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

# ENVIRONMENTAL ASSESSMENT

**NUMBER**: CO-110-2004-036-EA

**CASEFILE/PROJECT NUMBER** (optional): COC-10178 (#10-18, #10-19, #16-18), COC-56873 (#12A-18)

**PROJECT NAME**: APDs for 4 gas wells

**LEGAL DESCRIPTION**: T1S, R103W, SWNE sec.18 (#10-18), SWNW sec.18 (#12A-18), NENE sec.18 (#16-18), SWNE sec.19 (#10-19)

**APPLICANT**: Carbon Energy Corp.

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**:

**Proposed Action**: The applicant proposes to develop four gas wells. This would include construct access roads and well pads, and installation of buried 4" O.D. steel pipelines along access roads for each well (#10-18, #10-19, #12A-18, and #16-18). Total surface disturbance associated with each well would be approximately as follows: #10-18, 2.45 ac. (0' access rd., 1056'pipeline); #10-19, 6.06 ac. (1848' access rd., 1848' pipeline); #12A-18, 1.55 ac. (40' access rd., 200' pipeline); and #16-18, 3.43 ac. (1056' access rd., 1056' pipeline). Total approximate surface disturbance for the proposed action would be 13.49 acres. If a well is a producer, the area not needed for production would be contoured and seeded. If a well is a dry hole, the well would be plugged, surface area contoured and seeded. Location would not be approved for abandonment until adequate vegetation is established.

**No Action Alternative:** No wells would be developed.

**NEED FOR THE ACTION**: To respond to the applicant's proposed action to exercise their Federal mineral lease rights and develop hydrocarbon reserves.

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

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

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

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

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

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

**CRITICAL ELEMENTS**

**AIR QUALITY**

*Affected Environment*: The entire White River RA has been designated as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II.

*Environmental Consequences of the Proposed Action:* The proposed action would result in short term, local impacts to air quality during construction, from fugitive dust being blown into the air.

*Environmental Consequences of the No Action Alternative:* Under the no action alternative, there would be no adverse affects on air quality.

*Mitigation*: The operator will be required to implement dust abatement as needed or as directed by BLM.

**CULTURAL RESOURCES**

*Affected Environment*:

#10-18 well pad: (access appears to be on existing road): The proposed well pad has been inventoried at the Class III (100% pedestrian) level (Lee 2003 {MAC}, compliance dated 11/19/2003) with no new cultural resources located in the well pad inventory area.

#12A-18 well pad (formerly 5-18), access and well tie pipeline: The proposed well pad, access road and well tie pipeline has been inventoried at the Class III (100% pedestrian) level (Lee 2003, Compliance Dated 11/19/2003) with no new cultural resources identified in the area inventoried for the well and access road/well tie pipeline.

#16-18 well pad, access road and well tie pipeline: The proposed well pad access road and well tie pipeline have been inventoried at the Class III (100% pedestrian) level (Lee 2003 {MAC}, compliance dated 11/19/2003) with one isolated find found along the access road/well tie pipeline at the southern end of the well pad inventory area. The isolated find is not eligible for the National Register of Historic Places (NRHP) eligible.

#10-19 well pad, access road and well tie pipeline: The proposed well pad, access road and well tie pipeline has been inventoried at the Class III (100% pedestrian) level (Lee 2003, compliance dated 11/19/2003) with no new cultural resources identified in the area inventoried for the well and access road/well tie pipeline.

*Environmental Consequences of the Proposed Action:*

#10-18 well pad: (access appears to be on existing road): There would be no new impacts to known cultural resources from the construction and operation of this natural gas well.

#12A-18 well pad (formerly 5-18), access and well tie pipeline: There would be no new impacts to known cultural resources from the construction and operation of this natural gas well.

#16-18 well pad, access road and well tie pipeline: One new isolated find will probably be destroyed by construction of the well pad, access road and well tie pipeline. However, since all the pertinent scientific data recoverable with current technology has been recovered during the recording of the isolated find the loss to the regional data base is not significant.

#10-19 well pad, access road and well tie pipeline: There would be no new impacts to known cultural resources from the construction and operation of this natural gas well.

*Environmental Consequences of the No Action Alternative:* There would be no new impacts to cultural resources, including the newly recorded isolated find, under the No Action Alternative.

*Mitigation*:

1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

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

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

2. All new well tie pipelines for the 10-18, 16-18 and 10-19 well pads must be laid less than 50 feet from the centerline of the access road to remain within the inventory area for the project. On the 12A-18 well tie pipeline there is no inventory data for the access road therefore the well tie pipeline must be placed within the existing bar ditch of the existing road: placement outside of that area will require further archaeological inventory

**INVASIVE, NON-NATIVE SPECIES/RECLAMATION:** (This includes vegetation information related to Public Land Health Standard 3.)

*Affected Environment*: The proposed project is within the salt desert shrub and juniper woodland vegetation associations. The salt desert shrub soils are moderately deep and also derived from shale. This soil is saline which makes for difficult reclamation. The juniper woodland soils in this area are shallow and shale derived. Past reclamation efforts have included non-native species, which have performed well in soil stabilization.

The two noxious weeds found in this area are halogeaton and cheatgrass. Both of these species are found throughout the area. Halogeaton has the ability to rapidly colonize disturbed areas, but is easily controlled by successful revegetation. Cheatgrass is found throughout the area, in all of the plant communities. This species can hinder reclamation because of its highly competitive nature. Non-native species have been shown to out-compete cheatgrass. Noxious weeds, such as knapweeds, transported on site by construction equipment and support vehicles would also be of concern.

*Environmental Consequences of the Proposed Action:* Using the proposed non-native seed mix would adequately stabilize soils. These species have not been shown to move off site or to interbreed with adjacent plant species.

With prompt control of any noxious weeds that occur on the project area there would not be any adverse impacts to the adjacent plant communities. Prompt reclamation would prevent cheatgrass and halogeaton from establishing.

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

*Mitigation Measures*: Use Standard Seed Mix #2 for reclamation.

In accordance with Condition of Approval #179 from Appendix B of the White River ROD/RMP, application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

**MIGRATORY BIRDS**

*Affected Environment*: Non-game populations associated with these ranges are widespread and common throughout sagebrush and juniper habitats in this Resource Area (e.g., green-tailed and spotted towhee, vesper and lark sparrows). There are no specialized or narrowly endemic species known to occupy the project area.

*Environmental Consequences of the Proposed Action:* Although this action would represent an incremental and longer term reduction in the extent of pinyon-juniper habitat available for migratory bird breeding functions, implementation of this project would have no measurable influence on the abundance or distribution of breeding migratory birds even at the smallest landscape scale.

*Environmental Consequences of the No Action Alternative:* Incremental reductions of pinyon-juniper woodlands would not occur at this time or place.

*Mitigation*: None.

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

*Affected Environment*: No threatened or endangered animals are present in, or in the vicinity of, the proposed project area.

*Environmental Consequences of the Proposed Action:* None.

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

*Mitigation*: None.

*Finding on the Public Land Health Standard for Threatened & Endangered species*: There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of Threatened, Endangered, or Sensitive animal species. Thus there would be no effect on achieving the land health standard.

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

*Affected Environment*: No threatened or endangered plants are present in, or in the vicinity of, the proposed project area.

*Environmental Consequences of the Proposed Action:* None

*Environmental Consequences of the No Action Alternative:* None

*Mitigation*: None

*Finding on the Public Land Health Standard for Threatened & Endangered species*: There is no reasonable likelihood that the proposed action or no action alternative would have an influence on the condition or function of Threatened, Endangered, or Sensitive plant species. Thus there would be no effect on achieving the land health standard.

**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 this site.

*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.

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

*Mitigation*: The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

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

*Affected Environment*: A review of the Colorado's 1989 Nonpoint Source Assessment Report (plus updates), the 305(b) report, the 303(d) list and the Unified Watershed Assessment was done to see if any water quality concerns have been identified. These wells are located un-named tributaries to Cottonwood Creek, which is tributary to the White River and is considered to be a Category 1, Priority 2, watershed (The Lower White) identified in the Unified Watershed

Assessment report. In addition, the State has classified this reach as a "Use Protected" segment. Its designated beneficial uses are: Warm Aquatic Life 2, Recreation 2, and Agriculture. The antidegredation review requirements in the Antidegredation 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 mg/l, pH = 6.5 - 9.0 and Fecal Coliform = 2000/100ml.

Water quality data is not available for these upper reaches of Cottonwood Creek. These segments of stream are considered to be ephemeral, which means they flow in direct response to winter snow melt and late summer/fall rainstorms. Water quality of precipitation is considered to be of good quality, but can be high is sediment depending on the magnitude and duration of the storm event.

Fragile watersheds that have very high erosion potential (i.e. Cottonwood Creek) are frequently high in salts and can contribute to increased salinity loads to the White River and the Colorado River Basin. Annual runoff is dynamic and dependent on some aspects we control, such as the amount of vegetation retained for watershed protection and vegetation density.

*Environmental Consequences of the Proposed Action:* Depleting this vegetation cover needed to protect watersheds from raindrop impact and runoff could cause long-term erosion and water quality problems for Cottonwood Creek and on downstream. Best management practices are needed to re-establish a protective vegetative cover and to collect sediment during runoff events.

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

*Mitigation*: The applicant will submit, to BLM, a copy of the Stormwater Discharge Plan, which is required by the State identifying how best management practices will be used to reduce stormwater discharge. Apply Conditions of Approval, (BMPs) listed in Appendix B, in the White River RMP to help minimize surface disturbing impacts.

When preparing the site, all suitable topsoil should be stripped from the surface of the location and stockpiled for reclamation. For the interim, if the topsoil is stockpiled on slopes exceeding five percent, construct a berm or trench below the stockpile. Once construction is completed, reclaim as much of the pad that is not needed for maintenance of the well facility.

All sediment control structures or disposal pits will be designed to contain a 100-year, 6-hour storm event. Storage volumes within these structures will have a design life of 25 years.

All activity shall cease when soils or road surfaces become saturated to a depth of three inches unless otherwise approved by the Authorized Officer.

Provide vegetative or artificial stabilization of cut and fill slopes in the design process. Avoid establishment of vegetation where it inhibits drainage from the road surface or where it restricts safety or maintenance.

Eliminate undesirable berms that retard normal surface runoff. Fill material associated with construction of this project shall not be deposited in ephemeral draws adjacent to two of these wells.

*Finding on the Public Land Health Standard for water quality*: Water quality of Cottonwood Creek meets the criteria of the Land Heath Standards set by the state. The proposed action is not expected to change this condition.

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

*Affected Environment*: No wetland or riparian areas occur within the project area.

*Environmental Consequences of the Proposed Action:* None.

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

*Mitigation*: None.

*Finding on the Public Land Health Standard for riparian systems*: No wetland or riparian areas occur within the project area. The proposed action would not affect achievement of the land health standard.

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

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

**NON-CRITICAL ELEMENTS**

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

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

*Affected Environment*: Well pads and associated roads for wells 10-18, #10-19 and #116-18 are in soils mapping unit #74, Rentsac-Moyerson-Rock outcrop complex, on slopes 5 to 65 percent. This unit is 40 percent Rentsac channery loam that has slopes of 5 to 50 percent, 25 percent Moyerson stony clay loam that has slopes of 15 to 65 percent, and 20 percent Rock outcrop that has slopes of 5 to 65 percent. The Moyerson soil is mainly in the lower lying areas of the unit. The components of this unit are so intricately intermingled that it was not practical to map them separately at the scale used. The Rentsac soil is shallow and well drained. It formed in residuum derived dominantly from sandstone. Typically, 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. Sandstone is at a depth of 16 inches. Depth to sandstone ranges from 10 to 20 inches. In some areas the surface layer is quite variable in texture. 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 very high. The Moyerson soil is shallow and well drained. It formed in residuum derived dominantly from shale. Typically, the surface layer is light gray stony clay loam about 2 inches thick. The next layer is gray clay loam about 8 inches thick. The underlying material is gray clay 7 inches thick. Shale is at a depth of 17 inches. Depth to shale ranges from 10 to 20 inches. In some areas the surface layer is silty clay loam, silty clay, light clay, or bouldery clay loam. Permeability of the Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is medium to rapid, and the hazard of water erosion is very high. Rock outcrop consists of ridge caps, ridge points, and long vertical bluffs 3 to 25 feet thick and 25 to 1,500 feet long.

Wells #10-18 and #10-19 are mapped as Controlled Surface Use (CSU) -1, which indicates problems such as fragile soil, high salt concentrations, excessive erosion, or steep slopes. The CSU-1 stipulation description states, surface-disturbing activities will be allowed only after the operator submits an engineered construction/ reclamation plan and approved by the Area Manager. The plan would address how soil productivity would be restored and how surface runoff would be treated to avoid accelerated erosion and mass wasting. Exceptions would be granted if after environmental analysis the proposed action did not fit the criteria identifying fragile soils on slopes greater than 35% or the disturbance would not result in any long-term decrease in site productivity or increased erosion.

Well # 12A-18 is in soil mapping unit #53, Moyerson stony clay loam, on slopes 15 to 65 percent. Typically, 5 to 20 percent of the surface is covered with stones, flagstones, and boulders. The surface layer is light gray stony clay loam 2 inches thick. The next layer is light gray clay loam 8 inches thick. The underlying material is light gray clay about 7 inches thick. Fractured shale is at a depth of 17 inches. Depth to shale ranges from 10 to 20 inches. The soil is calcareous throughout. Permeability of this Moyerson soil is slow. Available water capacity is low. Effective rooting depth is 10 to 20 inches. Runoff is rapid, and the hazard of water erosion is very high.

Both soil types are classified in capability subclass VIIe, non-irrigated. The Rentsac soil is in pinyon-juniper woodland site, and the Moyerson soil is in Clayey Slopes range site.

*Environmental Consequences of the No Action Alternative:* General impacts associated with oil and gas and road development include but are not limited to, loss of topsoil, soil compaction and possible increase in sediment loads to the White River. The primary surface-disturbing impact would be a potential increase in sediment transport from runoff events after the protective vegetative cover has been removed.

Because the road and well pads are in an area that has been identified as CSU-1, it is important to recognize the increased erosion potential and designing best management practices, which will minimize this erosion. The wells themselves are not on slopes greater than 35%, but

the road to well 10-19 traverses slopes that are greater than 35% and based on the way they are designed will make a difference to erosion potential. Submitting a copy of the Stormwater Discharge Plan, which is required by the State (Stormwater Discharge Permit) identifying how best management practices will be used to reduce stormwater discharge and erosion off of the roads, can be submitted to BLM in lieu of the required construction/reclamation plan. Best management practices used to slow runoff, trap sediment and prepare reclaimed areas for seeding would also help reduce soil loss. With an explanation of how these practices will be used and implemented, impacts are expected to be short in duration, during the construction phase and for a short time after construction until successful reclamation is achieved.

*Environmental Consequences of the No Action Alternative:* Impacts are not anticipated from not permitting the proposed action.

*Mitigation*: The applicant must submit, to BLM, a copy of the Stormwater Discharge Plan, which is required by the State identifying how best management practices will be used to reduce stormwater discharge. Use Standard Seed mix # 2 for the range sites identified. In addition, the following conditions of approval from Appendix B, White River ROD must be applied:

96. Water bars or dikes shall be constructed on all of the rights-of-way, and across the full width of the disturbed area, as directed by the authorized officer.

97. Slopes within the disturbed area shall be stabilized by non-vegetative practices designed to hold the soil in place and minimize erosion. Vegetative cover shall be reestablished to increase infiltration and provide additional protection from erosion.

98. When erosion is anticipated, sediment barriers shall be constructed to slow runoff, allow deposition of sediment, and prevent it from leaving the site. In addition, straining or filtration mechanisms may also contribute to sediment removal from runoff

*Finding on the Public Land Health Standard for upland soils*: Site specifically, these soils would probably not meet the Land Health Standards because of the presence of some indicators (i.e. rill erosion, and actively-eroding gullies), on a temporary basis. This condition would exist until successful reclamation has occurred. Based on the overall landscape, the Land Health Standards would not be affected.

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

*Affected Environment*: The project area is primarily salt desert shrub with junipers growing on ridgetops. These salt desert shrub vegetation associations is on sites with relatively clayey soils, high salt content and relatively low precipitation 10-12 inches. Junipers are found on shallow, rocky soils primarily ridge tops. Wells #10-18 and #10-19 are in the junipers. Wells #12A-18 and #16-18 are in the salt desert shrub vegetation type.

*Environmental Consequences of the Proposed Action:* Following reclamation these vegetation sites have a relatively good success at establishment of perennial vegetation cover. The salt desert shrub type should be adequately reclaimed in 3-5 years with the native community dominating within 20 years. The juniper woodland would establish cover suitable for soil retention within 3-5 years and initial establishment of junipers in 15-20 years. Development of a late seral community would take 150-200 years.

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

*Mitigation*: None

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* The above described plant communities meet the standards for plant health. The proposed action would have no effect on this condition.

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

*Affected Environment*: There is no aquatic wildlife occurring within the project area.

*Environmental Consequences of the Proposed Action:* None.

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

*Mitigation*: None.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Terrestrial): There is no aquatic wildlife occurring within the project area. The proposed action would not affect achievement of the land health standard.

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

*Affected Environment*:

Well #10-18 is located on a level location characterized by sparse sagebrush and greasewood at an elevation of 5,793 feet. No raptor nest sites exist (no trees) and the location occurs within normal winter range for mule deer.

Well #12A-18 lies on a knob consisting of some sage brush and a few young pinyon-juniper trees. The elevation is 5,988 feet and no evidence of recent use by nesting raptors was observed during a field visit on 15 October 2003. Nesting potential for this site is low due to a lack of adequate nesting substrates (trees to young to support raptor nests). This well falls within normal winter range for mule deer.

Well #16-18 is located on a rocky ridge consisting of sparse, young pinyon-juniper trees. Elevation for this site is 5,835 feet and it occurs in normal winter range for mule deer.

Well #10-19 is located on a saddle and consists of dead greasewood with some small pinyon-juniper trees at an elevation of 6131 feet. The roughly 0.3 miles of new road traverses a sagebrush park of varying quality. Small, sparse sagebrush exists at first, then becoming more mature sagebrush as the road proceeds towards the pad. No raptor nests were observed in pinyon-juniper woodlands adjacent to the road and pad.

*Environmental Consequences of the Proposed Action:* The construction of this project would result in a long-term increase of road traffic associated with commercial oil/gas related activities. The location of oil/gas facilities in areas previously undisturbed by commercial oil/gas activities results in incremental reductions of normal winter range habitat for big game.

*Environmental Consequences of the No Action Alternative:* Failure to construct this well would reduce short-term construction activity levels in this area as well as longer term activity associated with increased road traffic. However, avoiding the disturbance associated with this well package would not be considered advantageous to wildlife resources since new locations, potentially involving greater surface disturbance and more involved access, would likely be proposed to offset the loss.

*Mitigation*: A locked gate shall be placed at the point of new road construction for Well #10-19, or as close to this point as practical, to preclude motorized vehicle use to avoid disturbance to mule deer.

*Finding on the Public Land Health Standard for plant and animal communities* (partial, see also Vegetation and Wildlife, Aquatic): This project would not jeopardize the viability of any animal population. It would have no significant consequence on terrestrial habitat condition, utility, or function, nor have any discernible affect on animal abundance or distribution at any landscape scale. Thus, potential for meeting the land health standard would not be affected.

**OTHER NON-CRITICAL ELEMENTS:** For the following elements, those brought forward for analysis will be formatted as shown above.

| Non-Critical Element | NA or Not Present | Applicable or Present, No Impact | Applicable & Present and Brought Forward for Analysis |
|---|---|---|---|
| Access and Transportation | | | X |
| Cadastral Survey | X | | |
| Fire Management | | | X |
| Forest Management | | | X |
| Geology and Minerals | | | X |
| Hydrology/Water Rights | X | | X |
| Law Enforcement | | X | |
| Paleontology | | | X |

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

## ACCESS AND TRANSPORTATION

*Affected Environment*: Motorized travel is restricted to existing roads and trails from October 1 to April 30 in the vicinity of the proposed action. Off-road travel is allowed outside this seasonal restriction period. There is a maze of roads throughout this area as a result of recent oil and gas development.

*Environmental Consequences of the Proposed Action:* The construction of the proposed access road would constitute an incremental increase in the maze of oil and gas access roads recently developed in this area. This would likely encourage more recreational use of the area.

*Environmental Consequences of the No Action Alternative:* There would be no incremental increase in the road density in this area.

*Mitigation*: See Wildlife Terrestrial.

## FIRE MANAGEMENT

*Affected Environment*: Well access roads and pads for Wells #10-18 and #10-19 are located in juniper woodland. Wells #12A-18 and #16-18 and associated road construction/improvement are not in a vegetative community which could potentially create an increased fire hazard.

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 potential 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 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, operator 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.

*Mitigation*: The operator has two options for treatment of slash from this project. 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. The mulch is evenly scattered across the surface and the tires or tracks distribute the weight of the equipment. This would effectively breakdown the woody fuel and would scatter the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. 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.

**FOREST MANAGEMENT:**

*Affected Environment*: The access roads and pads for Wells 10-18 and 10-19 are located in junipers woodlands. These stand are relatively old but because of austere growing conditions are of short stature. These trees can be used for firewood and fence posts, but because of the difficulty in harvesting these trees, little use is made. The other wells are not within woodlands.

*Environmental Consequences of the Proposed Action:* Junipers would be removed during construction of the well pad and access road. Following reclamation, junipers would reestablish on the site over a period of thirty years and develop a climax stand in approximately 200 years.

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

*Mitigation Measures*: See Fire Management Section.

**GEOLOGY AND MINERALS**

*Affected Environment*: The surface geologic formation of the well locations is Green River and Carbon Energy's targeted zone is in the Mancos. During drilling potential water, coal, oil and gas zones will be encountered from surface to the targeted zone.

*Environmental Consequences of the Proposed Action:* The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. The coal zones located in the Mesaverde will also be isolated during this procedure. Development of these wells will deplete the hydrocarbon resources in the targeted formation.

*Environmental Consequences of the No Action Alternative:* None

*Mitigation*: None

**PALEONTOLOGY**

*Affected Environment*: All of the proposed well pads and associated access road/well tie pipeline routes appear to be located in the lower Green River formation, specifically the Garden Gulch/Douglas Pass members (Tweto 1979). The BLM has classified the Douglas Pass member of the Green River Formation as a Category II formation meaning its fossil bearing potential in this area is not well understood.

*Environmental Consequences of the Proposed Action:* Any excavation into the underlying bedrock formation for the leveling of the well pad, construction or upgrade of any access road segments or excavation of the reserve/blooie pits has the potential to disturb/destroy 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*: All excavations into the underlying bedrock to construct or upgrade access roads, level well pads or excavate the reserve/blooie pits shall be monitored by an approved paleontologist at all times. If paleontological materials (fossils) are uncovered during project activities, the operator is to immediately stop activities that might further disturb such materials, and contact the authorized officer (AO). The operator and the authorized officer will consult and determine the best option for avoiding or mitigating paleontological site damage.

**RANGE MANAGEMENT:**

*Affected Environment*: The proposed project is within the Banta Flats allotment. This allotment is grazed by sheep during the winter and spring.

*Environmental Consequences of the Proposed Action:* The proposed project would remove important forage for livestock during the life of the project. Halogeaton was discussed in the noxious weed section. This weed is highly toxic to sheep. If disturbed soils are reclaimed promptly there would not be a problem with this weed. Using sheep wire on all pits would prevent access to livestock.

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

*Mitigation Measures*: The operator will install sheep wire fencing to prevent livestock from accessing all constructed pits. Also, in accordance with Condition of Approval #181 from Appendix B of the White River ROD/RMP, reclamation should be implemented concurrent with construction and site operations to the fullest extent possible. Final reclamation actions shall be initiated within six months of the termination of operations unless otherwise approved in writing by the Authorized officer.

## 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.

*Environmental Consequences of the Proposed Action:* The public will lose approximately 13 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 and will most likely result in complaints from hunters that have historically used this area.

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

*Mitigation*: None.

## VISUAL RESOURCES

*Affected Environment*: The proposed action is located within a VRM class II area. The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

*Environmental Consequences of the Proposed Action:* The well locations of the proposed action are located on an extensive bench between Cottonwood Draw and Gilsonite Hills. A casual observer traveling on the road in Cottonwood Draw might possibly be able to view one location for a brief instance if looking hard right when passing by a canyon opening. The road on Gilsonite Ridge would allow a casual observer to view the proposed action for a few seconds as the road route traverses a side hill. There are other existing well pads in the area and the proposed action would not attract the attention of the casual observer nor dominate the view.

By utilizing low profile production equipment and painting all production equipment a color that matches the surrounding vegetation, the level of change to the characteristic landscape should be low, and the standards of the VRM II classification would be retained.

*Environmental Consequences of the No Action Alternative:* There would be no additional environmental consequences from the no action alternative.

*Mitigation*: Use low profile production equipment and paint all facilities Juniper Green.

**CUMULATIVE IMPACTS SUMMARY:** Cumulative impacts from oil and gas development were analyzed in the White River Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) completed in June 1996. Current development, including the proposed action, has not exceeded the cumulative impacts from the foreseeable development analyzed in the PRMP/FEIS. See the Wildlife Terrestrial and Visual Resource sections for discussion of cumulative impacts specifically associated with the proposed action for this environmental assessment.

**PERSONS / AGENCIES CONSULTED:** BLM resource specialists

## INTERDISCIPLINARY REVIEW:

| Name | Title | Area of Responsibility |
|---|---|---|
| Caroline Hollowed | Hydrologist | Air Quality |
| Tamara Meagley | NRS | Areas of Critical Environmental Concern |
| Tamara Meagley | NRS | Threatened and Endangered Plant Species |
| Michael Selle | Archaeologist | Cultural Resources<br>Paleontological Resources |
| Robert Fowler | MOTU | Invasive, Non-Native Species |
| Glenn Klingler | Wildlife Biologist | Migratory Birds |
| Glenn Klingler | Wildlife Biologist | Threatened, Endangered and Sensitive Animal Species, Wildlife |
| Marty O'Mara | HazMat Collateral | Wastes, Hazardous or Solid |
| Caroline Hollowed | Hydrologist | Water Quality, Surface and Ground<br>Hydrology and Water Rights |
| Glenn Klingler | Wildlife Biologist | Wetlands and Riparian Zones |
| Chris Ham | Recreation Planner | Wilderness |
| Caroline Hollowed | Hydrologist | Soils |
| Robert Fowler | Rangeland Management Specialist | Vegetation |
| Glenn Klingler | Wildlife Biologist | Wildlife Terrestrial and Aquatic |
| Scott Pavey | Planning and Environmental Coordinator | Access and Transportation |
| Ken Holsinger | Fire Ecologist | Fire Management |
| Robert Fowler | Forester | Forest Management |
| Paul Daggett | Mining Engineer | Geology and Minerals |
| Robert Fowler | Rangeland Management Specialist | Rangeland Management |
| Penny Brown | Realty Specialist | Realty Authorizations |
| Chris Ham | Recreation Planner | Recreation |
| Keith Whitaker | Natural Resource Specialist | Visual Resources |
| Valerie Dobrich | NRS | Wild Horses |

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

# CO-110-2004-036-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 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 development of wells (#10-18, #10-19, #12A-18, and #16-18, as described in the proposed action with mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

**MITIGATION MEASURES**:

1. The operator 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. All new well tie pipelines for the 10-18, 16-18 and 10-19 well pads must be laid less than 50 feet from the centerline of the access road to remain within the inventory area for the project. On the 12A-18 well tie pipeline there is no inventory data for the access road therefore the well tie pipeline must be placed within the existing bar ditch of the existing road: placement outside of that area will require further archaeological inventory

3. Use Standard Seed Mix #2 for reclamation.

4. In accordance with Condition of Approval #179 from Appendix B of the White River ROD/RMP, application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

5. The operator shall be required to collect and properly dispose of any solid wastes generated by this project.

6. The operator has two options for treatment of slash from this project. 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. The mulch is evenly scattered across the surface and the tires or tracks distribute the weight of the equipment. This would effectively breakdown the woody fuel and would scatter the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. 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.

7. In accordance with Condition of Approval #179 from Appendix B of the White River ROD/RMP, application of herbicides must be under field supervision of an EPA-certified pesticide applicator. Herbicides must be registered by the EPA and application proposals must be approved by the BLM.

8. A locked gate shall be placed at the point of new road construction for Well #10-19, or as close to this point as practical, to preclude motorized vehicle use to avoid disturbance to mule deer.

9. All excavations into the underlying bedrock to construct or upgrade access roads, level well pads or excavate the reserve/blooie pits shall be monitored by an approved paleontologist at all times. If paleontological materials (fossils) are uncovered during project activities, the operator is to immediately stop activities that might further disturb such materials, and contact the authorized officer (AO). The operator and the authorized officer will consult and determine the best option for avoiding or mitigating paleontological site damage.

10. The operator will install sheep wire fencing to prevent livestock from accessing all constructed pits. Also, in accordance with Condition of Approval #181 from Appendix B of the

11. White River ROD/RMP, reclamation should be implemented concurrent with construction and site operations to the fullest extent possible. Final reclamation actions shall be initiated within six months of the termination of operations unless otherwise approved in writing by the Authorized officer.

12. Use low profile production equipment and paint all facilities Juniper Green.

13. The operator will be required to implement dust abatement as needed or as directed by BLM.

14. The applicant will submit, to BLM, a copy of the Stormwater Discharge Plan, which is required by the State identifying how best management practices will be used to reduce stormwater discharge. Apply Conditions of Approval, (BMPs) listed in Appendix B, in the White River RMP to help minimize surface disturbing impacts.

15. When preparing the site, all suitable topsoil should be stripped from the surface of the location and stockpiled for reclamation. For the interim, if the topsoil is stockpiled on slopes exceeding five percent, construct a berm or trench below the stockpile. Once construction is completed, reclaim as much of the pad that is not needed for maintenance of the well facility.

16. All sediment control structures or disposal pits will be designed to contain a 100-year, 6-hour storm event. Storage volumes within these structures will have a design life of 25 years.

17. All activity shall cease when soils or road surfaces become saturated to a depth of three inches unless otherwise approved by the Authorized Officer.

18. Provide vegetative or artificial stabilization of cut and fill slopes in the design process. Avoid establishment of vegetation where it inhibits drainage from the road surface or where it restricts safety or maintenance.

19. Eliminate undesirable berms that retard normal surface runoff. Fill material associated with construction of this project shall not be deposited in ephemeral draws adjacent to two of these wells.

20.The applicant must submit, to BLM, a copy of the Stormwater Discharge Plan, which is required by the State identifying how best management practices will be used to reduce stormwater discharge.

21. Water bars or dikes shall be constructed on all of the rights-of-way, and across the full width of the disturbed area, as directed by the authorized officer.

22. Slopes within the disturbed area shall be stabilized by non-vegetative practices designed to hold the soil in place and minimize erosion. Vegetative cover shall be reestablished to increase infiltration and provide additional protection from erosion.

23. When erosion is anticipated, sediment barriers shall be constructed to slow runoff, allow deposition of sediment, and prevent it from leaving the site. In addition, straining or filtration mechanisms may also contribute to sediment removal from runoff

**NAME OF PREPARER**: Keith W Whitaker

**NAME OF ENVIRONMENTAL COORDINATOR**: Scott Pruitt

**SIGNATURE OF AUTHORIZED OFFICIAL**: Kent E. Walter
Field Manager

**DATE SIGNED**: 02/27/04

**ATTACHMENTS**: Map of the Location of the Proposed Action



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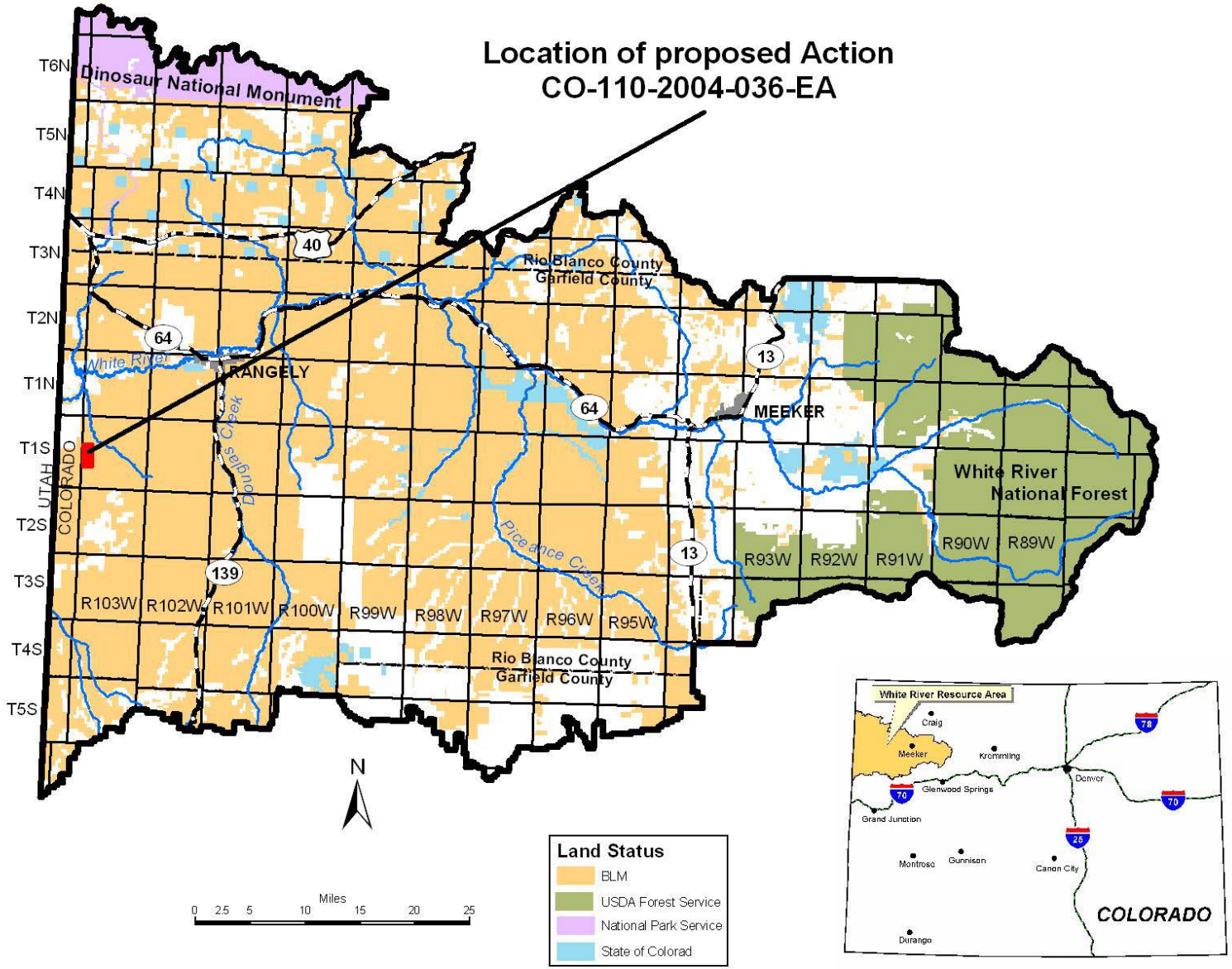
Location of proposed Action
CO-110-2004-036-EA
Dinosaur National Monument
T6N
T5N
T4N
T3N
T2N
T1N
T1S
T2S
T3S
T4S
T5S
UTAH
COLORADO
40
64
13
139
RANGELY
MEEKER
White River
Douglas Creek
Piceance Creek
Rio Blanco County
Garfield County
White River
National Forest
R103W
R102W
R101W
R100W
R99W
R98W
R97W
R96W
R95W
R93W
R92W
R91W
R90W
R89W
N
Miles
0 2.5 5 10 15 20 25
Land Status
BLM
USDA Forest Service
National Park Service
State of Colorad
White River Resource Area
Craig
Meeker
Kremmling
Glenwood Springs
Grand Junction
Denver
Montrose
Gunnison
Canon City
Durango
78
70
25
COLORADO