper woodland with a limited understory of mountain mahogany, Wyoming sagebrush and a sparse > 10% cover of perennial bunch grasses including needle and thread, bluebunch wheatgrass, and Indian ricegrass. The pipeline will be within existing disturbance. The proposed disturbance is within a pinion juniper range site.

The 41-18-297 will disturb 3.12 acres of mature and old growth pinion juniper woodland with a limited understory of mountain mahogany, Wyoming sagebrush and a sparse > 10% cover of perennial bunch grasses including needle and thread, bluebunch wheatgrass, and Indian ricegrass. The proposed disturbance is within a pinion juniper range site.

Environmental Consequences of the Proposed Action: The access roads, pipelines and well pads for the proposed action will collectively remove 61.88 acres of basin big sagebrush and greasewood, Wyoming sagebrush, and pinion juniper communities from a functioning vegetation community. Upon completion of the proposed well pad and access roads, fugitive dust could have a negative effect on vegetation directly adjacent to the access roads once dust settles on the vegetation plants are not able to efficiently carry out the photosynthetic process and will become stressed and eventually die. Prompt revegetation of disturbed areas and suppression of noxious/problem weeds will reduce but not eliminate the long term negative impact of oil and gas development and infrastructure on native plant communities associated with this project.

Environmental Consequences of the No Action Alternative: None

Mitigation: All disturbed areas for the pipeline, access road and location with the exception of the access road travel surface and the area around well pad production facilities will be reclaimed within the first growing season or prior to the first full growing season following disturbance with Native Seed as described below:

Promptly revegetate all disturbed areas with Native Seed mix #3 and #5 as listed below. Interim reclamation areas will be fenced to BLM specifications to prevent livestock /wild horse use. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipelines 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.

For locations 23-22-198, 33-18-198, 34-8-198, and their associated roads and pipelines use the following seed mix:

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
5	Basin Wildrye (Magnar)	2	Foothill Swale, Sandy Swale, Swale Meadow
	Western wheatgrass (Rosanna)	3	
	Bluebunch wheatgrass (Whitmar)	2	
	Thickspike wheatgrass (Critana)	1	
	Fourwing saltbush (Wytana)	1	
Alternates: Utah sweetvetch, globemallow			

For locations 42-31-198 and 41-18-297 and all associated roads and pipelines us the following seed mix:

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
3	Western wheatgrass (Rosanna)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
	Bluebunch wheatgrass (Whitmar)	2	
	Thickspike wheatgrass (Critana)	1	
	Indian ricegrass (Rimrock)	2	
	Fourwing saltbush (Wytana)	1	
	Utah sweetvetch	1	
Alternates: Needle and thread, globemallow			

Successful revegetation should be achieved within three years. The operator will be required to monitor the project site(s) for a minimum of three years post-construction to detect the presence of noxious/invasive species. Any such species which occur will be eradicated using materials and methods approved in advance by the Authorized Officer.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): Most of the public land plant communities within the area of the proposed action have an appropriate age structure and diversity of species which meet

the criteria established in the standard for vegetation. With successful reclamation, the proposed action would not change this status.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: The proposed locations are separated from warm-water aquatic communities supported by the lower White River by approximately 5 miles of ephemeral channel.

Environmental Consequences of the Proposed Action: Separated by approximately 5 miles of ephemeral channel, there is no reasonable likelihood that aquatic habitats associated with downstream perennial systems would be influenced by proposed well and road construction.

Environmental Consequences of the No Action Alternative: There would be no immediate action authorized that would have potential to affect wetland or riparian communities.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Because there are no aquatic habitats or animals potentially influenced by the proposed or no-action alternatives, a land health standard finding is not applicable. The proposed and no action alternatives would have no measurable influence on aquatic habitats associated with downstream systems.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: All proposed locations include big game winter range, though none of the locations are classified as deer critical winter habitat. One of the most important functions of areas classified as big game winter range is fulfilled during the early spring periods (April through early May).

Location 41-18-297, and various sections of the proposed pipeline route and sections of access road to be constructed will include the removal of mature stands of Pinion-juniper that may provide suitable nesting habitat for raptors. Mature pinion-juniper woodlands that may provide suitable nesting habitat for raptors and that will be impacted by the proposed action were surveyed by Van Graham (Biologist, WestWater Engineering) on 30 August 2006 (WestWater, 2006). No active nests or nest structures were identified.

Nongame bird abundance and composition associated with the project areas' woodland and shrubland habitats are considered representative and complete with no obvious deficiencies in composition. Small mammal populations and distribution are poorly documented; however, the species potentially occurring on these sites are widely distributed throughout the State and the Great Basin or Rocky Mountain regions. All of these upland species display broad ecological

tolerance and are documented from habitats ranging from foothill to alpine sites. No narrowly distributed or highly specialized species or sub-specific populations are known to occur in Piceance Basin.

Environmental Consequences of the Proposed Action: Big game impacts associated with unregulated vehicle use that result in avoidance and disuse of affected habitats, and increased energetic demands during critical periods, were addressed in the White River ROD/RMP. To stabilize road density and its influence on big game physiology and habitat utility, an effective road density objective of ≤ 3 miles per square mile was established in the White River ROD/RMP on big game winter ranges. Road density equals approximately 1.68, 2.04, 1.23, 1.89, and 3.11 miles of road per square mile at locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297, respectively.

The prevailing 2004 and 2005 winter weather conditions have been marked by unseasonably mild temperatures, including diminished snow pack and early emergence of herbaceous forage. Deer appear to be in remarkably good condition for this time of year. It is recommended that no condition of approval be applied to this action as these conditions meet the exception criteria for the WRFO severe winter range timing limitation stipulation. By implementing reclamation measures recommended in the mitigation section, short and long term habitat integrity, particularly for big game, would remain essentially unaffected.

Based on survey results, it is unlikely that development of the 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297 locations would have potential to disrupt non BLM-sensitive raptor nest efforts.

Environmental Consequences of the No Action Alternative: No immediate action would be authorized that would involve the adverse modification of terrestrial wildlife habitats. Alternate pad locations may be increasingly likely to be situated more distant from established roads, thereby involving more extensive access needs and more extensive direct and indirect involvement of functional habitat.

Mitigation: None

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): This project should have no conceivable influence on the condition or function of terrestrial habitats or wildlife associated with these habitats and therefore, would have no influence on continued maintenance of associated land health standards.

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

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
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			
Realty Authorizations		X	
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses			

ACCESS AND TRANSPORTATION

Affected Environment: Rio Blanco County roads 88 and 122 in addition to BLM road 1019 as well as an unnumbered unnamed BLM route use to access location 41-18-497 will be affected by the proposed action. All routes are currently native surface. Locations 23-22-198,33-18-198, 34-8-198, 42-31-198 are located in an area where motorized travel is limited to existing routes from October 15th through May 1st. Cross country travel is allowed the remainder of the year. Location 41-18-497 is located in an area where motorized travel limited to existing routes.

Environmental Consequences of the Proposed Action: An increase in traffic can be expected on proposed access roads RBC 88 and 122 as well as BLM roads 1019 as well as an unnumbered unnamed BLM route use to access location 41-18-497. It is also likely that road surface damage will occur due to heavy weight vehicle traffic and increases use of roads.

Environmental Consequences of the No Action Alternative: None.

Mitigation: BLM roads utilized by proposed action will be constructed and maintained according to BLM “Gold Book” 4th edition standards.

FIRE MANAGEMENT

Affected Environment: Wells 23-22-198 and 41-18-297 involves approximately 13.79 acres of new road construction/improvement, pipeline, and well pad construction that traverses through mature pinyon-juniper woodlands.

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, Williams’s 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 could 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 would effectively breakdown the woody fuel and scatter 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: Only two of the wells (23-22-198, 41-18-297) would impact woodland resources. Table 3 in the environmental consequences section details the acreage of these woodlands. The woodlands involved are mature/old growth stands composed of pinyon and juniper with pinyon being the dominate species. Old growth woodlands are a minority plant community in the Piceance Basin and contain individual trees older than 700 years . Old growth

has a priority for conservation under the Healthy Forest Act and should be avoided to the greatest extent.

Environmental Consequences of the Proposed Action: The following table shows the expected loss of woodland acres by well number. Following reclamation of the well pad and associated disturbances it is expected that pinyon and juniper will invade the site within 50 years and would develop a mature stand within 300 years. Of greater concern is the loss of individual legacy trees and fragmentation of stands. Fragmentation could increase the opportunity for disease vectors, both insects and pathogens. Treatment of the slash as described below would help to mitigate this concern. Preventing pruning along the roads would also decrease the slash and prevent injury to individual trees which would maintain tree and stand health.

Table 3. Estimated acres of Pinion-juniper woodland that would be affected by the proposed action.

Well Number	Pad Size (ft)	Well Pad P/J Disturbance (Acres)	Access through P/J Acres	Pipeline through P/J Acres	Total Disturbance (acres)
23-22-198	250 x 400	0	2.68	2	4.68
33-18-198	250 x 400	0	0	0	0
34-8-198	250 x 400	0	0		0
42-31-198	250 x 400	0	0		0
41-18-297	250 x 400	2.7	3.41	3	9.11
Total Disturbed Acres					13.79

Environmental Consequences of the No Action Alternative: Not harvesting the trees would maintain stand integrity and woodland health and current levels..

Mitigation: 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 chipping and scattering.

The operator will not prune trees along access routes.

GEOLOGY AND MINERALS

Affected Environment: Well 34-8-198 is located in the area identified in the White River ROD/RMP as available for oil shale and sodium leasing; wells 23-22-198, 42-31-198 and 41-18- are in an area identified as available for multi-mineral leasing, and well 33-18-198 is located in the area identified in the White River ROD/RMP as available for oil shale leasing. The surface geologic formation of the well location is Uinta with the Green River, Wasatch and Mesaverde formations being penetrated during drilling. The targeted zone is located in the lower Mesaverde/upper Mancos. Potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. Aquifers that will be encountered during drilling include the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. Sodium and oil shale resources will be encountered in the Green River formation. Potential Gas producing formations include the Wasatch and Mesaverde.

The Green River aquifer zones and portions of the Wasatch are known for areas of loss circulation and difficulties in drilling and cementing.

Environmental Consequences of the Proposed Action: Drilling and completion of this well may adversely affect the aquifers if there is loss of circulation or problems cementing the casing. The proposed cementing and completion procedure of the surface casing protects and isolates the mineral resources and aquifers in the Green River formation. The proposed cementing procedure for the production casing will isolate the formations from the casing shoe to the surface casing. Development of this well will deplete the hydrocarbon resources in the targeted formation.

Environmental Consequences of the No Action Alternative: None

Mitigation: None

HYDROLOGY AND WATER RIGHTS

Affected Environment: The proposed action is located in the Yellow Creek and Lower Piceance Creek fifth level watersheds. Proposed locations 23-22-198, 33-18-198, 34-8-198, and 42-31-198 are all situated in the Yellow Creek fifth level watershed. Affected 6th and 7th level watersheds in the Yellow Creek fifth level watershed are Duck Creek, Barcus Creek, and Pinto Gulch. Barcus Creek, Duck Creek, and Pinto Gulch are all ephemeral tributaries to Yellow Creek which is a perennial tributary to the White River. Proposed location 41-18-297 is located in the Lower Piceance Creek fifth level watershed. Affected 6th and 7th level watersheds are Ryan Gulch and Hog Lot Draw. Ryan Gulch (intermittent) and Hog Lot Draw (ephemeral) are both 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.

Stream flows in Piceance Creek, Yellow Creek and their 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. 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).

The stream banks of Piceance Creek and Yellow 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).

A search of the WRFO water rights data base revealed no springs or water wells within a 0.5 mile radius of any surface disturbing activities.

Environmental Consequences of the Proposed Action: Improper drainage from the well pad will likely 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 (Rosgen, 1996).

Environmental Consequences of the No Action Alternative: None

Mitigation: See water quality portion of this document.

PALEONTOLOGY

Affected Environment: Proposed locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297 and related access route and the proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, 32 are in an area generally mapped as the Uinta Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I formation meaning it is known to produce scientifically important fossil resources.

Environmental Consequences of the Proposed Action: Proposed locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297, related access routes and the proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, 32: If, at any time, it becomes necessary to excavate into the underlying rock formation to construct the access road, level the well pad or excavate the reserve/blooiie 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: Proposed locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297, related access routes and proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, 32: 1. All exposed outcrops of the Uinta Formation shall be inventoried by an approved paleontologist with a report detailing the results of the inventory and any recommended

mitigation shall be submitted to the BLM prior to the initiation of construction. Additional mitigation may be required based upon inventory results.

2. 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.

RANGELAND MANAGEMENT

Affected Environment: In the proposed action the wells in T. 1 N., R. 98 W. occur in Barcus-Pinto pasture of the Yellow Creek Allotment (06030). This allotment is used by the Burke brothers for cattle grazing on a yearly basis as follows in the first table below. The proposed well in T. 2, R. 97 W. 18 is located in the South Ryan Pasture of the Square S Allotment (06027), used by Boone Vaughn and the Mantle Ranch to graze livestock as outlined in the second table below.

Allotment/ Pasture Name	Livestock number and kind		Period of Use	Percent Public Land	Authorized Use (AUM)
Yellow Crk, Barcus Pinto Pasture	240	C	05/01-05/15	100	118
Yellow Crk, Barcus Pinto Pasture	340	C	05/16-06/30	100	514
Yellow Crk, Barcus Pinto Pasture	340	C	10/16-12/30	100	850

Allotment/ Pasture Name	Livestock number and kind		Period of Use	Percent Public Land	Authorized Use (AUM)
Square S, South Ryan	500	C	5/1- 5/20	96	319
Square S, South Ryan	250	C	10/1- 10/25	66	138

Environmental Consequences of the Proposed Action: Surface disturbing activities associated with the proposed action in the Yellow Creek allotment would result in the loss of 20 AUMs of livestock forage. Implementation of the proposed action in the Square S allotment, South Ryan pasture would result in a long term loss of 2 AUMs of livestock forage.

On disturbed areas that are successfully rehabilitated, herbaceous vegetation and herbaceous forage production typically recovers to the level before disturbance in three years. Rehabilitated sites often produce more livestock forage than native rangeland. There would be a significant long-term loss of forage as a result of the well pads and associated roads that would persist for the life of the project. Airborne dust from roads that coats vegetation will negatively impact the vegetation and reduce/negate its usability as forage.

If construction takes place during the permitted grazing period harm to livestock could occur from traffic accidents, open pits or trenches or consumption of contaminated water or forage. Any livestock losses from operations conducted by the applicant would require a negotiated settlement between the applicant and the livestock owner.

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

Mitigation: 1) The pipelines for locations 23-22-198, 33-18-198, 34-8-198 have been flagged far off (50 feet plus) the existing County road. In order to reduce disturbance of existing soils/ vegetation the pipelines should be relocated so that they utilize as much of the existing roadbed as possible. 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 apply water to access roads to reduce airborne dust and damage to roadside vegetation communities

REALTY AUTHORIZATIONS

Affected Environment: The proposed action is in an area where there aren't any existing pipelines that show up on the Master Title Plats or in Carat.

Environmental Consequences of the Proposed Action: None

Environmental Consequences of the No Action Alternative: None

Mitigation: 1. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.

2. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations).

3. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land

Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

4. The holder shall survey and clearly mark the centerline and/or exterior limits of the right-of-way prior to any surface disturbing activity, as determined by the authorized officer.
5. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of three inches deep, the soil shall be deemed too wet to adequately support construction equipment. The holder shall inform the authorized officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.
6. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State(s) of xx and regulations issued thereunder. Holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.
7. When construction activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the authorized officer and fenced by the holder as per instruction of the authorized officer.
8. If "cross country" access is necessary, clearing vegetation or grading a roadbed will be avoided whenever practicable. All construction and vehicular traffic shall be confined to the right-of-way or designated access routes, roads, or trails unless otherwise authorized in writing by the authorized officer. All temporary roads used for construction shall be rehabilitated after construction is completed. Only one road or access route will be permitted to each site requiring access.
9. Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, State or Federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipater at the outlets, and design and install suitable channel protection structures necessary to

ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be removed from the site upon completion of hydrostatic testing.

10. The holder shall inform the authorized officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.

11. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State(s) of xx and regulations issued thereunder. Holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.

12. Upon completion of the reclamation and seeding, a copy of the seed tags shall be submitted to this office within 30 days after seeding.

13. The holder shall submit engineered as-built drawings to this office within 60 days of completion of the project.

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 have 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 30 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.

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 actions 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 actions would not be visible to a casual observer traveling on RBC 5 (Piceance Creek Road), which would be the closest paved route that would be utilized. Locations #34-8-198 & #33-18-198 would be located in the valley adjacent to Barcus Creek and visible for a short period of time only to a casual visitor traveling along the dirt road that passes close to the locations. Location #42-31-198 would be located below the ridgeline on the north facing slope close to an existing dirt road that basically follows the ridgeline in this area. A casual observer traveling along this road would be able to view the location for a short period of time. Location #41-18-297D would be located on the side of a ridge in stands of pinyon/juniper and would be visible only to a casual observer traveling along the access road to the well pad. Location #23-22-198 would be located near the bottom of Pinto Gulch and not visible by a casual except when traveling along the access road to the location. By painting all production facilities juniper green to mimic the surrounding vegetation and the vegetation in the backdrop to repeat the basic elements of color and form, 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.

WILD HORSES

Affected Environment: Wild horses on public lands are protected, under the Wild and Free Roaming Horse and Burro Act of 1971 and are managed by the BLM, White River Field Office. White River's RMP/ROD (BLM 1997) includes an implementation plan for wild horse management. The wild horses are managed by BLM to provide a healthy, viable breeding population with a diverse age structure.

BLM's Piceance/East Douglas Herd Management Area (HMA) consists of approximately 190,000 acres. The proposed project is located in this HMA. The current configuration of the Piceance/East Douglas HMA provides for high summer range on the Cathedral Bluffs, surrounded by adjacent fall-winter-spring ranges in both the Piceance and Douglas Creek Basins. The Piceance/East Douglas HMA is especially valuable because of the habitat diversity it contains. Vegetation within the HMA consists of pinyon-juniper woodlands interspersed with sagebrush and greasewood. Wild horses rely on these woodlands during the summer months for shade and protection of newborn foals from predation and during the winter months for cover during severe winter storms. Over 90 percent of wild horse diet is comprised of grasses with shrubs becoming more important during periods of heavy snowfall when horses can less readily paw through snow cover to the grass below. Water intake is supplied by springs, man-made water developments, stock ponds, and perennial streams, as well as, areas of pooled water from rain and snow runoff.

The population of the Piceance/East Douglas herd, prior to the spring 2006 foal crop, was estimated at 363 individuals. The management range is between 135 and 235 animals. The herd's annual production rate is on the order of 20 percent. The wild horse population is controlled through round-ups and adoptions of surplus animals every fourth year. The White River Field Office recently completed the gathering of these wild horses in the HMA in September, 2006. Wild horse viewing is a popular form of non-consumptive recreation.

Environmental Consequences of the Proposed Action: The proposed action is located in the Herd Management Area (HMA). Approximately northern half of the project is located in what is known as the Greasewood portion of the HMA while the southern half of the project is located in what is known as the Barcus/Pinto Mesa portion. Construction and operation of the proposed project would result in the removal of approximately 62 acres of land area for the wild horse herd within the HMA. The primary impact would be removal of existing vegetation and loss of forage and cover. The loss of 62 acres in an area of 190,000 acres would be approximately 0.0003 percent. Additionally, wild horses could be disrupted by noise and fugitive dust associated with the proposed action's activities, particularly during foal season. Impacts would be expected to be temporary and limited to the construction period with fugitive dust occurring when road ways would be in use.

Environmental Consequences of the No Action: There would be no impacts to the wild horse herd management area with a No Action Alternative.

Mitigation: All installed cattleguards at fence crossings associated with access roads and/or a pipeline to a well location will be upgraded to a horse proof cattleguard so that the risk of wild horses being trapped in any of the installed cattleguards is reduced.

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

REFERENCES CITED:

- 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.
- CDPHE-WQCC, 2006c. "Regulation No. 93, 2006 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective April 30.
- CDPHE-WQCC, 2006d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective April 30.
- Colorado Oil and Gas Conservation Commission (COGCC). Reclamation Regulations. Accesses online at: http://oil-gas.state.co.us/RR_Asp/1000-ser.pdf. Accessed July 2006.
- Conner, Carl E.
- 2006 Class III Cultural Resource Inventory of Four Proposed Well Locations (Federal BCU#34-8-198, Federal BCU#33-18-198, Federal BCU#23-22-198. and the Federal BCU#42-31-198) and Related Linear routes (1.5 miles) in Rio Blanco County, Colorado for Williams's production, RMT. Grand River Institute, Grand Junction, Colorado.
 - 2006b Class III Cultural Resources inventory for Two Proposed Well Locations (Federal RG 41-18-297D and Federal RG 24-13-398) in Rio Blanco County, Colorado for Williams Production RMT. Grand River Institute, Grand Junction, Colorado.
 - 2006c Class III Cultural Resources Inventory for the Barcus Creek pipeline Project in Rio Blanco County, Colorado for Williams Production RMT. Grand River Institute, Grand Junction, Colorado.
- Norman, V. 1987. Suspended Sediment in the Piceance Basin, in Taylor, J., ed., Oil Shale, Water Resources, and Valuable Minerals of the Piceance Basin, Colorado: The Challenge and Choices of Development. US Geol. Surv. Prof. Paper 1310.
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Tweto, Odgen

1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

Graham, V.K. 2006. Biological survey report, Williams production RMT Co., Natural gas well Fed. 41-18-297. WestWater Engineering, Doc. **ww_Williams_41-18-297**

PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Brett Smithers	Natural Resource Specialist- Wildlife Biologist	Migratory Birds
Brett Smithers	Natural Resource Specialist- Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Hazmat Collateral; Range Technician	Wastes, Hazardous or Solid; Wild Horses
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Brett Smithers	Natural Resource Specialist- Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Ken Holsinger	Natural Resource Specialist	Vegetation
Brett Smithers	Natural Resource Specialist- Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Bob Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Mark Hafkenschiel	Rangeland Management Specialist	Rangeland Management, Invasive, Non-Native Species
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources

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

CO-110-2006-202-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 proposed action with the following mitigation measures.

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. Proposed well locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-198-297D related access routes: 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. Proposed well tie pipeline in T 1 N, R 98 W, Sections 19, 29, 30, and 32: Monitor during initial blading through the location of 5RB 5387 to ensure no subsurface features or artifact present then standard stipulations as above for the well pad locations for the pipeline.

6. Promptly revegetate all disturbed areas with Native Seed mix #3 and #5 as listed below. Interim reclamation areas will be fenced to BLM specifications to prevent livestock /wild horse use. Revegetation will commence immediately after construction and will not be delayed until the following fall. Debris will not be scattered on the pipelines 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.

For locations 23-22-198, 33-18-198, 34-8-198, and their associated roads and pipelines:

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
5	Basin Wildrye (Magnar)	2	Foothill Swale, Sandy Swale, Swale Meadow
	Western wheatgrass (Rosanna)	3	
	Bluebunch wheatgrass (Whitmar)	2	
	Thickspike wheatgrass (Critana)	1	
	Fourwing saltbush (Wytana)	1	

For locations 42-31-198 and 41-18-297 and all associated roads and pipelines:

Seed Mix #	Species (Variety)	Lbs. PLS per Acre	Ecological Sites
3	Western wheatgrass (Rosanna)	2	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)
	Bluebunch wheatgrass (Whitmar)	2	
	Thickspike wheatgrass (Critana)	1	
	Indian ricegrass (Rimrock)	2	
	Fourwing saltbush (Wytana)	1	
	Utah sweetvetch	1	

7. The operator will be required to monitor the project area for a minimum of **5** 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**.

8. Williams would be responsible for implementing mitigation measures that minimize bird injuries or mortalities as a result of contact with reserve pits. The most common measure being used is placing netting or wiring over reserve pits. Williams will notify the BLM of the method that will be used to prevent impacts to birds two weeks prior to the date when completion activities are expected to begin. The BLM-approved method will be applied within 24 hours after completion activities have begun. All lethal and non-lethal events that involve migratory birds will be reported to the Petroleum Engineer Technician immediately.

9. The applicant shall be required to collect and properly dispose of any waste generated by the proposed action.

10. Comply with “Gold Book” fourth edition surface operating standards for all surface disturbing activities (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).

11. 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. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

12. 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. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

13. 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 2006).
- Stockpiled topsoil and spoil piles will be separated and clearly labeled to prevent mixing during reclamation efforts.
- Stockpiled topsoil will be seeded with a BLM approved seed mixture. Topsoil stockpiles that will potentially remain in place for extended periods of time (e.g. multi-well locations) will be covered with biodegradable fabrics such as (but not limited to) jute netting or Curlex and seeded with the appropriated seed mixture.
- 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 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 responsible for achieving a reclamation success rate of sufficient vegetative ground cover from reclaimed plant species within three growing seasons after

the application of seed. The ground cover of reclaimed seed species shall be comparable to that of the nearby undisturbed plant communities at a Potential Natural Community (PNC) state in relation to the seed mix as deemed appropriate by the BLM.

Rehabilitation efforts must be repeated if it is concluded that the success rate is below an expectable level as determined by the BLM.

- A Reclamation Status Report will be submitted to the WRFO biannually for all actions that require disturbance of surface soils on BLM-administered lands as a result of the proposed action. Actions may include, but are not limited to, well pad and road construction, construction of ancillary facilities, or power line and pipeline construction. The Reclamation Status Report will be submitted by 15 May and 15 November of each calendar year, and will include the well number, legal description, project description (e.g., well pad or pipeline), reclamation status (e.g., interim or final), whether the well pad or pipeline has been re-vegetated and/or re-contoured, date seeded, estimate of acres seeded and seeding method (e.g., disk-plowed, drilled, or both). Internal and external review of this plan and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the plan. The Reclamation Status Report will be submitted electronically via email as a Microsoft Excel table to Natural Resource Specialist, Brett Smithers (brett.smithers@blm.gov).

14. 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 than 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).

15. To mitigate water being channelized down the roadway, all activity must stop when soils or road surfaces become saturated to a depth of three inches. Furthermore, mud blading will be prohibited in attempts to reduce further soil displacement and sedimentation/salt loading to surface waters.

16. Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Mesaverde Formation will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to surface water. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment will be required to intercept such contaminants prior to contacting soils. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

17. 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. Mud blading will be prohibited and all activity shall cease when soils or road surfaces become saturated to a depth of three inches (on BLM administered lands) unless otherwise approved by the AO. 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.

18. BLM roads utilized by proposed action will be constructed and maintained according to BLM "Gold Book" 4th edition standards.

19. 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 could 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 would effectively breakdown the woody fuel and scatter 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.

20. 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.

21. 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 chipping and scattering.

22. The operator will not prune trees along access routes.

23. Proposed locations 23-22-198, 33-18-198, 34-8-198, 42-31-198 and 41-18-297 and related access routes: All exposed outcrops of the Uinta Formation shall be inventoried by an approved paleontologist with a report detailing the results of the inventory and any recommended mitigation shall be submitted to the BLM prior to the initiation of construction. Additional mitigation may be required based upon inventory results.

24. 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)

25. The pipelines for locations 23-22-198, 33-18-198, 34-8-198 have been flagged far off (50 feet plus) the existing County road. In order to reduce disturbance of existing soils/ vegetation the pipelines should be relocated so that they utilize as much of the existing roadbed as possible. 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 apply water to access roads to reduce airborne dust and damage to roadside vegetation communities.
27. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
28. The holder shall be responsible for weed control on disturbed areas within the limits of the right-of-way. The holder is responsible for consultation with the authorized officer and/or local authorities for acceptable weed control methods (within limits imposed in the grant stipulations). Any hay and/or straw used for this proposal shall be certified noxious weed free.
29. All disturbed areas for the pipeline, access road and location with the exception of the access road travel surface and the area around well pad production facilities will be reclaimed within the first growing season or prior to the first full growing season following disturbance with Native Seed as described below: Successful revegetation should be achieved within three years.
30. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and Bureau of Land Management Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the authorized officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.
31. The holder shall survey and clearly mark the centerline and/or exterior limits of the right-of-way prior to any surface disturbing activity, as determined by the authorized officer.

32. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of three inches deep, the soil shall be deemed too wet to adequately support construction equipment. The holder shall inform the authorized officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.

33. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State(s) of xx and regulations issued thereunder. Holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.

34. When construction activity in connection with the right-of-way breaks or destroys a natural barrier used for livestock control, the gap, thus opened, shall be fenced to prevent the drift of livestock. The subject natural barrier shall be identified by the authorized officer and fenced by the holder as per instruction of the authorized officer.

35. If "cross country" access is necessary, clearing vegetation or grading a roadbed will be avoided whenever practicable. All construction and vehicular traffic shall be confined to the right-of-way or designated access routes, roads, or trails unless otherwise authorized in writing by the authorized officer. All temporary roads used for construction shall be rehabilitated after construction is completed. Only one road or access route will be permitted to each site requiring access.

36. Prior to any discharge, hydrostatic testing water will be tested and processed, if necessary, to ensure that the water meets local, State or Federal water quality standards. Prior to discharge of hydrostatic testing water from the pipeline, the holder shall design and install a suitable energy dissipater at the outlets, and design and install suitable channel protection structures necessary to ensure that there will be no erosion or scouring of natural channels within the affected watershed as a result of such discharge. The holder will be held responsible for any erosion or scouring resulting from such discharge. Sandbags, rock, or other materials or objects installed shall be removed from the site upon completion of hydrostatic testing.

37. The holder shall inform the authorized officer within 48 hours of any accidents on federal lands that require reporting to the Department of Transportation as required by 49 CFR Part 195.

38. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State(s) of xx and regulations issued thereunder. Holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.

39. Upon completion of the reclamation and seeding, a copy of the seed tags shall be submitted to this office within 30 days after seeding.

40. The holder shall submit engineered as-built drawings to this office within 60 days of completion of the project.

41. 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.

42. All installed cattleguards at fence crossings associated with access roads and/or a pipeline to a well location will be upgraded to a horse proof cattleguard so that the risk of wild horses being trapped in any of the installed cattleguards is reduced.

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

NAME OF PREPARER: Brett Smithers

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL:



Field Manager

DATE SIGNED: 10/11/06

ATTACHMENTS: Map of the proposed action location.

Location of Proposed Action CO-110-2006-202-EA

