U.S. Department of the Interior
Bureau of Land Management
Glenwood Springs Energy Office
2425 South Grand Avenue, Suite 101
Glenwood Springs, Colorado 81601

ENVIRONMENTAL ASSESSMENT

NUMBER: CO140-2006-132 EA

CASEFILE NUMBER: Federal Lease COC 05173 (1952)

PROJECT NAME: Application for Permit to Drill into Federal minerals from a new pad located on private surface.

LOCATION: Hoaglund PA 331-2 Pad, NE¼, Section 2, Township 7 South, Range 95 West, Sixth Principal Meridian.

LEGAL DESCRIPTIONS:

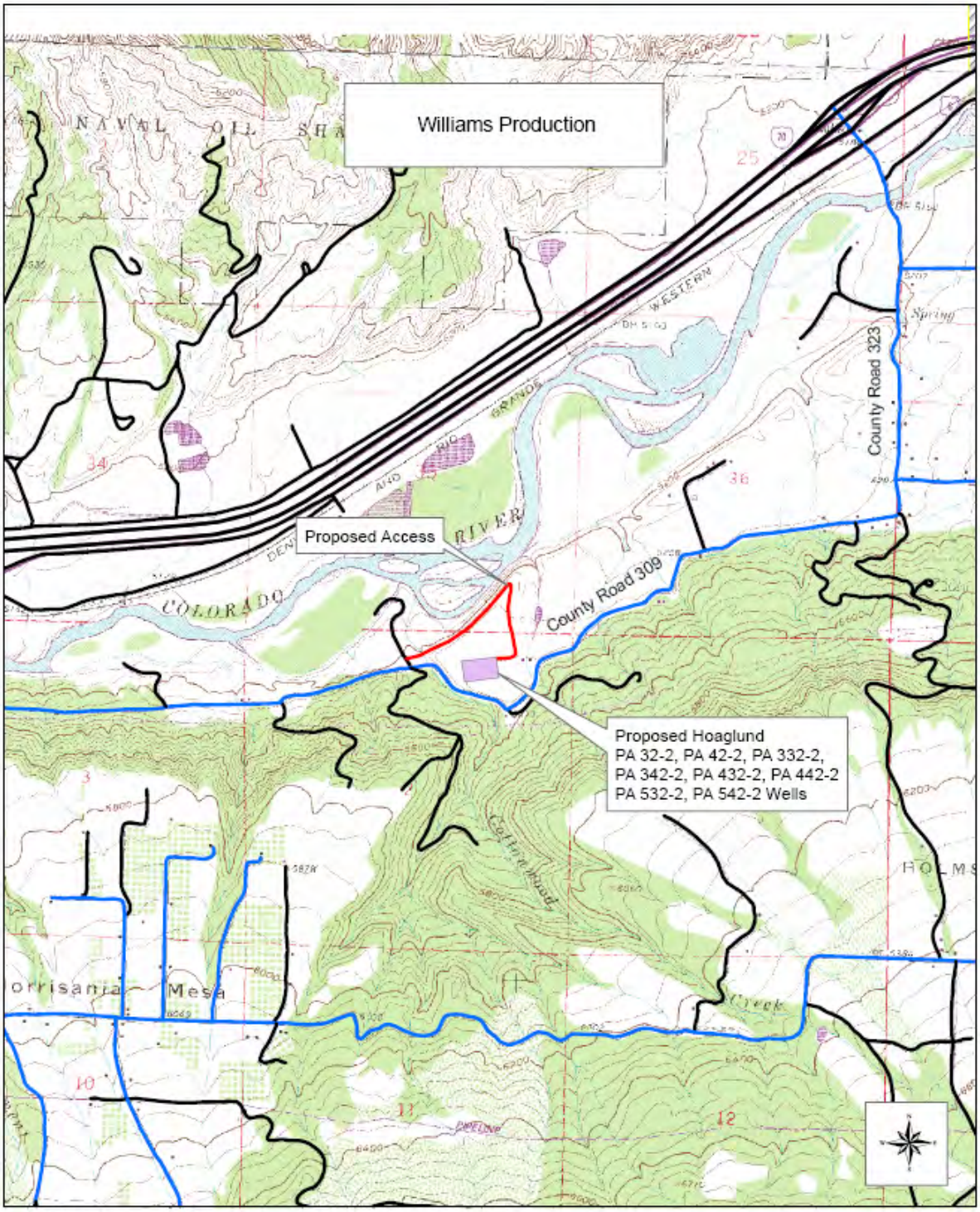
Table 1. Surface and Bottomhole Locations of Proposed Federal Wells		
Proposed Wells	***Surface Locations (Sec. 2, T7 S, R95W)***	***Bottomhole Locations (Sec.2, T7S, R95W)***
PA 32-2	502 feet FNL x 1531 feet FEL, NWNE	1474 feet FNL x 1826 feet FEL, SWNE
PA 332-2	500 feet FNL x 1532 feet FEL, NWNE	1780 feet FNL x 1817 feet FEL, SWNE
PA 432-2	497 feet FNL x 1509 feet FEL, NWNE	2083 feet FNL x 1853 feet FEL, SWNE
PA 532-2	495 feet FNL x 1502 feet FEL, NWNE	2405 feet FNL x 1802 feet FEL, SWNE
PA 42-2	489 feet FNL x 1473 feet FEL, NWNE	1511 feet FNL x 483 feet FEL, SENE
PA 342-2	482 feet FNL x 1490 feet FEL, NWNE	1817 feet FNL x 474 feet FEL, SENE
PA 442-2	492 feet FNL x 1487 feet FEL, NWNE	2055 feet FNL x 456 feet FEL, SENE
PA 542-2	494 feet FNL x 1494 feet FEL, NWNE	2437 feet FNL x 482 feet FEL, SENE

APPLICANT: Williams Production RMT Company

DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVE

Proposed Action: Williams Production RMT Company ("Williams") proposes to drill a total of eight Federal wells from one proposed pad located on private surface (Figure 1). These wells would be drilled using directional drilling equipment into the above described Federal lease. Eight fee (private) wells would also be drilled from this pad.

The well pad location is an irrigated agricultural hayfield dominated by alfalfa and smooth brome. The proposed surface disturbance for pad construction would be approximately 4.5 acres, with 0.5 acres remaining after interim reclamation. An existing road of approximately 0.7 miles would be used for access. The production equipment would be located along the access road to the east of the pad. Gas and



T7S, R95W, Sec. 2 NENE

Hoaglund Surface Drilling into Federal Minerals

0 0.25 0.5 1 Miles

water pipelines would follow the access road and produced water would be piped to storage tanks located adjacent to the road at the Hoaglund PA 21-2 well pad location.

The proposed action includes drilling and completion operations, installation of production facilities (pipeline, separator/dehydrator, water tank, etc.), production of natural gas, and intermediate and final reclamation measures.

The Williams Master Application for Permit to Drill (APD) would be applicable to all proposed Federal wells. The Master APD includes a drilling program and a multi-point surface use and operations plan that describe further details of well pad construction and interim reclamation.

The proposed action would be implemented consistent with oil and gas lease COC 05173, Federal regulations (43 CFR 3100), and the operational measures included in the APDs or attached to the APDs as Conditions of Approval (COAs). The COAs to be applied to this project are presented in Appendix A.

No Action Alternative: The proposed action involves Federal subsurface minerals that are encumbered with Federal oil and gas leases, which grant the lessee a right to explore and develop the lease. Although BLM cannot deny the right to drill and develop the leasehold, individual APDs can be denied to prevent unnecessary and undue degradation. The no action alternative constitutes denial of the APDs associated with the proposed action.

In accordance with Council on Environmental Quality (CEQ) regulations, the no action alternative is evaluated to provide a base from which to compare impacts associated with the proposed action. For the purpose of the following comparative analysis, the no action alternative would consist of the drilling and development of 8 fee wells from the new pad, but the development of the 8 Federal wells would not occur.

PURPOSE AND NEED FOR THE ACTION: The purpose of the action is to develop oil and gas resources on Federal Lease COC 05173 consistent with existing Federal lease rights. The action is needed to increase the development of oil and gas resources for commercial marketing to the public.

SUMMARY OF LEASE STIPULATIONS: Federal Lease COC 05173, issued in 1952, carries no special stipulations.

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: Glenwood Springs Resource Management Plan (BLM 1984).

Date Approved: Amended in November 1991 – Oil and Gas Leasing and Development - Final Supplemental Environmental Impact Statement; amended in March 1999 – Oil and Gas Leasing & Development Final Supplemental Environmental Impact Statement.

Decision Number/Page: Record of Decision, Glenwood Springs Resource Management Plan Amendment, November 1991, page 3.

Decision Language: "697,720 acres of BLM-administrated mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations." This decision was carried forward unchanged in the 1999 RMP amendment (BLM 1999a).

Discussion: The proposed action is in conformance with the 1991 and 1999 Oil and Gas RMP amendments because the Federal mineral estate proposed for development is open for oil and gas leasing and development.

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado BLM approved the Standards for Public Land Health. The five 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. The environmental analysis must address whether the proposed action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions relative to these resources. These analyses are presented in the applicable resource narratives below.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

A variety of laws, regulations, and policy directives mandate the evaluation of the effects of a proposed action and alternative(s) on certain critical environmental elements. Not all of the critical elements that require inclusion in this EA are present, or if they are present, may not be affected by the proposed action and alternative (Table 2). Only mandatory critical elements that are present and affected are described in the following narrative.

Table 2. Critical Elements of the Human Environment

Critical Element	*Present*		*Affected*		*Critical Element*	*Present*		*Affected*	
	Yes	No	Yes	No		Yes	No	Yes	No
Air Quality	X		X		Prime or Unique Farmlands	X		X	
ACECs		X		X	Special Status Species*	X		X	
Cultural Resources	X			X	Wastes, Hazardous or Solid	X		X	
Environmental Justice	X			X	Water Quality, Surface and Ground*	X		X	
Floodplains		X		X	Wetlands and Riparian Zones*		X		X
Invasive Non-native Species	X		X		Wild and Scenic Rivers		X		X
Migratory Birds	X		X		Wilderness and WSAs		X		X
Native American Religious Concerns		X		X					

* Public Land Health Standard

In addition to the mandatory critical elements, there are additional resources that would be impacted by the proposed action and alternative. These are presented under **Other Affected Resources**.

CRITICAL ELEMENTS

The following discussion presents critical elements of the human environment that are present and affected by the proposed action and/or no action alternative.

Air Quality

Affected Environment: The proposed action area (Garfield County) has been described as an attainment area under CAAQS and NAAQS (Colorado Ambient Air Quality Standards and National Ambient Air Quality Standards). An attainment area is an area where ambient air pollution amounts are determined to be below NAAQS standards.

Proposed Action:

Environmental Consequences: The Roan Plateau RMPA and EIS describes potential effects from oil and gas development (BLM 2006:4-26 to 4-37). Analysis was completed with regard to greenhouse gas emissions, a near-field and far-field analysis for carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide, hazardous air pollutants including: benzene, ethylbenzene, formaldehyde, hydrogen sulfide, toluene, and xylenes. Sulfur and nitrogen deposition analysis, acid neutralizing capacity, and visibility screening-level analysis were also completed in the Roan Plateau RMPA and EIS. Findings indicate that no adverse long-term effects would result under that plan. Since the proposed action is within the scope of the reasonable foreseeable development (RFD) scenario analyzed in that document, it is anticipated that the proposed action would be unlikely to have adverse effects on air quality.

Activities described in the proposed action would result in localized short-term increases in vehicle and equipment emissions. Concentrations of emissions would be below applicable ambient air quality standards as analyzed in the Roan Plateau RMPA & EIS. However, it is anticipated that construction and production activities would likely produce high levels of dust in dry conditions without dust abatement. To mitigate dust generated by these activities, the operator would be required to implement dust abatement strategies as needed by watering the access road and construction areas and/or by applying a surfactant approved by the Authorized Officer (Appendix A, Number 2).

No Action Alternative:

Environmental Consequences: Impacts from the no action alternative would be similar to those from the proposed action.

Cultural Resources

Affected Environment: Two Class III Cultural Resource inventories (GSFO #1106-16 and 1107-8) were conducted within the project area containing the proposed well pad location and existing access road. One historic property (a historic ditch segment) was identified as eligible for listing on the National Register of Historic Places. The access road alignment has been identified as not crossing the historic ditch, and consequently, a determination of "**No Historic Properties Affected**" was made in accordance with the National Historic Preservation Act (16 U.S.C. 470f, as amended), BLM/SHPO National Programmatic Agreement (1997), and the Colorado Protocol (1998).

Proposed Action:

Environmental Consequences: Indirect long-term cumulative impacts from increased access and personnel could result in damage to both known and undiscovered cultural resources in the vicinity of the location. These impacts could range from unintentional physical damage to illegal collection or vandalism.

Although no "Adverse Effect" is currently anticipated to the historic ditch segment within the project area, if the access road alignment changes to include a ditch crossing, any potential "Adverse Effect" would be mitigated by measures previously concurred with by the SHPO (8/14/06) for an earlier similar project (GSFO# 14506-4) (Appendix A, Number 3).

A standard Education/Discovery Condition of Approval (COA) for cultural resource protection would be attached to the APDs (Appendix A, Number 4). The importance of this COA should be stressed to Williams and its contractors, including informing them of their responsibilities to protect and report any cultural resources encountered on public land during drilling and development operations.

No Action Alternative:

Environmental Consequences: The no action alternative would not include the Education/Discovery COA designed to protect cultural resources. The lack of this mitigating measure could lead to illegal collection and excavation or vandalism.

If the road alignment changes to include a crossing over the historic ditch segment, this National Register-eligible resource could be impacted.

Prime or Unique Farmlands

Affected Environment: The pad and part of the access road lie within an irrigated agricultural hayfield dominated by alfalfa and smooth brome located on private property. This area, located on Potts Loam, has been mapped by the Natural Resources Conservation Service (NRCS) as "prime farmland if irrigated."

The Farmland Protection Policy Act (FPPA) has as its stated purpose the intent "to minimize the impact of Federal programs on the unnecessary and irreversible conversion of farmland to non-agricultural uses." However, the FPPA does not authorize the Federal government to regulate the use of private land or affect the property right of others. Additionally, the FPPA specifically does not apply to Federal permitting or licensing. Therefore, a decision by the surface landowner of the irrigated hayfield to allow the use of this area for a well pad and a portion of the access road is not affected by any provision of the FPPA, even where a Federal action (e.g., approval of an APD) is involved.

Proposed Action:

Environmental Consequences: The well pad and access road to be constructed for eight fee wells and eight Federal wells would disturb approximately 4.5 acres of mapped prime farmland over the next 2 years. Interim reclamation would restore 4.0 acres back into irrigated hayfield, leaving approximately 0.5 acre out of farmland production for the life of the wells. However, the presence of eight Federal wells does not increase the amount of surface disturbance beyond the amount needed to drill and complete the eight private wells. Therefore, the proposed action (e.g., permitting of eight Federal wells at this location) would not directly or indirectly affect the mapped prime farmlands.

No Action Alternative:

Environmental Consequences: The impacts of the no action alternative would be the same as the proposed action.

Invasive, Non-Native Species

Affected Environment: The pad and road lie within an agricultural hayfield dominated by alfalfa and smooth brome. No noxious weeds are known to occur in the area, although invasive agricultural weeds such as bindweed are present. Cheatgrass is abundant in the project vicinity.

Proposed Action:

Environmental Consequences: Surface-disturbing activities provide an opportunity for the invasion and establishment of noxious and invasive species, particularly when these species are already present in the surrounding area. Because no noxious weeds are present in the vicinity of the pad or road, the risk for noxious weed invasion following construction is moderate. However, invasive weeds such as bindweed and cheatgrass are likely to increase following construction. Mitigation measures intended to limit the spread of these species are presented in Appendix A (Numbers 5 and 6).

No Action Alternative:

Environmental Consequences: If mitigation measures are not implemented, bindweed, cheatgrass, and other invasive, non-native species are likely to spread into disturbed areas.

Migratory Birds

Affected Environment: The proposed well pad would be placed within a private agricultural field just north of County Road 309. Vegetation at the site consists of cultivated pasture grasses. Surrounding vegetation consists of pinyon-juniper woodlands with understory grasses and forbs. Some mature riparian vegetation, consisting of large cottonwoods, is located to the south along Cottonwood Creek. The cultivated fields that dominate the site provide little habitat for migratory birds. However, the surrounding vegetation may provide habitat for a few species found on the U. S. Fish and Wildlife Service (USFWS) 2002 list of Birds of Conservation Concern (BCC).

The pinyon-juniper woodlands provide nesting and feeding habitat for the pinyon jay, gray vireo, black-throated gray warbler, and Virginia's warbler, as well as other species that are not on the BCC list but nonetheless associated primarily with this habitat type. The latter include resident breeders such as the juniper titmouse and Townsend's solitaire and migrants such as the blue-gray gnatcatcher. Although no birds of prey (raptors) are known to nest in the project area, the pinyon-juniper habitat provides perching and potential nesting sites for several species, including one species on the BCC list, Swainson's hawk.

Other raptors potentially using the pinyon-juniper habitat for perching or nesting include the Cooper's hawk, sharp-shinned hawk, red-tailed hawk, and two small owls, the western screech-owl and northern pygmy-owl. Other species that would not be expected to nest onsite but could visit the area in search of prey include the golden eagle and prairie falcon from nearby cliffs; both of these species are on the BCC list.

The riparian habitat provides potential perching, nesting, or hunting habitat for the same birds of prey as in the pinyon-juniper woodland. Also, like the pinyon-juniper woodland, the riparian habitat provides nesting and feeding sites for a variety of migratory and resident small birds.

Proposed Action:

Environmental Consequences: The proposed well pad would remove approximately 4.5 acres of non-native pasture grasses in a cultivated field. This should have minimal impact on migratory birds because native habitats have already been altered. The pasture areas provide some feeding habitat for birds, but are unlikely to be used for nesting.

However, activities associated with the development of the wells would likely displace birds from the area. This impact is of particular concern because raptor nesting habitat occurs within 0.25 miles of the proposed pad location. Displacement resulting from development activities could lead to nest abandonment. To mitigate impacts to nesting raptors, a COA that specifies a nest survey prior to construction is included in Appendix A (Number 7). If an active nest is located within 0.25 miles of the proposed pad, a 60-day timing limitation would be imposed if the activities are proposed during the nesting season.

The development of reserve pit may be expected to attract waterfowl and other migratory birds for purposes of resting or feeding or as a source of water for drinking. Because the nature and extent of this potential problem is not well-defined, management measures must be conservative. These must include measures to prevent direct contact of birds with produced water and drilling and completion fluids that may pose a problem from acute or chronic toxicity or compromised thermoregulation (reference).

No Action Alternative:

Environmental Consequences: Impacts from the no action alternative would be generally similar to the proposed action. However, the lack of a COA designed to protect nesting raptors could lead to nest abandonment. In addition, the absence of a COA intended to prevent access to the reserve pit could result in increased injury or mortality.

Native American Religious Concerns

Affected Environment: At present, BLM is not aware of any Native American concerns within the project area, and none was identified during site-specific inventories. The Ute Tribes claim the area as part of their ancestral homeland. If new data are disclosed by the Ute Tribes, new terms and conditions may have to be negotiated to accommodate their concerns.

Proposed Action:

Environmental Consequences**:** Indirect impacts to cultural resources could result from the increased access and personnel. These could range from unintentional physical damage to illegal collection or vandalism. A standard Education/Discovery COA for cultural resource protection will be attached to the APDs (Appendix A, Number 4). The importance of this COA should be stressed to Williams and their subcontractors.

No Action Alternative:

Environmental Consequences: The no action alternative would not include the Education/Discovery COA designed to protect resources of Native American Religious Concern. The lack of these mitigating measures could lead to illegal collection, illegal excavation, or vandalism.

Special Status Species (includes an analysis on Standard 4)

Affected Environment: According to the latest species list from the USFWS (2002), the following Federally listed and candidate species may reside or be impacted by actions occurring in Garfield County: lynx, black-footed ferret, bald eagle, Mexican spotted owl, western yellow-billed cuckoo, razorback sucker, Colorado pikeminnow, bonytail chub, humpback chub, Uinta Basin hookless cactus, Parachute beardtongue, and DeBeque phacelia.

The Colorado River near the proposed pad is mapped as bald eagle winter range and a known bald eagle winter roost site is located within 0.5 mile of the proposed pad. Designated Critical Habitat for the endangered Colorado pikeminnow and razorback sucker includes the Colorado River and its 100-year floodplain within 0.5 mile of the pad. In addition, three BLM sensitive fish species are known to inhabit the Colorado River near the project area: the flannelmouth sucker, bluehead sucker, and roundtail chub. Another BLM sensitive species that could occur in the proposed action area is the Utah milk snake, which favors moist meadows and riparian corridors but also occurs in other wooded habitats, including pinyon-juniper.

No Federally listed, proposed, or candidate threatened or endangered plant species, no state-listed plant species, and no BLM sensitive plant species were found in or near the proposed action area during a field visit conducted on August 10, 2006, by the BLM Energy Team Ecologist, nor was any suitable habitat identified.

Of the special status species known to occur in Garfield County, only the bald eagle, Colorado pikeminnow, razorback sucker, Utah milk snake, flannelmouth sucker, roundtail chub, and bluehead sucker are potentially present in the proposed action area, given the type and condition/quality of habitats present.

Proposed Action:

Environmental Consequences:

Federally Listed, Proposed, or Candidate Threatened or Endangered Species

- Bald Eagle. The proposed action area is located near a known bald eagle roost site, mapped winter foraging habitat, and potential nesting habitat. It is possible that construction of the well pad, pipeline, and other facilities and extended operation of the drilling rig could affect use of these habitats by bald eagles. In an email dated January 3, 2007, USFWS confirmed its concurrence with BLM's determination of **"May Affect, Not Likely to Adversely Affect"** for bald eagles at this location. A Condition of Approval is included with this document, and would be attached to the approved APD for wells on this pad, to avoid effects to nesting bald eagles if a nest is found within 0.5 miles of the pad (Appendix A, Number 8).

- Colorado Pikeminnow and Razorback Sucker. Although Designated Critical Habitat for these fish is located in proximity to the proposed action, the well pad and other facilities would be constructed well above the river. It is possible that the action would result in small increases in sediment reaching the river, but the minor amount of additional sediment would be well within background levels. No detectible increase in sediment would occur. Furthermore, these fishes are well adapted to the high sediment loads historically carried by the Colorado River.

  Another potential impact to these endangered fishes is associated with depletion of flow volumes, including peak or "scouring" flows. Some water may be withdrawn either directly or indirectly from the Colorado River basin for use in drilling and completion fluids or dust abatement. However, the volume of these depletions is negligible in comparison to flows in the Colorado River near the project area.

  Based on these considerations, the proposed action would have **"No Effect"** on the Colorado pikeminnow or razorback sucker or their habitat.

BLM Sensitive Species

- Utah Milk Snake – Because suitable habitat for this species includes moist grassland and pinyon-juniper woodland, the proposed action could cause direct effects such as injury or mortality during road and pad construction. Following construction, mortality could occur as a result of increased exposure to predation or from vehicle traffic during the active season for this species, April through October.

- Flannelmouth Sucker, Roundtail Chub, and Bluehead Sucker. Although habitat and occurrence records indicate that these fish are located in close proximity to the proposed action, construction would occur well above the river. While it is possible that the action would result in small increases in sediment reaching the Colorado River, no detectible increase in sediment should occur. Therefore, the proposed action would have no impact on these species or their habitat.

No Action Alternative:

Environmental Consequences: Under the no action alternative, protective COAs would not be in effect. The lack of these protective measures could result in displacement of nesting bald eagles if development activities were to occur between January 1 and July 31.

Analysis on the Public Land Health Standard for Threatened or Endangered Species: Although potential habitat for some special status species occurs within or near the proposed action area, the potential for occurrence is low. This consideration, in combination with the protective COAs, is expected to result in no impact to any special status species potentially present in the area. Therefore, the proposed action should not result in a failure of the area to achieve Standard 4 for these species.

The no action alternative could contribute to a downward trend in relation to Standard 4, because nesting bald eagles would not be protected from the displacement that would likely occur from the development of the fee wells.

Wastes, Hazardous or Solid

Affected Environment: Hazardous materials are defined by the BLM as any substance, pollutant, or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended, 42 USC 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act (RCRA) of 1976, as amended, 42 USC 9601 et seq., and its regulations. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 USM 9601 (14), nor does the term include natural gas. No hazardous or solid wastes are known to be present in the project area, and no hazardous materials are known to have been used, stored, or disposed onsite.

Proposed Action:

Environmental Consequences: A variety of materials, including lubricants, treatment chemicals, gasoline, oil, and diesel fuel, would be used in the development activities. Potentially harmful substances used in the construction and operation would be kept onsite in limited quantities and trucked to and from the site as required.

Most waste generated would be exempt from hazardous waste regulations under the exploration and production exemption of the RCRA. Examples of exempt wastes include process water and soils contaminated with hydrocarbons. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed in amounts above the threshold quantities.

No Action Alternative:

Environmental Consequences: Impacts of the no action alternative would be the same as the proposed action.

Water Quality, Surface and Ground (includes an analysis on Standard 5)

Surface Water

Affected Environment: A portion of the existing access road occurs within the 4,724-acre Cottonwood Creek subwatershed, while the remainder of the road and the proposed well pad would occur within a 17,951-acre unnamed subwatershed. The access road crosses the perennial Cottonwood Creek, which joins the Colorado River north of the proposed action area and east of the Town of Parachute.

The State of Colorado has developed *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission, Regulation No. 37) that identify beneficial uses of water and numeric standards used to determine allowable concentrations of water quality parameters. Cottonwood Creek is within the Lower Colorado River Basin segment 4a, which includes all tributaries to the Colorado River from the confluence with the Roaring Fork River to a point immediately below the confluence with Parachute Creek.

This segment is classified aquatic life cold 2, recreation 2, water supply, and agriculture. Aquatic life cold class 2 refers to waters not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class 2 refers to waters that are not suitable or intended to become suitable for primary contact recreation. The water supply class refers to

waters suitable or intended to become suitable for potable water supplies. The agriculture class refers to waters that are suitable for irrigation or livestock use. Numeric standards include a comprehensive list of physical, biological, inorganic, and metal standards that have been established to protect the designated uses above. At this time there is no water quality data for Cottonwood Creek.

The State of Colorado has developed a *303(d) List of Water Quality Limited Segments Requiring TMDLS* (CDPHE, Water Quality Control Commission, Regulation No. 93) that identifies stream segments that are not currently meeting water quality standards with technology based controls alone. Cottonwood Creek is within the Lower Colorado River Basin segment COLCLC04a, which includes tributaries to the Colorado River from the Roaring Fork River to Parachute Creek. This segment is listed as impaired due to selenium and has been given medium priority by the State of Colorado.

The State of Colorado has developed a *Monitoring and Evaluation List* (CDPHE, Water Quality Control Commission, Regulation No. 94) that identifies water bodies suspected to have water quality problems. Cottonwood Creek is within the Lower Colorado River Basin segment COLCLC04a, which includes tributaries to the Colorado River from the Roaring Fork River to Parachute Creek. At this time, the only water bodies listed within this segment are Mamm Creek and South Canyon Creek.

Proposed Action:

Environmental Consequences: Proposed activities would temporarily remove soil and vegetation, resulting in an increase in erosion potential and offsite sedimentation. With measures to control runoff water in place, reestablishment of vegetation, and proper engineering of roads; the potential for sediment transport would be minimized. Mitigation measures designed to protect surface water are presented in Appendix A (Numbers 9 through 13).

No Action Alternative:

Environmental Consequences: If runoff controls are not implemented, vegetation is not promptly reestablished, and if proper engineering practices are not utilized, an increase in erosion and sediment transport would occur. These increases could result in a decrease in local surface water quality.

Groundwater

Affected Environment**:** The surface formation in the proposed action area is the Wasatch Formation. The casing and cementing program are adequate to protect downhole resources including fresh water. Casing includes 1,850 feet of surface casing with cement behind pipe; the top of cement for the production casing is 200 feet above the Mesaverde Formation at an approximate depth of 3,630 feet. According to the COGCC database, the closest water well is approximately 3,100 feet northeast of the surface location. Cottonwood Creek is approximately 500 feet to the southwest, and the Colorado River is approximately 1,500 feet to the north.

Proposed Action:

Environmental Consequences: With the use of proper construction and drilling practices, and with the use of Best Management Practices (BMPs), no adverse impact to groundwater aquifers and quality is anticipated to result from the proposed action. A geologic and engineering review was performed on the Master APD ten-point drilling and on the Geologic and Drilling Prognosis submitted with the individual APDs to ensure that the cementing and casing programs adequately protect the downhole resources.

No Action Alternative:

Environmental Consequences: If the same practices described in the Master APD for the development of the Federal wells are used in the development of the fee wells, the impact of the no action alternative would be the same as the proposed action.

Analysis on the Public Land Health Standard for Water Quality: The proposed action would not likely prevent Standard 5 for water quality from being met. This would also be the case for the no action alternative if the same practices described in the proposed action are used.

OTHER AFFECTED RESOURCES

Soils (includes a analysis on Standard 1)

Affected Environment: The soil map from the *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties* (USDA Soil Conservation Service [Natural Resources Conservation Service] 1985) indicates that the proposed well pad would be located on the soil map unit Potts loam.

Potts loam is a deep, well-drained soil found on mesas, benches, and the sides of valleys at elevations ranging from 5,000 to 7,000 feet and on slopes of 3 to 6 percent. Parent material for this soil includes sandstone, shale, and basalt. Surface runoff for this soil is slow and the erosion hazard is moderate. Primary uses for this soil include irrigated crops and dryland farming.

Proposed Action:

Environmental Consequences: Some loss of soil, loss of soil productivity, and increase in sediment available for transport would result from construction activities. Due to the moderate erosion hazard of the soil type present, mitigation measures intended to minimize potential negative impacts would be implemented (Appendix A, Numbers 9 through 13).

No Action Alternative:

Environmental Consequences: Loss of soil, loss of soil productivity, and sedimentation would be greater under the no action alternative if mitigation measures are not implemented.

Analysis on the Public Land Health Standard for Upland Soils: The proposed action with mitigation would not likely prevent Standard 5 for upland soils from being met. The no action alternative could result in a downward trend in relation to upland soils, if mitigation measures are not implemented.

Vegetation (includes an analysis on Standard 3)

Affected Environment: The pad lies within an agricultural hayfield dominated by alfalfa and smooth brome, both non-native species. Numerous invasive agricultural weeds such as bindweed were also present. Two native shrub species—basin big sagebrush and rubber rabbitbrush—are growing along a fenceline.

Proposed Action:

Environmental Consequences: The well pad would result in an estimated 4.5 acres of disturbance. In order to accommodate access to the well (if production occurs), about one-half of the pad would not be reclaimed during the life of the well. With implementation of reclamation practices identified in the COAs (Appendix A, Number 6), establishment of desirable herbaceous vegetation on the unused portions of the pad and road could be restored within 2 to 3 years.

No Action Alternative:

Environmental Consequences: Impacts from the no action alternative are not clear since reclamation methods would ultimately be determined by agreement between the operator and surface owner. However, it is likely that the area of disturbance would be seeded with alfalfa and other non-native grass species, so impacts to vegetation would be similar to the proposed action. If mitigation measures are not implemented, bindweed and cheatgrass could spread across the disturbed areas.

Analysis of the Public Land Health Standard for Plant and Animal Communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial): The Rifle West Land Health Assessment, completed in 2005, determined that this portion of the landscape was not meeting Standard 3. Problems noted were the

widespread invasion of cheatgrass, with a corresponding loss of other functional groups such as perennial native grasses and forbs. Also, sagebrush communities were dominated by old, decadent individuals with poor recruitment.

The proposed action would maintain the present condition relative to plant and animal communities. The area of the proposed action is an agricultural field and, as such, has already been altered from its natural condition. Seeding disturbed areas with non-native grasses (see Appendix A, Number X) is consistent with the species already occurring in this area, and potential expansion of bindweed and cheatgrass would be mitigated with the application of COAs presented in Appendix A (Number X).

The no action alternative has the potential to contribute to a downward trend relative to plant and animal communities, because COAs designed to mitigate the spread of bindweed and cheatgrass would not be applicable.

Wildlife, Aquatic (includes an analysis on Standard 3)

Affected Environment: The well pad would be placed between two small ephemeral drainages that feed the Colorado River approximately 1 mile to the south. In addition to the special status fish species addressed previously, the Colorado River contains a variety of other native fishes and aquatic macroinvertebrates. Many of the latter are important prey for native nongame and introduced gamefish species.

Proposed Action:

Environmental Consequences: It is likely that site-specific erosion potential would be increased due to clearing of vegetation to accommodate the new well pad and associated facilities. This would be the case until such time as adequate vegetation establishment is obtained on reclaimed portions of disturbed areas. Increased sediment could reduce aquatic insect productivity as streams become silted and clean gravels and cobbles are covered. However, sediment that ultimately reaches the Colorado River should have minimal impact on fisheries, because sediment levels are projected to be well within the background levels for the Colorado River and minor potential increases in sediment would be undetectable.

No Action Alternative:

Environmental Consequences: Impacts from the no action alternative would be similar to the proposed action.

Analysis on the Public Land Health Standard for Plant and Animal Communities (partial, see also Vegetation and Wildlife, Terrestrial): The proposed action and no action alternative should result in minimal impacts to aquatic wildlife and would have little bearing on the ability to maintain or meet Standard 3 for aquatic wildlife.

Wildlife, Terrestrial (includes an analysis on Standard 3)

Affected Environment: Vegetation at the site consists of cultivated grasses. Surrounding vegetation consists of pinyon-juniper woodlands with understory grasses and forbs. Some mature riparian vegetation consisting of large cottonwoods is located to the south along Cottonwood Creek. Given the vegetation at and near the site, the proposed action area provides cover and forage for a variety of big game, small game, and nongame mammals, birds, reptiles, and amphibians. The site mapped as lying within big game (deer/elk) winter range.

Proposed Action:

Environmental Consequences: The proposed action would not result in further direct losses of habitat since the location is already an agricultural field. However, displacement of terrestrial wildlife species during the development phase of the proposed action would result in a loss of effective habitat.

No Action alternative

Environmental Consequences: Impacts from the no action alternative would be similar to the proposed action.

Analysis on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): Large portions of the watershed were either not meeting or trending away from meeting Standard 3 for some terrestrial wildlife, most notably mule deer. Both the proposed action and no action alternative would increase human use in the area and, therefore, would contribute in a minor way to a trend away from meeting Standard 3.

Access and Transportation

Affected Environment: Access to the proposed action area would be via a road on private property with no legal public access, which in turn is accessed via County Road 309 (Parachute to Rulison Road), which in turn is accessed via County Road 323, which in turn is accessed from I-70 or U.S. Highway 6 and 40 ("South Frontage Road") at the Rulison exit on I-70.

Both CR323 and CR309 are Garfield County preferred haul routes and have weight limits of 80,000 lbs. or less for 5-axle vehicles and 54,000 lbs. or less for 3- or 4-axle vehicles. A permit from Garfield County is required for overweight vehicles. Average Daily Traffic counts on these roads, since the County's 2002 transportation study, has probably increased in the last four years.

Proposed Action:

Environmental Consequences: Truck traffic would be heaviest during rig-up, completion activities, and the rig-move to the next location. The proposed drilling and completion activities would likely commence in the first half of 2007 and continue until all the wells have been drilled. This period is estimated to be approximately six months. Total project related traffic would not represent a substantial increase in local traffic levels that are already high. Ongoing weekly traffic by well-service vehicles would occur for the life of the wells.

No Action Alternative:

Environmental Consequences: Impacts from the no action alternative would be similar to the proposed action.

Geology and Minerals

Affected Environment: The proposed action is located within the Parachute Field. These wells would penetrate the Wasatch Formation and Mesaverde Group Cameo coals and Rollins Sandstone. In these wells, conventional sands would be explored for possible economic gas recovery in the Mesaverde Group. The casing and cementing programs are adequate to protect downhole resources. The Cameo coals, with more than 6,000 feet of overburden, are in the lower Williams Fork Formation. Although the current economic value of the Cameo coals as a developable mineral resource is low, identified seams will be isolated by the proposed casing and cementing program.

Proposed Action:

Environmental Consequences: All coal seams and fresh water zones would be protected with casing and cement behind pipe. No additional mitigation would be required.

No Action Alternative:

Environmental Consequences: If the casing and cementing programs associated with the fee wells are the same as the Federal wells, the impacts from the no action alternative would the same as the proposed action.

Noise

Affected Environment: The proposed action area is located approximately 3 miles northeast of the town of Parachute, Colorado, and approximately 1 mile southwest of the village of Rulison, Colorado. Noise levels at these locations are presently created by traffic traveling on I-70 and by trucks serving existing oil and gas wells in the near vicinity of the proposed action.

Proposed Action:

Environmental Consequences: The proposed action would result in increased levels of noise during the construction, drilling, and completion phases of oil and gas development. The noise would be most noticeable along County Road 309 and other local roads used to haul equipment to the well site. While elevated noise would be maintained throughout the duration of drilling and completion of the wells, the effect would be temporary and is in an area already exposed to such activities. No noise abatement is proposed.

No Action alternative:

Environmental Consequences: Impacts from the no action alternative would be the same as the proposed action.

Range Management

Affected Environment: The proposed pad would be on private surface within the Hoaglund Allotment #08123. Table 3 summarizes the permitted grazing use on the allotment.

Table 3. Permitted Use of the Hoaglund Allotment.

Allotment	Permittee	Livestock Kind and Number	Season of Use	% Public Land	AUMs
Hoaglund #08123	Edward Hoaglund	Cattle: 10	6/1 – 7/31	85	17

Proposed Action:

Environmental Consequences: Road construction activities would result in minimal loss, approximately one animal unit month (AUM), of forage available to livestock. Rehabilitation of vegetation on the location would result in reestablishment of forage which usually takes about 3 years. A small portion of the disturbed area would be required for gas production in the long term and would not be available for livestock use during this time. Livestock may also be minimally disturbed by the increase in human activity during construction and maintenance of gas facilities.

It is not anticipated that the level of impacts from implementation of the proposed action would require adjustment of the livestock stocking rate. The level of forage utilization would be monitored on the allotment. If necessary, adjustments in livestock use will be made to protect land health. Any range improvements damaged during construction of the proposed project would be repaired or replaced by the proponent. If the proposed road crosses any fence line, a cattle guard would be placed in the road.

No Action alternative:

Environmental Consequences: Impacts from the no action alternative would be the same as the proposed action.

Paleontology

Affected Environment: Surficial geology consists of the Wasatch Formation of Paleocene age. The Wasatch is a Class 1 formation, with areas known or likely to produce abundant scientifically important

fossils vulnerable to surface-disturbing activities. The Wasatch Formation may contain early horses, rare primates, rhinoceroses, birds, crocodiles, rodents, fish, turtles, fresh water clams, snails, and plants.

There are no paleontological sites identified near the proposed well pad. The well pad is located within irrigated hay ground and pasture.

Proposed Action:

Environmental Consequences: Because the proposed well pad is located within an existing hayfield, paleontological resources should not be impacted by new well pad construction. No new surveys would be required. The standard paleontological COA would be applied to the APDs (Appendix A, Number 14).

No Action alternative:

Environmental Consequences: Impacts from the no action alternative would be the same as the proposed action.

Visual Resources

Affected Environment: The proposed action area is located on private surface in an area classified in the as VRM Class II (BLM 1984). The objective of VRM Class II is to retain the existing landscape character. The level of change in any of the basic landscape elements (line, form, color, texture) due to management activities should be low and not evident.

Visual resource management objectives do not apply to non-BLM lands, but visual concerns may be addressed on split estate lands (i.e., private surface and Federal minerals). VRM classes shown for non-public lands are an indication of the visual values for those lands, and those values are protected solely at the discretion of the landowner and any applicable local or county land use regulations.

The protection of VRM classes, landscape character and scenic quality on private and public lands and split estate is discussed in the FSEIS (BLM 1999b:3-41 to 3-45). The impacts of development are also described (BLM 1999b:4-49-54). The proposed action would affect a key viewing area and the viewshed of I-70.

Proposed Action:

Environmental Consequences: The proposed well pad location is the location preferred by the landowner and negotiated through a surface use agreement. Impacts to the existing landscape character and visual values are expected in the viewsheds of I-70, County Road 309, and to the landowner's residence. VRM Class II objectives will not be maintained in the short term or long term due to the high level of contrasts to color, line, form, and texture introduced into the landscape. To minimize contrasts, all above-ground facilities (including a containment ring) should be painted with the flat, non-specular Standard Environmental color, "Shale Green."

No Action Alternative:

Environmental Consequences: Under the no action alternative, development would occur on private mineral estate and the BLM, therefore, would have no authority to manage visual resources and suggest possible mitigation. The private surface owner would still have discretion over the protection of the visual characteristics of the landscape.

CUMULATIVE IMPACTS SUMMARY

The Draft and Final Roan Plateau Resource Management Plan Amendment & Environmental Impact Statements (BLM 2004, 2006) collectively analyzed six alternatives for oil and gas development in the Roan Plateau planning area. These alternatives assessed impacts, including cumulative impacts, for oil

and gas development scenarios ranging upward to 1,582 new wells on public lands within the planning area and 3,019 new wells on both public and private lands. These numbers are in addition to comparable levels of oil and gas development within western Garfield County but outside the Roan Plateau area.

The proposed action is representative of recent advances in drilling technology that are reducing the cumulative impact levels described in the Draft Roan Plateau RMP Amendment and EIS. Specifically, greater use of directional drilling, being pursued most intensively by Williams, has allowing up to 22 wells per pad instead of the more typical number of two to four at the time the Draft Roan Plateau RMP Amendment and EIS and the earlier Oil and Gas Leasing & Development Final Supplemental EIS were prepared in November 2004 and March 1999, respectively. This advancement has reduced the number of pads that need to be constructed and allowed BLM to undertake a management direction emphasizing phased and clustered development, unitization, centralization of surface facilities, limits on unclaimed disturbance, and restrictions or prohibitions on the development of sensitive areas and key resources. Since the Proposed Roan Plateau RMP Amendment and EIS presents a recent analysis of cumulative impacts in an area encompassing the proposed action, it is incorporated by reference.

As an example of the reduction in cumulative impacts associated with the greater use of clustered directional drilling, the Proposed Plan presented in the Final Roan Plateau RMP Amendment and EIS of August 2006 estimated 812 acres of long-term disturbance from 1,570 new wells on 193 new pads. In comparison, the maximum development scenario presented in the Draft plan of November 2004 estimated 2,495 acres of long-term disturbance from 1,582 new wells but 584 pads.

Although none of the cumulative impacts described in the Final Roan Plateau RMP Amendment and EIS was characterized as significant, and while new technologies have reduced the amount of direct habitat loss required per given number of new wells, it nonetheless is clear that past, present, and reasonably foreseeable future oil and gas development has had and would continue to adversely affect various elements of the human environment.

The anticipated impact levels for existing and future development range from negligible to locally major, and primarily negative, for specific resources. The primary reasons for this assessment are twofold: (1) the past, present, and future rate of oil and gas development in the Roan Plateau area has far exceeded the rate of abandonment and reclamation, resulting in an accumulation of individually nominal effects; and (2) the majority of oil and gas development in the area has occurred, and is likely to continue to occur, on private holdings where leases stipulations, mitigation measures applied as conditions of approval, and development scenarios designed to protect and conserve resources are not in effect.

The proposed action is anticipated to contribute negligibly to the collective impact, due to the small scope of the project and the mitigation measures represented by the conditions of approval identified in Appendix A.

PARTIES / AGENCIES CONSULTED:

Williams Production RMT Company

United States Fish and Wildlife Service

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Rick Haskins	Natural Resource Specialist	Team Leader
Mark Ennes	Planning and Environmental Coordinator	NEPA compliance
Isaac Pittman	Rangeland Specialist	Range Management
Beth Brenneman	Ecologist	Vegetation, Special Status Plants,

		Invasive Non-native Species
Kay Hopkins	Outdoor Recreation Planner	VRM, ACEC, Wilderness, WSR
Jeff O'Connell	Hydrologist	Soil, Air, Water, Riparian
Jeff Cook	Wildlife Biologist	Terrestrial Wildlife, Migratory Birds, Special Status Wildlife
John Brogan	Archaeologist	Cultural Resources and Native American Religious Concerns
Fred Conrath	Geologist	Groundwater, Geology and Minerals, Paleontology
Tom Fresques	Fisheries Biologist	Special Status Fishes
Marty O'Mara	Petroleum Engineer	Downhole Conditions of Approval

REFERENCES:

Bureau of Land Management (BLM)

1984. *Glenwood Springs Resource Management Plan*. Glenwood Springs Field Office.

1991. *Record of Decision, Oil and Gas Plan Amendment to the Glenwood Springs Resource Management Plan.* Glenwood Springs Field Office.

1999a. Oil *and Gas Leasing and Development – Record of Decision and Resource Management Plan Amendment.* Glenwood Springs Field Office.

1999b. Oil *and Gas Leasing and Development – Final Supplemental Environmental Impact Statement.* Glenwood Springs Resource Area. Glenwood Spring Field Office.

2004. *Draft Roan Plateau Planning Area Resource Management Plan Amendment and Environmental Impact Statement.* Glenwood Springs Field Office.

2005. *Rifle-West Watershed Land Health Assessment*. Glenwood Springs Field Office.

2006. *Final Roan Plateau Planning Area Resource Management Plan Amendment and Environmental Impact Statement*. Glenwood Springs Field Office.

Colorado Division of Wildlife (CDOW)

2005. Colorado Species Distribution – Bald Eagle. Seasonal Activity Area Definitions. Fort Collins, Colorado 80526.

U.S. Department of Agriculture (USDA)

1985. *Soil Survey of Rifle Area, Colorado: Parts of Garfield and Mesa Counties.* Soil Conservation Service [Natural Resources Conservation Service].

U.S. Fish and Wildlife Service (USFWS)

2002. *Birds of Conservation Concern*. Division of Migratory Bird Management, Arlington, Virginia. 99 pp. [Online version available at http://migratorybirds.fws.gov/reports/bcc2002.pdf]

FONSI
CO-140-2006-132 EA

Williams Production RMT Company Proposal to drill eight (8) Federal wells from a new well pad located of private surface: Hoaglund PA 32-2, PA 332-2, PA 432-2, PA 532-2, PA 42-2, PA 342-2, PA 442-2, and PA 542-2.

The environmental assessment analyzing the environmental effects of the proposed action has 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 RECORD

DECISION: It is my decision to approve the Applications for Permit to Drill (APDs) for all wells identified above, subject to the Conditions of Approval (COAs) attached as Appendix A. This decision will provide for the orderly, economical, and environmentally sound exploration and development of oil and gas resources on valid oil and gas leases.

RATIONALE:
1. Approval of the proposed action is validating the rights granted with the Federal oil and gas leases to develop the leasehold to provide commercial commodities of oil and gas.
2. The environmental impacts have been mitigated with measures included in the attached Conditions of Approval.

MITIGATION MEASURES: Mitigation measures presented as COAs in Appendix A will be attached to the Applications for Permit to Drill (APDs) for each well covered by this FONSI. The COAs address both surface use and downhole considerations.

NAME OF PREPARER: Rick Haskins, Natural Resource Specialist

SIGNATURE OF PLANNING AND ENVIRONMENTAL COORDINATOR:

Planning and Environmental Coordinator — Date 1/10/07

SIGNATURE OF AUTHORIZED OFFICIAL:

Authorized Officer — Date 1/11/07

APPENDIX A

CONDITIONS OF APPROVAL

CO-140-2006-132 EA

SURFACE USE CONDITIONS OF APPROVAL

Williams APDs for new Federal wells (Hoaglund PA 331-2 pad): PA 32-2, PA 332-2, PA 432-2, PA 532-2, PA 42-2, PA 342-2, PA 442-2, PA 542-2

1. Startup. At least 48 hours prior to construction, the operator shall notify the BLM representative of construction startup plans.

2. Dust Abatement. The operator shall implement dust abatement measures as needed or directed by the Authorized Officer. The level and type of treatment (watering or application of various dust-control agents, surfactants, and road surfacing material) may be changed in intensity and must be approved by the Authorized Officer. Dust control is needed to prevent plumes of dust from road use that create safety problems and disperse particulate matter onto adjacent vegetation.

3. Historic Ditch Mitigation. Although no "Adverse Effect" is currently anticipated to the historic ditch segment within the project area, if the access road alignment changes to include a ditch crossing, any potential "Adverse Effect" would be mitigated by measures previously concurred with by the SHPO (8/14/06) for an earlier similar project (GSFO# 14506-4). The possible "Adverse Effect" anticipated to the historic ditch segment shall be mitigated by the following measures:

· Pre and post-construction photographs and descriptions of the affected locations.

· Culvert(s) installed where the access road bisects the ditch.

· Removal of the culvert(s) and the rehabilitation of the ditch to its original condition upon road abandonment.

4. Cultural Education/Discovery. All persons in the area who are associated with this project must be informed that if anyone is found disturbing historic, archaeological, or scientific resources, including collecting artifacts, the person or persons will be subject to prosecution.

Pursuant to 43 CFR 10.4(g), the Authorized Officer must be notified 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), activities must stop in the vicinity of the discovery and the discovery must be protected for 30 days or until notified to proceed by the Authorized Officer.

If in connection with operations under this contract the project proponent, his contractors, subcontractors, or the employees of any of them, discovers, encounters or becomes aware of any objects or sites of cultural or paleontological value or scientific interest such as historic ruins or prehistoric ruins, graves or grave markers, fossils, or artifacts, the proponent shall immediately suspend all operations in the vicinity of the cultural or paleontological resource and shall notify the Authorized Officer of the findings (16 USC 470h-3, 36 CFR 800.112). Operations may resume at the discovery site upon receipt of written instructions and authorization by the Authorized Officer. Approval to proceed will be based upon evaluation of the resource. Evaluation shall be by a qualified professional selected by the Authorized Officer from a Federal agency insofar as practicable. When not practicable, the holder shall bear the cost of the services of a non-Federal professional.

Within five working days the Authorized Officer will inform the holder as to:

- whether the materials appear eligible for the National Register of Historic Places;
- what mitigation measures the holder will likely have to undertake before the site can be used (assuming *in situ* preservation is not necessary); and

- the timeframe for the Authorized Officer to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the SHPO State Historic Preservation Officer that the findings of the Authorized Officer are correct and the mitigation is appropriate.

The proponent may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the new area has been appropriately cleared of resources and the exposed materials are recorded and stabilized. Otherwise, the proponent will be responsible for mitigation costs. The Authorized Officer will provide technical and procedural guidelines for relocation and/or to conduct mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the proponent will then be allowed to resume construction.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the proposed action will also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities will be mitigated at the proponent's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361).

5. Noxious Weeds. The project proponent is required to monitor for the presence of any Colorado-listed noxious weeds twice annually during the growing season until final reclamation of the pad is complete. The project proponent will promptly treat and control any noxious weeds. A Pesticide Use Proposal must be approved by BLM prior to the use of herbicides.

6. Reclamation. Refer to Appendix I (Surface Reclamation) of the 1998 Draft Supplemental EIS (DSEIS) for specific reclamation goals, objectives, timelines, measures, and monitoring methods. These guidelines should be followed in completing the reclamation of disturbed surfaces on well pads, access roads, and pipelines. The four Reclamation Categories defined in Appendix I of the 1998 DSEIS should be used to assess the progress of reclamation.

a. Seedbed Preparation. Initial seedbed preparation shall consist of backfilling, leveling, and ripping all areas to be seeded to a minimum depth of 18 inches with a furrow spacing of 2 feet, followed by recontouring the surface and then spreading the stockpiled topsoil evenly. Prior to seeding, the seedbed shall be scarified and left with a rough surface. No depressions shall be left that would trap water and form ponds. Final seedbed preparation shall consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation.

b. Seeding. BLM generally specifies use of a certified weed-free seed mix consisting of diverse native grasses and native or desirable non-native forbs. However, because the well pad and the existing road are located on private surface, the private landowner would ultimately determine the seed mix to be used for reclamation. An adapted mix that would help to reduce erosion and the establishment of weeds while providing food and for wildlife is as follows:

Common Name	*Variety*	*Percent*	*PLS lbs/acre*
Thickspike Wheatgrass	Critana	25	2.8
Western wheatgrass	Arriba	25	3.7
Sandberg/Canby bluegrass		25	0.5
Alfalfa		25	2.1
Total		**100**	**9.1**

The application rate shown in the table is based on 45 pure live seeds (PLS) per square foot, drill-seeded to a depth of 0.25 to 0.5 inch. In areas that cannot be drill-seeded, the mix shall be broadcast-seeded at twice the application rate shown in the table and covered 0.25 to 0.5 inch deep with a harrow or drag bar. Fall seeding shall be conducted after September 1 and prior to ground frost. Spring seeding shall be conducted after the frost leaves the ground and no later than May 15. If the seeding is unsuccessful, the operator shall be required to make subsequent seedings until the reclamation objectives identified in Appendix I (Surface Reclamation) of the 1998 DSEIS are met.

Note: Because cheatgrass is already abundant in the project vicinity, it may not be feasible to completely eliminate this invasive species from the project area. Therefore, if the area adjacent to the project site contains less than a 50-percent cover of cheatgrass, interim reclamation will be considered acceptable when the cover of cheatgrass on the project site does not exceed 5 percent. If the area adjacent to the project contains more than 50 percent cover by cheatgrass, interim reclamation will be considered acceptable when cheatgrass cover does not exceed 50 percent.

7. Raptors. Because of the location of the pad near the Colorado River riparian corridor, which provides suitable nest sites for raptor nesting, the operator shall conduct surveys within 0.25 mile of the pad if construction or drilling operations are to be initiated during the raptor nesting season (February 1 to August 15). If an active raptor nest is found within 0.25 mile of the pad prior to initiation of construction of the pad and associated facilities, construction shall not occur during a 60-day period beginning on the date the nest is found to be active. This restriction will not apply to any raptor nests that become active following initiation of construction or drilling operations. In the event of an active raptor nest within 0.25 mile of the pad, the operator is advised to ensure compliance with the Migratory Bird Treaty Act by contacting Creed Clayton of the U.S. Fish and Wildlife Service (USFWS) at the Glenwood Springs Energy Office at 970-947-5219 or at john_c_clayton@blm.gov. and Jeff Cook of the BLM at the Glenwood Springs Energy Office at 970-947-5231 or at jeffrey_cook@blm.gov.

8. Special Status Species. The pad is located near the Colorado River riparian corridor, which provides potential nesting sites for the federally listed bald eagle. A survey to determine the presence or absence of nesting bald eagles within 0.5 miles of the pad is required no sooner than two weeks prior to any construction or drilling activities if these activities commence between January 1 and July 31. In the event an active bald eagle nest is found within 0.5 mile of the pad, Williams is advised to ensure compliance with the Endangered Species Act by suspending all activities, including those associated with private wells, and contacting Creed Clayton of the U.S. Fish and Wildlife Service (USFWS) at the Glenwood Springs Energy Office at 970-947-5219 or at creed_clayton@fws.gov. BLM would also apply a 60-day Timing Limitation for the period during which consultation with USFWS would occur, or until July 31, whichever occurs sooner.

9. Erosion Control. Cut-and-fill slopes shall be protected against erosion with measures such as water bars, lateral furrows, or other measures approved by the Authorized Officer. Weed-free straw bales, straw "wattles," straw matting, or a well-anchored fabric silt fence shall be used on cuts and fill slopes and along drainages to protect against soil erosion. Additional BMPs shall be employed as necessary to ensure reduced off-site erosion and to protect drainages from sediment.

10. Stormwater. The operator shall consult with the State of Colorado Water Quality Control Division (contact Matt Czahor at 303-692-3575 or matthew.czahor@state.co.us) regarding Stormwater Discharge Permits prior to commencing construction activities. All 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 Jeff O'Connell, Hydrologist of the Glenwood Springs Energy Office at 970-947-5215 or jeffrey_o'connell@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-947-5267), or mailed to Jeff O'Connell at the Glenwood Springs Energy Office.

11. Wetlands and Other Waters of the U.S. The operator shall consult with the U.S. Army Corps of Engineers (contact Sue Nall at 970-243-1199 x16 or susan.nall@usace.army.mil) to obtain approval prior to discharging fill material into waters of the U.S. 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 U.S. 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 Jeff O'Connell, Hydrologist of the Glenwood Springs Energy Office at 970-947-5215 or jeffrey_o'connell@blm.gov. Appropriate documents may be sent via electronic mail, facsimile (970-947-5267), or regular mail.

12. Culverts. Culverts shall be installed during no flow or low flow conditions at drainage crossings and shall be required to pass a 25-year or greater storm event. The 25-year, 6-hour precipitation event for the proposed action area is approximately 1.5 inches and the 25-year, 24-hour precipitation event is approximately 2.1 inches.

13. Road Maintenance. The operator shall provide timely year-round maintenance and cleanup on the access road. A regular schedule for maintenance shall include, but not be limited to, blading, ditch and culvert cleaning, road surface replacement and dust abatement. The road shall be crowned, ditched, and drained with culverts and/or water dips. Initial gravel application shall be a minimum of 4 inches. When rutting within the traveled way becomes greater than 6 inches, gravel shall be applied as approved by the Authorized Officer.

14. Paleontology. All persons associated with operations under this authorization must be informed that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved or disturbed. If in connection with operations under this authorization any of the above resources are encountered the proponent shall immediately suspend all activities in the immediate vicinity of the discovery that might further disturb such materials and notify the BLM authorized officer of the findings. The discovery must be protected until notified to proceed by the authorized officer.

As feasible, the proponent shall suspend ground-disturbing activities at the discovery site and immediately notify the BLM authorized officer of any finds. The BLM authorized officer will, as soon as feasible, have a BLM-permitted paleontologist check out the find and record and collect it if warranted. If ground-disturbing activities cannot be immediately suspended, the proponent shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

15. Reserve Pit. A minimum of 2 feet of freeboard shall be maintained in the reserve pit. Freeboard is measured from the highest level of drilling fluids and cuttings in the reserve pit to the lowest surface elevation of ground at the reserve pit perimeter.

16. Drill Cuttings. Drill cuttings generated from these wells (Hoaglund PA 32-2, 42-2, 332-2, 342-2, 432-2, 442-2, 532-2, and 542-2) will be placed into a disposal trench constructed at the base of the cut hillside, and will be constructed such that the cuttings will not come into contact with ground water, surface water, or storm water runoff. Drilling muds, cuttings, fracing material, and any other byproducts of drilling and production activities must be contained on the well pad. After the cuttings

have dried sufficiently, they will be encapsulated with a minimum of six inches of fill/cover material. For safety, this trench will be fenced to prevent access by livestock and people.

DOWNHOLE CONDITIONS OF APPROVAL

Company/Operator**: Williams Production RMT Company**

Surface Location: **NENW Sec. 2, T7S, R95W**

Well Name	*Well No.*	*Bottomhole Location*	*Lease*
Hoaglund PA	**32-2**	**SWNE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**332-2**	**SWNE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**432-2**	**SWNE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**532-2**	**SWNE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**342-2**	**SENE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**42-2**	**SENE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**442-2**	**SENE Sec. 2, T7S, R95W**	**COC-05173**
Hoaglund PA	**542-2**	**SENE Sec. 2, T7S, R95W**	**COC-05173**

Those Conditions of Approval identified in the Williams Production RMT Company Master APD (Approved April 27, 2006) for the Parachute Field Area D will apply.

Please contact Steve Ficklin (970-947-5213) or Jennifer Gallegos (970-947-5220) of the Glenwood Springs Energy office at least 24 hours:

1) pre- and post-spud
2) prior to running the surface and production casing
3) conducting the BOP test

Bald Eagle Nesting and Roosting
Lower Colorado River

Biological Assessment
For the
The Development of Williams RMT Natural Gas Wells
In The Lower Colorado River Corridor
Parachute, Colorado

Natural Gas Well Locations
RWF 22-29, PA 21-2, PA 331-2 and GV 22-29

December 2006

Prepared and Submitted by:

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Allen B. Crockett for 12/27/2006

Jeff Cook, Wildlife Biologist, BLM, Glenwood Springs Energy Office

INTRODUCTION

The purpose of this biological assessment is to review the proposed development of natural gas wells along the Colorado River in the vicinity of Parachute, Colorado, in sufficient detail to determine whether the proposed action may affect nesting or wintering Bald Eagles.

Bald Eagles are found nesting in limited numbers along the lower Colorado River Corridor in western Colorado. In addition, during winter months Bald Eagle populations increase due to an influx of migratory eagles from northern states and likely from Canada.

Williams Production RMT is proposing to construct four natural gas well pads (two existing and two new) and initiate drilling during the winter and early spring of 2007 as part of the their ongoing natural gas production program. The four sites under review by the biological assessment fall within or near Bald Eagle winter range and nesting habitat. Due to the federal threatened status of the Bald Eagle, the Glenwood Springs Energy Office (BLMEO) requested a biological assessment to determine potential affects to this species. Well pads will be constructed on private land and drilling will involve private and federal minerals.

PROJECT DESCRIPTION

The four natural gas pads are located near the town of Parachute, Colorado, approximately 45 miles northeast of Grand Junction, Colorado (Figure 1). Three of the pads are along the Colorado River and one location is adjacent to Parachute Creek situated about four miles north of Parachute, Colorado.

All of the natural gas development will be completed by Williams Production RMT, 1058 Country Road 215, P.O. Box 370, Parachute, Colorado.

Site Descriptions (maps and specific site data are included in Appendix A)

Natural Gas Well Pad PA 21-2
A new pad located approximately four miles east of Parachute, Colorado, on the south side of the Colorado River (NE ¼, Section 2, T7S, R95W). This pad is located 0.2 miles south of the Colorado River flood plain in an upland area. The habitat at the site is composed of a mix upland vegetation including sagebrush and mountain shrub species occurring with piñon-juniper woodlands and Gambel's oak.

Natural Gas Well Pad PA 331-2
A new pad located approximately four miles east of Parachute, Colorado, on the south side of the Colorado River (NE ¼, Section 2, T7S, R95W). The site is about 400 yd east of PA 21-2. This site will be constructed on a bench above the river and is currently located in an irrigated hay meadow that is part of a working cattle ranch. The habitat surrounding the pad is sagebrush, mountain shrub and piñon-juniper woodlands.

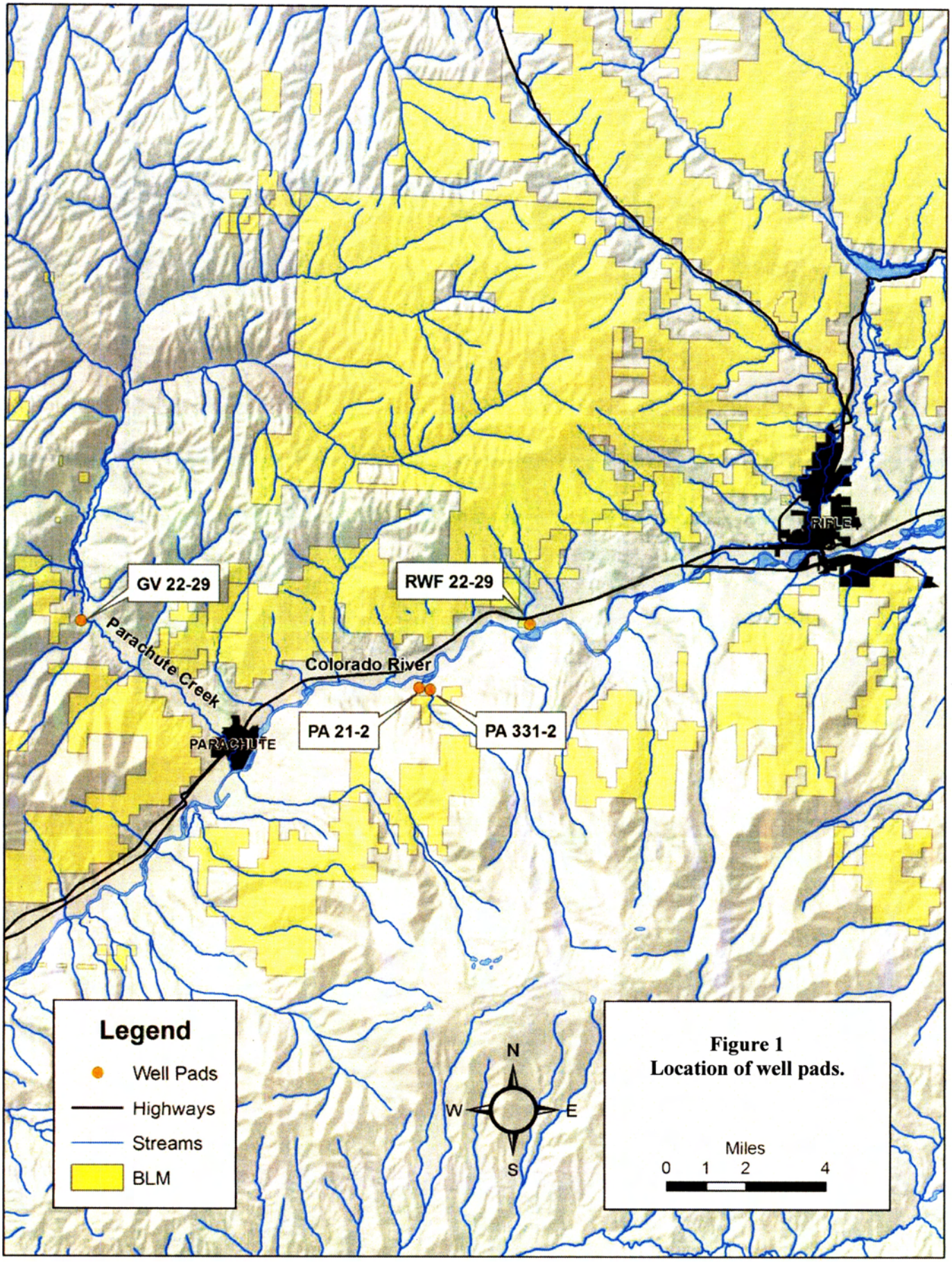

Figure 1
Location of well pads.

Natural Gas Well Pad RWF 22-29

Located approximately eight miles east of Parachute, Colorado, on the north side of the Colorado River (NW ¼, Section 29, T6S, R94W). This is an existing well pad and Williams is proposing to drill additional wells from the site. The site is located immediately south of Interstate 70 and about 75 yd north of the Union Pacific railroad line. Habitat surrounding the site is composed mainly of sagebrush and rabbitbrush with few woodland species. The surrounding land use is livestock grazing and other associated natural gas production and compressor facilities.

Natural Gas Well Pad GV 22-29

The site is located approximately four miles north of Parachute, Colorado, on the west side of Parachute Creek (Se ¼, Section 29, T6S, R96W). The new gas wells will be drilling from the existing pad with producing wells currently in place. The site is in an upland area dominated by sagebrush, piñon-juniper woodlands and mountain shrub communities. Parachute Creek supports cottonwoods, box-elders, willows, sumac and sagebrush. The surrounding land use includes livestock grazing and additional natural gas wells, pipelines and compressor facilities.

General Project Development Plans

Each pad site will be constructed or upgraded (existing pads) using earth moving machinery, which will modify the existing terrain in a manner consistent with standards necessary to accommodate drilling equipment and infrastructure. Existing roads provide access to all pads except for PA 331-2. New road construction on PA 331-2 will occur on private lands in a manner consistent with landowner preferences and has been designed to minimize disturbance to natural vegetation, ranch dwellings and agricultural practices associated with livestock management and haying operations.

Implementation Schedule

Field	Pad Number	Surface Owner	Federal Minerals Start Date
Parachute	PA 21-2	Hoagland	1/1/2007
Parachute	PA 331-2	Hoagland	2/1/2007
Grand Valley	GV 22-29	Chevron	3/1/2007
Rulison	RWF 22-29	Clough	2/1/2007

LIST OF SPECIES

Species	Scientific Name	ESA Status
Bald Eagle	*Haliaeetus leucocephalus*	Threatened

CONSULTATION HISTORY

December 6, 2006: On-site surveys were conducted at well locations PA 21-2, PA 331-2 and RWF 22-29. Bureau of Land Management (BLM) and United States Fish and Wildlife Service (USFWS) personnel had previously conducted on-site inspections at GU 22-29. Personnel from Williams, BLM, and USFWS met to discuss issues and plan of development activities around the well pads. Information was used by the BLM to determine the necessity of the completion of this biological assessment.

BALD EAGLE

Existing Conditions

Species Account

The Bald Eagle is designated as a threatened species on the U.S. Endangered Species List. It is classified as threatened in all of the continental United States except Alaska where populations are secure. Eagle abundance declined nationally due to increased human impacts in primary nesting areas. These impacts included habitat destruction, illegal shooting and pesticide poisoning.

The Bald Eagle is listed as a threatened species on the Colorado State Threatened and Endangered Species List (CDOW 2006a). Historically, only two to three pairs of Bald Eagles nested in Colorado, but nesting pairs have increased substantially over the last 30 years. In Colorado, there are approximately 80 nest sites that have been occupied within the last 5 years, with around 60 sites currently occupied. In 1974, there was one known nesting pair within the state. By 1989 the number of nesting pairs had increased to ten, then to 29 sites in 1999 and has doubled since then. Roughly, one-third of the breeding sites are found east of the Continental Divide within the South Platte River watershed (CDOW 2006a). Other breeding concentrations include the Yampa River upstream of Craig, the White River in the vicinity of Meeker, the Colorado River upstream of Kremmling, and the La Plata and Montezuma counties. The Colorado Division of Wildlife (CDOW) monitors nesting success and recent success rates approach 70%.

From late November through March, Colorado supports up to 800 wintering Bald Eagles that migrate into the state from the northern states and Canada. The CDOW annual midwinter count shows a generally stable wintering population (CDOW 2006a).

Lower Colorado River Population Demography

Nesting

The Lower Colorado River Valley (Glenwood Springs to the Utah state line) currently supports nesting Bald Eagles, however, nest numbers are considered to be low with the number of active nest fluctuating annually. Current CDOW Natural Diversity Information Source (NDIS) (CDOW 2006b) records indicate that there are six active and five inactive nest sites between Glenwood Springs and the Utah state line. The number of nest sites has steadily increased in the past 30 years, but the number of active nest sites has remained relatively stable over the past 10 years.

In the project area evaluated for this BA, there are no known active nest sites (Figures 3 and 4). The closest active nest site is found about 0.5 miles west of Rifle, Colorado, along the Colorado River in a large cottonwood tree. A second active nest site is found about 0.5 miles east of Rifle adjacent to the Colorado River. The CDOW defines an active nest as: "a specific location in which a pair of Bald Eagles have at least attempted to nest within the last five years. Any nest location that can be directly tied to courtship, breeding, or brooding behavior is considered active. A buffer zone extends 0.5 miles around a known active nest."

The CDOW defines an inactive nest site as a "former active nest location in which neither courtship, breeding, or brooding activity has been observed at any time during the last 5 years." From Rifle to Debeque, Colorado, there are two inactive nest sites documented in CDOW records. At one existing site, east of Webster Mesa, Bald Eagles have been observed in the vicinity of an inactive nest, suggesting that this nest may become active during the 2007 nesting season (Clayton USFWS 2006 pers. comm.). The remaining inactive nest site (south of RWF 22-29) has apparently been used by Great Blue Herons, since the nesting tree has four additional heron nests, which all appear to have been active during 2006.

No active or inactive Bald Eagle nests have documented along Lower Parachute Creek. CDOW NDIS (CDOW 2006b) records indicate an active Bald Eagle nest in Upper Parachute Creek; however, recent WestWater Engineering (WWE) surveys (2005 and 2006) have shown this nest to be inactive. Bald Eagle nests along the Colorado River are typically found within 75 yd of the river in large, mature, Fremont cottonwood trees (Graham pers. comm.).

Roosting

The Lower Colorado River riparian corridor provides suitable winter habitat for Bald Eagles. Suitable roosting habitat is typically cottonwood trees, which are presently dominated by mature trees. Roosting habitat tends to concentrated either in cottonwood galleries or sometimes in single, more isolated trees, which are found in the flood plain adjacent to the river. Due to the relatively moderate slope throughout the Colorado River Valley, the river has developed a meandering configuration, which has created oxbows, sloughs and braided channels. The predominance of old age class, mature trees has created suitable roosting habitat for Bald Eagles.

In the project area, suitable roosting habitat has been mapped by the CDOW and is available on the NDIS internet site (CDOW 2006b). Roosting sites are mapped by local CDOW district wildlife managers and wildlife biologists and data is based on the personnel's familiarity with the habitat of wintering Bald Eagles. The data is maintained by the CDOW office in Ft. Collins, Colorado. The CDOW defines a roost site as: "Groups of or individual trees that provide diurnal and/or nocturnal perches for less than 15 wintering Bald Eagles; includes a buffer zone extending 0.25 miles around these sites. These trees are usually the tallest available trees in the wintering area and are primarily located in riparian habitats."

NDIS records are somewhat difficult to interpret due to the lack of point locations for roost sites (CDOW 2006b). It is assumed that mapped polygons are groups of cottonwood trees usually containing multiple individual suitable roosting trees. Analysis of the data indicates that there are approximately 25 mapped roost polygons between Rifle and DeBeque, Colorado. In the Colorado River project area assessed in this biological assessment, from Webster Hill to the bridge at Parachute, Colorado, there are ten mapped roosting polygons containing multiple potential roost trees. It is highly likely that the number of roosting sites exceeds the number mapped by CDOW. Recent surveys conducted by WWE biologists have documented additional night and day roost sites in the project area that are not mapped by CDOW (Figures 5 and 7). There are no known communal roost sites in the Colorado River project area. According to CDOW documentation, communal roost sites are specific locations where more than 15 Bald Eagles are found using perches during diurnal and/or nocturnal periods.

In the Parachute Creek project area (area within 0.5 mile radius of GU 22-29); there are no mapped Bald Eagle roost sites (CDOW NDIS, CDOW 2006b). During recent surveys, WWE biologist documented two Bald Eagle day roost sites in this project area (Figure 7). In these locations, WWE biologists observed carrion in a hay meadow on which the eagles were presumed to have been feeding. Two morning and evening surveys did not indicate the location of nocturnal roost sites. The limited scope of the recent surveys is likely insufficient to assess roosting along lower Parachute Creek, but activities tend to be associated with daily Bald Eagle foraging. The Parachute Creek riparian corridor near GU 22-29 supports a large number of mature cottonwood and box-elder trees, which are suitable roosting sites (Figure 7).

Along the Colorado River Corridor, Bald Eagles prefer roosting sites in tall cottonwood trees located in close proximity to the river. The selection of roost sites close to water provides added security to the roost site and enhances opportunity for foraging. The importance of perch sites close to water has been documented in other studies where up to 89% of those perching near rivers were within 60 meters of the shoreline. In this study, deciduous trees, the most frequently observed perch sites, were typically cottonwoods located adjacent to water (USBR 1981). Jon Kindler (CDOW GIS coordinator) has indicated that point locations for roost sites are not available, but should be considered to be located at the center of NDIS mapped roost polygons (Kindler CDOW pers. comm. 2006).

In addition to the mapping Bald Eagle habitat features, the CDOW conducts an annual standardized mid-winter Bald Eagles roosting inventory in cooperation with the USFWS. These counts are typically conducted during the first two weeks of January each year. The inventories along the Colorado River have been conducted by fixed-wing aircraft with a data set as far back as 1987. Flights are conducted beginning about two miles east of Silt, Colorado, and extend to the Utah state line, a distance of approximately 100 river miles. In order to maximize the number of roosting eagles, the counts begin at approximately 4:00 p.m. and conclude at the Utah line when visibility is limited by nightfall.

The number of roosting Bald Eagles counted along the Lower Colorado River corridor between 1987 and 2006 has varied and has ranged from a high of 64 in 1993 to a low of 21 in 2003 (Figure 2). The average count is 45.5 birds, which results in about 0.46 roosting eagles per mile.

In the area assessed by this biological assessment, CDOW mid-winter Bald Eagle count information shows between three and six Bald Eagles roosting between Rifle and Parachute, Colorado, for three inventory periods (Table 1). WestWater biologist conducted roosting surveys during December 2006 to gather additional Bald Eagle use information in the project area. Theses counts show Bald Eagle numbers similar to those recorded in the previously referenced counts (Tables 2 and 3).

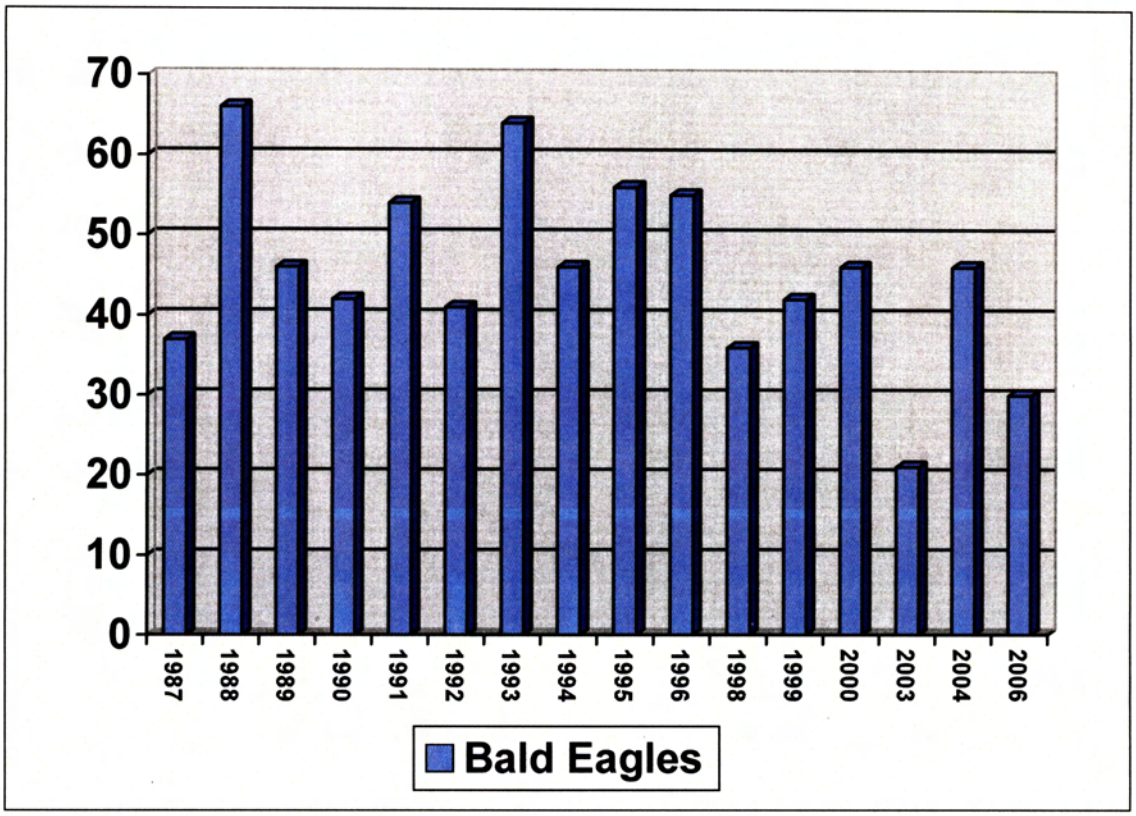

Figure 2. Number of Bald Eagles counted during the standardized midwinter counts 1997-2006 along the Colorado River from Silt to the Utah state line.

Table 1. Number of Bald Eagles counted roosting along the Colorado River from Rifle to Parachute, Colorado (CDOW unpublished reports).

Date	River Segment	Number of Bald Eagles
January 2003	Rifle to Parachute	4
January 1998	Webster Hill to Parachute	3
January 16, 1991	Rifle to Parachute	6

Table 2. Roosting Inventory--number of Bald Eagles counted along the Colorado River corridor from Webster Hill to Parachute, Colorado—December 2006.

Date	Time of day	River Segment	Number of Bald Eagles
December 13, 2006	Morning	Parachute to Webster Hill	1
December 14, 2006	Morning	Parachute to Webster Hill	2
December 15, 2006	Evening	Parachute to Webster Hill	0
December 21, 2006	Evening	Rulison Bridge to Parachute	2

Note: Webster Hill is located approximately 1.5 miles east of RWF 22-29 (Figure 3).

Table 3. Number of Bald Eagles counted along Parachute Creek by WWE personnel, December 2006.

Date	Creek Segment	Number of Bald Eagles
December 6, 2006	Parachute Creek w/i 0.5 mile radius of GV 22-29	2
December 13, 2006	Parachute Creek w/i 0.5 mile radius of GV 22-29	0
December 14, 2006	Parachute Creek w/i 0.5 mile radius of GV 22-29	3
December 15, 2006	Parachute Creek w/i 0.5 mile radius of GV 22-29	0

ESSENTIAL HABITAT

Critical habitat for the Bald Eagle has not been determined (USFWS 1983). However, essential habitat was outlined in the Northern States Bald Eagle Recovery Plan (NSBERP1983) and breeding habitat, including all potential and occupied breeding areas, alternate, and infrequently used areas should be considered essential habitat. The following annotated general guidelines for essential habitat were taken from the NSBERP:

Breeding Habitat

1. Essential habitat at each nest site is generally considered to encompass a minimum of 640 acres including aquatic and terrestrial habitat used for foraging and essential features of air, water, land, and solitude necessary for the breeding pair at the site. Where sufficient information exists to show that 640 acres probably are not sufficient, a larger area should be considered essential; likewise, if it can be documented clearly that less than 640 acres may suffice small tracts may be considered.
2. Essential habitat should be contiguous unless feeding areas or other essential habitat components are relatively far removed from the nesting area.
3. Essential habitat may include private as well as public land.
4. Essential habitat designations associated with breeding areas that become abandoned should remain in effect provided the sites remain suitable for reoccupation. If the breeding areas are rendered permanently unsuitable, the essential habitat designation may be removed. Essential habitat associated with unoccupied and potential breeding areas is difficult to determine. This is best done by considering areas that are similar to known occupied sites and by consulting with knowledgeable persons.

Wintering Habitat

Survival of individual Bald Eagles, particularly those in their first year of life, probably depends heavily on conditions they encounter during the wintering period. The physiological condition of adults at the beginning of each breeding season, an important factor influencing reproductive success, also is affected by how well their energy demands are met in wintering areas. Thus, the survival and recovery of nesting populations in the Region depends in part on the eagles having suitable locations to use throughout the wintering period each year.

Assuming that the presence of birds indicates the presence of required habitat, wintering areas in the Northern States Region that meet any of the following criteria should be considered essential habitats.

1. Locations used annually for two weeks or longer by adult or immature wintering eagles known (or strongly suspected) to be from nearby breeding area. Two weeks, which is roughly 8 to 12% of the wintering period for most migrants was chosen somewhat arbitrarily as the minimum period a site must be occupied annually to be considered an essential habitat. Most essential habitats probably are used longer than this while relatively unimportant areas (except for locations used during severe weather conditions) are used for shorter time periods.
2. Locations used annually by 15 or more eagles for two weeks or longer in Colorado, Illinois, Kansas, Missouri, Nebraska, Oklahoma, South Dakota, Utah, or along the Mississippi River.
3. Locations used by Bald Eagles during periods of extremely harsh weather when suitable feeding areas and night roost sites are limited in number (The minimum two week period of use does not apply to this criterion).

EFFECT ANALYSIS

Recently, the FWS has proposed a definition of "disturb"' which is currently described in the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c). This new definition described in the Draft National Bald Eagle Management Guidelines (USFWS 2006) is as follows: "To agitate or bother a bald or golden eagle to the degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, causing injury, death, or nest abandonment." In addition to immediate impacts, this definition encompasses impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits and causes injury, death, or nest abandonment. This definition is consistent with how "disturb" has been interpreted in the past by the Service and other Federal and State wildlife and land management agencies.

The following discussion applies to factors that may affect Bald Eagles at all of the well pads addressed in this biological assessment.

Potential Impact of Natural Gas Development: Noise and Human Activity

Determining the effect of noise on wildlife is complicated because responses vary between species and between individuals of a single population. These variable responses are due to the characteristics of the noise and its duration, the life history characteristics of the species, habitat type, season, activity at the time of exposure, sex and age of the eagle, level of previous exposure, and whether other physical stresses such as drought are occurring around the time of exposure (Busnel 1978).

Other factors affecting Bald Eagles include the proximity, frequency, magnitude, and duration of activities and noise, along with the presence or absence of vegetative buffers and topographic features determine how an activity affects Bald Eagles. Vegetation surrounding a nest tree or concentration area may serve to buffer, conceal, or muffle human activities from the eagle's visual or auditory awareness. Therefore, site-specific factors can affect the likelihood and degree of impacts to the eagles. On-site evaluations of the terrain, existing vegetation, existing human

activities and/or development, sight lines from the nest, and observed behaviors of the eagles in that particular locality will help to determine whether disturbance is likely to occur on a case-by-case basis.

The U.S. Army Aberdeen Proving Ground supports one of the largest Bald Eagle concentrations on the Northern Chesapeake Bay. The testing of large caliber weapons and detonation of large explosive charges at U.S. Army Aberdeen Proving Ground is creating significant noise and producing concerns on the potential effects on Bald Eagles. The population using Aberdeen consists of approximately 15 nesting pairs and up to 100 wintering or non-breeding residents. Systematic observations on potential influence of noise on Bald Eagles were made from November 1993 through December 1995. No response was detected in a high percentage of nesting and roosting eagles exposed to numerous types of noise at varying levels of intensity (Buehler et al. 1987).

A literature review on how noise impacts raptors (Knight and Gutzwiller 1995) found that raptor responses vary and can include attraction, tolerance, or aversion to the noise. Effects of noise on Bald Eagles from residential and recreational activities have not been thoroughly studied. Noise produced by pile driving was considered inconsequential to eagle behavior beyond 1,300 ft in the San Juan Islands (Bottorff et al. 1987).

Grub and King (1991) looked at the effect of both pedestrian activity and aircraft overflights on breeding Bald Eagles. They report that pedestrians were more disturbing. The levels of noise are not given, but this demonstrates that noise alone is not the only factor causing disturbance.

Stalmaster and Newman (1978) studied the effect of human activities on wintering Bald Eagles and report that normal activities such as boating and fishing did not disturb the birds. Normal sounds from these activities are reported as not having an effect. However, gunshots did disturb them causing flight (escape behavior). This study does not give the levels of noise encountered or the effects of greater levels of noise.

Watson and Pierce (1998) found that pedestrian activity was the most common human activity within 300 ft of 37 eagle nests in western Washington. Along with aircraft, pedestrian activities cause the highest active disturbance responses in Bald Eagles (Stinson et al. 2001). Research from across the United States shows that pedestrian activities tend to affect eagle behavior at distances up to 3,250 ft from nests (Fraser et al. 1985; Grub and King 1991; Grubb et al. 1992; Steidl 1994). Watson and Pierce (1998) found that pedestrian activity increased eagles' flush and agitation responses at < 394 ft and reduced incubation time at 656 ft. Similarly, vehicles and pedestrians elicited the highest responses from eagles in Michigan, although aircraft- and aquatic-related activities were more common (Grubb et al. 1992).

Many studies have characterized nest site selection for Bald Eagles and identified the detrimental effects of habitat alteration on eagle nesting (Juenemann 1973; Andrew and Mosher 1982; Anthony and Isaacs 1989; Buehler et al. 1991). Fewer studies, however, have defined specific distances to which nesting Bald Eagles responded to habitat alterations associated with residential development, and their conclusions are varied. Grubb (1980) and Parson (1992) reported average distances of 390 ft and 305 ft respectively, between productive Bald Eagle nests

and habitat alterations in rural-residential Washington. Grubb (1980) also reported an average distance of 240 ft between unproductive Bald Eagle nests and permanent human activity.

Pad PA 21-2

Effects

The well pad and drilling infrastructure will not directly affect any essential Bald Eagle habitat. No roosting trees will be eliminated by cutting or bulldozing. Construction and operation of the pad will not influence hydrologic regimes, which might contribute to cottonwood die-off due to changes in water availability.

Disturbance associated with noise and human activities generated during construction and drilling would have the greatest potential for affecting Bald Eagles (see above noise and human activity discussion). The drill pad is located above the Colorado River flood plain, but the site is not high enough to shield Bald Eagle roost sites from human activities. The density of cottonwood trees in the area is not likely sufficient to act as a noise buffers for roosting Bald Eagles.

The well site is currently being constructed by Williams for drilling and production of natural gas on private land and minerals. During recent surveys by WWE, no Bald Eagles have been observed roosting in CDOW identified roost sites within 0.5 miles of the pad. However, Bald Eagles have been observed roosting 0.62, 0.88, and 2.95 miles from the pad location.

Williams is currently planning on drilling both fee wells and federal wells from this pad. Activity at the pad site will decrease after drilling and completion is accomplished. Truck traffic will be limited to the collection of condensate and produced water. Human activity will focus around these collection facilities and levels will depend on production of these products from the wells.

No nest sites are found within 0.5 miles of the well pad. The closest active nest site is located approximately 8 miles east of the project area along the Colorado River east of Webster Hill.

An assessment of distance from the center of the well pad to potential roost sites was conducted to provide background information useful for effect analysis (Figure 5). Distances are not provided to all potential roost sites; those shown are representative of likely preferred roost. In Figure 5, preferred roost sites (those located within 180 ft of the river) are located between 1,172 and 1,694 ft from the center of well pad. As discussed earlier in this report, noise and human activity buffer zones are equivocal, but preferred roost site in the area are likely far enough from the pad such that indirect effects due to noise affects are likely minimized.

As discussed earlier (page 6), Bald Eagle roosting habitat along the Colorado River corridor consists of numerous cottonwood galleries, small group of trees and individual trees. Currently, drilling activity is planned to occur within 0.5 miles of four CDOW mapped roost sites (Figure 3 and 4). Currently, natural gas drilling is occurring at one well pad located approximately 0.5 miles west of PA 21-2. In addition to this pad, Williams has constructed an access road, beginning at PA 21-2, paralleling the Colorado River to the west immediately north of Garfield County road 309 (Parachute to Rulison Road). This access road provides a vehicular service

corridor to other existing wells for the collection of condensate and produced water, which will be trucked from the site.

During December 2006 surveys conducted by WWE, Red-tailed Hawks were observed roosting (Figure 5) within 800 ft of an active natural gas drill site located about 0.4 miles west of PA 21-2. Red-tailed Hawks may be more tolerant and therefore less affected by noise and human disturbance than Bald Eagles; however, their presence provides evidence of raptor tolerance to human activities in this project area.

Cumulative Effects

Natural gas development and production is occurring throughout the Lower Colorado River, particularly in the Debeque to Rifle area. The cumulative effects on Bald Eagle distribution, abundance and habitat use has not been studied and no negative effects have been documented. There are currently two other drill rigs actively working within one mile of PA 331-2; one is within 0.2 miles of the river corridor, the other is located approximately 0.5 miles from the river bank.

Extensive modifications to the Colorado River corridor flood plain are not occurring due to natural gas development or other activities affecting suitable Bald Eagle nesting and roosting habitat. The development of natural gas wells occurs in phases, progressing through pre-development, pad construction, drilling and completion, and operation and maintenance. After site reclamation, gas well operation and maintenance activities are the resultant level of disturbance affecting the natural environment above pre-project conditions.

In the riparian corridor east of Rifle, Colorado, gravel-mining operations have increased in the last 5 years. Gravel mining is not extensively occurring in the area of concern for this biological assessment.

Determination

Determination of effect of action(s), as described, on Bald Eagles:

- □ No Effect
- ■ **May Affect, Not Likely to Adversely Affect**
- □ May Affect, Likely to Adversely Affect

Rationale:

- There are a minimum of 10 mapped alternative cottonwood galleries containing multiple potential roost sites upstream and downstream of the project area within a four-mile radius of well pad PA 21-2. There are additional roost sites within this same area.
- The number of Bald Eagles potentially affected by displacement to alternate roost sites is most likely between one and three birds. This represents approximately 2 to 6 percent of the wintering Bald Eagles in the lower Colorado River corridor. Viewed on a wintering population basis, this level of displacement to alternate roost sites is unlikely to have a measurable negative affect on the wintering Bald Eagles in the Lower Colorado River Valley.

- No Bald Eagle nests have been found or are known to occur in the project area. Recent surveys by WWE have not detected any prenuptial activities suggesting Bald Eagle nesting within five miles of the project area.
- During recent surveys conducted by CDOW, waterfowl (ducks and Canada geese) were observed occupying habitat along the Colorado River corridor near operational drilling rigs. It is unlikely that waterfowl habitat selection is being adversely affected by displacement at current levels of drilling disturbance, thus providing eagles with potential prey species and reducing the likelihood of displacement due to lack of food items.
- Water quality and aquatic habitat are unlikely to be affected by pad construction. Therefore, resident existing fish populations, an alternative prey base for Bald Eagles, should be unaffected by project development.
- Circular buffer zones that the FWS has recommended for the protection of Bald Eagles can reasonably be applied to the protection of Bald Eagles roost sites. According to the Northern States Bald Eagle Recovery Plan (FWS 1983), a two-zone management system around nest sites is suggested as a practical way to protect Bald Eagles and the habitats they require. The primary zone is the area directly surrounding an eagle nest and the secondary zone is the area directly surrounding the primary zone. The recommended primary buffer zone is a minimum of 330 ft from the nest, to be extended up to ¼ - ½ mile where there is extremely sparse timber or other unique situations. Surrounding this, the recommended secondary buffer zone should extend an additional 330 ft from the edge of the primary zone, to be expanded up to ½ mile when nesting occurs in sparse stands of timber, treeless areas, or where activities would occur within view of the nest.
- Examples of preferred roost sites (those located within 180 ft of the river) are located between 1,172 and 1,694 ft from the center of the well pad. These roost sites are located at distances greater than those recommended by the USFWS for nesting as discussed in the previous statement.
- Based on the rationale presented in this section, any level of disturbance is unlikely to approach the level such that it would "disturb" Bald Eagles. Disturb, according to the FWS (Draft National Bald Eagle Management Guidelines 2006), means it is unlikely to interfere with or interrupt normal breeding, feeding, or sheltering habits that would approach the disturbance level causing injury, death, or nest abandonment.

Pad PA 331-2

Effects

This pad is located approximately 0.26 miles east of PA 21-2. Effects to Bald Eagles due to development of this pad are similar, but likely less than those affects attributed to pad PA 21-2.

The drill pad is located south of the Colorado River flood plain, but the site is situated about 200 vertical feet above the Colorado River on a bench. This terrain differential should decrease ground-level disturbance at the pad to nearby roost sites. The upper portion of the drill rig derrick would likely be visible to Bald Eagles from nearby roost sites.

The well pad and drilling infrastructure will not directly affect any essential Bald Eagle habitat. No roosting trees will be eliminated by cutting or bulldozing. Construction and operation of the

pad will not influence hydrologic regimes, which might contribute to cottonwood die-off due to changes in water availability.

No nest sites are found within 0.5 miles of the well pad. The closest active nest site is located approximately 8 miles east of the project area along the Colorado River east of Webster Hill.

Disturbance associated with noise and human activities generated during construction and drilling would have the greatest potential for affecting Bald Eagles (see above noise and human activity discussion). The drill pad is located above the Colorado River flood plain, but the site is not high enough to completely shield Bald Eagle roost sites from human activities. The density of cottonwood trees in the area is not likely sufficient to act as a noise buffers for roosting Bald Eagles.

During recent surveys by WWE, no Bald Eagles have been observed roosting in CDOW identified roost sites within 0.5 miles of the pad. Bald Eagles have been observed roosting 0.47, 0.79 and 3.3 miles from the pad location.

Williams is currently planning on drilling both fee wells and federal wells from this pad. Activity at the pad site will decrease after drilling and completion is accomplished. Truck traffic will be limited to the collection of condensate and produced water. Human activity will focus around these collection facilities and levels will depend on production of these products from the wells.

An assessment of distance from the center of the well pad to potential roost sites was conducted to provide background information useful for effect analysis (Figure 5). Distances are not provided to all potential roost sites; those shown are representative of likely preferred roosts. Preferred roost sites (those located within 180 ft of the river) are located between 2,206 and 2,185 ft from the center of well pad. As discussed earlier in this report, noise and human activity buffer zones are equivocal, but preferred roost sites in the area are far enough from the pad such that indirect effects due to noise affects are likely minimized.

As discussed earlier (page 6), Bald Eagle roosting habitat along the Colorado River corridor consists of numerous cottonwood galleries, small group of trees and individual trees. Currently, drilling activity is planned to occur within 0.5 miles of four CDOW mapped roost sites (Figures 3 and 4). At the date of this report, natural gas drilling is occurring at one well pad located approximately 0.67 miles west of PA 331-2 and one pad located approximately 0.68 miles to the east. In addition to this pad, Williams has constructed an access road, beginning at PA 21-2, and running east, north of Hoaglands hay meadows and then turning south to the PA 331-2 pad (Appendix A, Page 3). After completion, water will be piped to a tank farm located at PA 21-2 and condensate will be trucked from the site.

During a surveys conducted by WWE in December 2006, Red-tailed Hawks were observed (Figure 5) roosting within 800 ft of active natural gas drill site located about 0.4 miles west of PA 21-2. Red-tailed Hawks may be more tolerant and therefore less affected by noise and human disturbance than Bald Eagles; however, their presence provides evidence of raptor tolerance to human activities in this project area.

Cumulative Effects

Natural gas development and production is occurring throughout the Lower Colorado River corridor, particularly in the Debeque to Rifle area. The cumulative effects on Bald Eagle distribution, abundance and habitat use has not been studied and no negative effects have been documented. There are currently two other drill rigs actively working within one mile of PA 331-2; one is within 0.2 miles of the river corridor, the other is located approximately 0.5 miles from the river bank.

Extensive modifications to the Colorado River corridor flood plain are not occurring due to natural gas development or other activities affecting suitable Bald Eagle nesting and roosting habitat. The development of natural gas wells occurs in phases, progressing through pre-development, pad construction, drilling/completion, and post-drilling operation and maintenance. After site reclamation, gas well operation and maintenance activities are the on-going level of disturbance affecting the natural environment above pre-project conditions.

In the riparian corridor east of Rifle, Colorado, gravel-mining operations have increased in the last five years. Gravel mining is not extensively occurring in the area of concern for this biological assessment.

Determination

Determination of effect of action(s), as described, on Bald Eagles:

- □ No Effect
- ■ **May Affect, Not Likely to Adversely Affect**
- □ May Affect, Likely to Adversely Affect

Rationale:

- There are a minimum of 10 mapped alternative cottonwood galleries and individual trees constituting multiple potential roost sites upstream and downstream of the project area within a four-mile radius of well pad PA 331-2. There are additional roost sites within this same area.
- The number of Bald Eagles potentially affected by displacement to alternate roost sites is most likely between one and three birds. This represents approximately 2 to 6 percent of the wintering Bald Eagles in the lower Colorado River corridor. Since PA 331-2 and PA 21-2 are located close to each other, the number of potentially affected Bald Eagles is should not be considered to be additive; only one to three eagles may be affected due to both well pads.
- No Bald Eagle nests have been found or are known to occur in the project area. Recent surveys by WWE have not detected any prenuptial activities suggesting Bald Eagle nesting in the project area.
- During recent surveys conducted by CDOW, waterfowl (ducks and Canada geese) were observed occupying habitat along the Colorado River corridor near operational drilling rigs. It is unlikely that waterfowl habitat selection is being adversely affected by displacement at current levels of drilling disturbance, thus providing eagles with potential prey species and reducing the likelihood of displacement.

- Water quality and aquatic habitat are unlikely to be affected by pad construction. Therefore, resident existing fish populations, an alternative prey base for Bald Eagles, should be unaffected by project development.
- Circular buffer zones that the FWS has recommended for the protection of Bald Eagles can reasonably be applied to the protection of Bald Eagles roost sites. According to the Northern States Bald Eagle Recovery Plan (FWS 1983), a two-zone management system around nest sites is suggested as a practical way to protect Bald Eagles and the habitats they require. The primary zone is the area directly surrounding an eagle nest and the secondary zone is the area directly surrounding the primary zone. The recommended primary buffer zone is a minimum of 330 ft from the nest, to be extended up to ¼ - ½ mile where there is extremely sparse timber or other unique situations. Surrounding this, the recommended secondary buffer zone should extend an additional 330 ft from the edge of the primary zone, to be expanded up to ½ mile when nesting occurs in sparse stands of timber, treeless areas, or where activities would occur within view of the nest.
- Examples of preferred roost sites (those located within 180 ft of the river) are located between 2,206 and 2,185 ft from the center of the well pad. These roost sites are located at distances greater than those recommended by the USFWS for nesting as discussed in the previous statement.
- Based on the rationale presented in this section, any level of disturbance is unlikely to approach the level such that it would "disturb" Bald Eagles. Disturb, according to the FWS (Draft National Bald Eagle Management Guidelines 2006), means it is unlikely to interfere with or interrupt normal breeding, feeding, or sheltering habits that would approach the disturbance level causing injury, death, or nest abandonment.

Pad RWF 22-29

Effects

Drilling will occur on an existing pad, which will be upgraded to accommodate new equipment. No roosting trees will be eliminated by cutting or bulldozing. Construction and operation of the pad will not influence hydrologic regimes, which might contribute to cottonwood die-off due to changes in water availability. No new roads will be constructed.

The well pad and drilling infrastructure is within a 0.5 mile radius of a CDOW mapped inactive Bald Eagle nest site (Figure 6). Two mapped roosting sites are also within 0.5 miles of the drill pad.

The CDOW has not detected any nesting activity at this nest site within the last five years. Recent surveys conducted by WWE biologists have not documented the presence of Bald Eagle activities which would suggest courtship and nest building behavior. The cottonwood tree in which the formerly active nest site may be found currently contains five Great Blue Heron nests. One heron nest site is larger than the others and it is assumed that this site may be the formerly active Bald Eagle nest. However, the nest is small (approximately 24" in diameter), and does not approach typical Bald Eagle diameter, size and structure.

Disturbance associated with noise and human activities generated during construction and drilling would have the greatest potential for affecting Bald Eagles. The drill pad is located

north of the Colorado River flood plain and near I-70 and the Union Pacific railroad tracks. I-70 vehicular traffic and railroad noise likely are similar in nature and perhaps more intense than natural gas drilling and production. The density of cottonwood trees in the area may provide screening for preferred roosting sites in this area.

An assessment of distance from the center of the well pad to potential roost sites was conducted to provide background information useful for effect analysis (Figure 6). Distances are not provided to all potential roost sites; those shown are representative of likely preferred roosts. Preferred roost sites (those located within 180 ft of the river) are located between 1,596 and 1,769 ft from the center of the well pad. As discussed earlier in this report, noise and human activity buffer zones are equivocal, but preferred roost sites in the area are far enough was from the pad such that indirect effect are likely minimized.

Cumulative Effects

Natural gas development and production is occurring throughout the Lower Colorado River, particularly in the Debeque to Rifle area. The cumulative effects on Bald Eagle distribution, abundance and habitat use has not been studied and no negative effects have been documented. There are currently no other drill rigs actively working within one mile of RWF 22-29 along the river corridor.

Extensive modifications to the Colorado River corridor flood plain are not occurring due to natural gas development or other activities affecting suitable Bald Eagle nesting and roosting habitat. The development of natural gas wells occurs in phases, progressing through pre-development, pad construction, drilling/completion, and post-drilling operation and maintenance. After site reclamation, gas well operation and maintenance activities are the on-going level of disturbance affecting the natural environment above pre-project conditions.

In the riparian corridor east of Rifle, Colorado, gravel-mining operations have increased in the last five years. Gravel mining is not extensively occurring in the area of concern for this biological assessment.

Determination

Determination of effect of action(s), as described, on Bald Eagles:

- □ No Effect
- ■ **May Affect, Not Likely to Adversely Affect**
- □ May Affect, Likely to Adversely Affect

Rationale:

- There are seven alternative mapped roost sites within a four-mile radius of the project location. In addition to mapped roost sites, there are additional unmapped cottonwood galleries and small groups or individual trees suitable for roosting within this four-mile radius.
- The number of Bald Eagles potentially affected is most likely between 1 and 3 birds. This represents approximately 2 to 6 percent, respectively of the wintering Bald Eagles in the lower Colorado River corridor. Viewed on a wintering population basis, this level of displacement to alternate roost sites is

unlikely to have a measurable negative affect on the wintering Bald Eagle population in the Lower Colorado River Valley.

- During recent surveys conducted by CDOW, waterfowl (ducks and Canada geese) were observed occupying habitat along the Colorado River corridor near operational drilling rigs. It is unlikely that waterfowl habitat selection is being adversely affected by displacement at current levels of drilling disturbance, thus providing eagles with potential prey species and reducing the likelihood of displacement.
- Water quality and aquatic habitat are unlikely to be affected by pad construction. Therefore, resident existing fish populations, an alternative prey base for Bald Eagles, should be unaffected by project development.
- Circular buffer zones that the FWS has recommended for the protection of Bald Eagles can reasonably be applied to the protection of Bald Eagles roost sites. According to the Northern States Bald Eagle Recovery Plan (FWS 1983), a two-zone management system around nest sites is suggested as a practical way to protect Bald Eagles and the habitats they require. The primary zone is the area directly surrounding an eagle nest and the secondary zone is the area directly surrounding the primary zone. The recommended primary buffer zone is a minimum of 330 ft from the nest, to be extended up to ¼ - ½ mile where there is extremely sparse timber or other unique situations. Surrounding this, the recommended secondary buffer zone should extend an additional 330 ft from the edge of the primary zone, to be expanded up to ½ mile when nesting occurs in sparse stands of timber, treeless areas, or where activities would occur within view of the nest.
- The center of the well pad is located approximately 1,770 ft from the mapped inactive Bald Eagle nest site. At a distance, the effects of disturbance are greatly reduced
- Examples of preferred roost sites (those located within 180 ft of the river) are located between 1,596 and 1,769 ft from the center of the well pad. These roost sites are located at distances greater than those recommended by the USFWS for nesting as discussed in the previous statement in this section.
- Based on the rationale presented in this section, any level of disturbance is unlikely to approach the level such that it would "disturb" Bald Eagles. Disturb, according to the FWS (Draft National Bald Eagle Management Guidelines 2006), means it is unlikely to interfere with or interrupt normal breeding, feeding, or sheltering habits that would approach the disturbance level causing injury, death, or nest abandonment.
- Current level of vehicular traffic on I-70 and Union Pacific railroad traffic would tend to reduce mask noise affects associated with natural gas drilling on this site.

Pad GV 22-29

Effects

The well pad and drilling infrastructure will not directly affect any essential Bald Eagle habitat. No roosting trees will be eliminated by cutting or bulldozing. Construction and operation of the pad will not influence hydrologic regimes, which might contribute to cottonwood/box-elder die-off due to changes in water availability. No new roads will be constructed to the site.

No nest sites have been documented in the lower Parachute Creek drainage. The closest active nest site is located approximately 10 miles east of the project area on the Colorado River west of Rifle. Recent surveys conducted by WWE biologists show no sign of prenuptial activity at this site.

Disturbance associated with noise and human activities generated during construction and drilling would have the greatest potential for affecting Bald Eagles. The drill pad is located immediately west of Parachute Creek near the toe of small bluffs and ridges; the site is not high enough to shield potential Bald Eagle roost sites from human activities (Figure 7). The density of cottonwood trees in the immediate area of the pad is not likely sufficient to act as a noise buffers for roosting sites.

An assessment of distance from the center of the well pad to known and potential roost sites was conducted to provide background information useful for effect analysis (Figure 7). Preferred roost sites (those located within 180 ft of Parachute Creek) are located between 414 and 768 ft the center of well pad. As discussed earlier in this report, noise and human activity buffer zones are equivocal, but potential suitable roost sites directly east of the well pad may be affected by drilling activities.

Cumulative Effects

Natural gas development and production is occurring throughout the Lower Colorado River, particularly in the Debeque to Rifle area. The cumulative effects on Bald Eagle distribution, abundance and habitat use has not been studied and no negative effects have been detected for this species. Extensive degradation to the riparian vegetation (roost sites) along the Parachute Creek corridor are not occurring due to natural gas development or other activities affecting suitable Bald Eagle nesting and roosting habitat. No wells are currently being drilled with 0.5 miles of this site.

Historically, land use in the Parachute Creek drainage has been dominated by livestock grazing and hay production. These agricultural activities continue with disruptions associated with natural gas production occurring during drilling and then less intense during ongoing operation and maintenance. Williams as well as other operators in the Parachute Creek area are addressing mitigation of wildlife affects through the redevelopment of wildlife habitat during reclamation practices and off-site enhancement projects. Cumulative effects are being further offset by advances in 3-phase central collection of gas, condensate and produced water which eliminates the need for collection of condensate and produced water by truck.

The development of natural gas wells occurs in phases, progressing through pre-development, pad construction, drilling/completion, and post-drilling operation and maintenance. After site reclamation, gas well operation and maintenance activities are the on-going level of disturbance affecting the natural environment above pre-project conditions.

Determination

Determination of effect of action(s), as described, on Bald Eagles:

- □ No Effect
- ■ **May Affect, Not Likely to Adversely Affect**
- □ May Affect, Likely to Adversely Affect

Rationale:

- Within 0.5 miles upstream and downstream of the well pad, there are approximately nine large cottonwood/box-elder galleries, which contain multiple alternative roost sites for foraging eagles. Outside of a 0.5 mile radius, numerous additional alternative roost sites are available to Bald Eagles.
- The number of Bald Eagles potentially affected is unknown, but based on recent WWE surveys, could be between one and three birds. Since there are no known nocturnal roost sites in the project area, potential effects to Bald Eagles would include influences to the selection of day roost sites used during foraging activities. Since there are multiple roost sites, affects to eagles are unlikely.
- No Bald Eagle nests have been found or are known to occur in the lower Parachute Creek drainage. No prenuptial activities have been observed during recent WWE surveys.
- Examples of preferred roost sites (those located within 180 ft of the river) are located between 414 and 768 ft from the center of the well pad. The closer roost site is located at a distance less than those recommended by the USFWS in nesting guidelines as discussed in previous sections.
- Based on the rationale presented in this section, any level of disturbance is unlikely to approach the level such that it would "disturb" Bald Eagles. Disturb, according to the FWS (Draft National Bald Eagle Management Guidelines 2006), means it is unlikely to interfere with or interrupt normal breeding, feeding, or sheltering habits that would approach the disturbance level causing injury, death, or nest abandonment.

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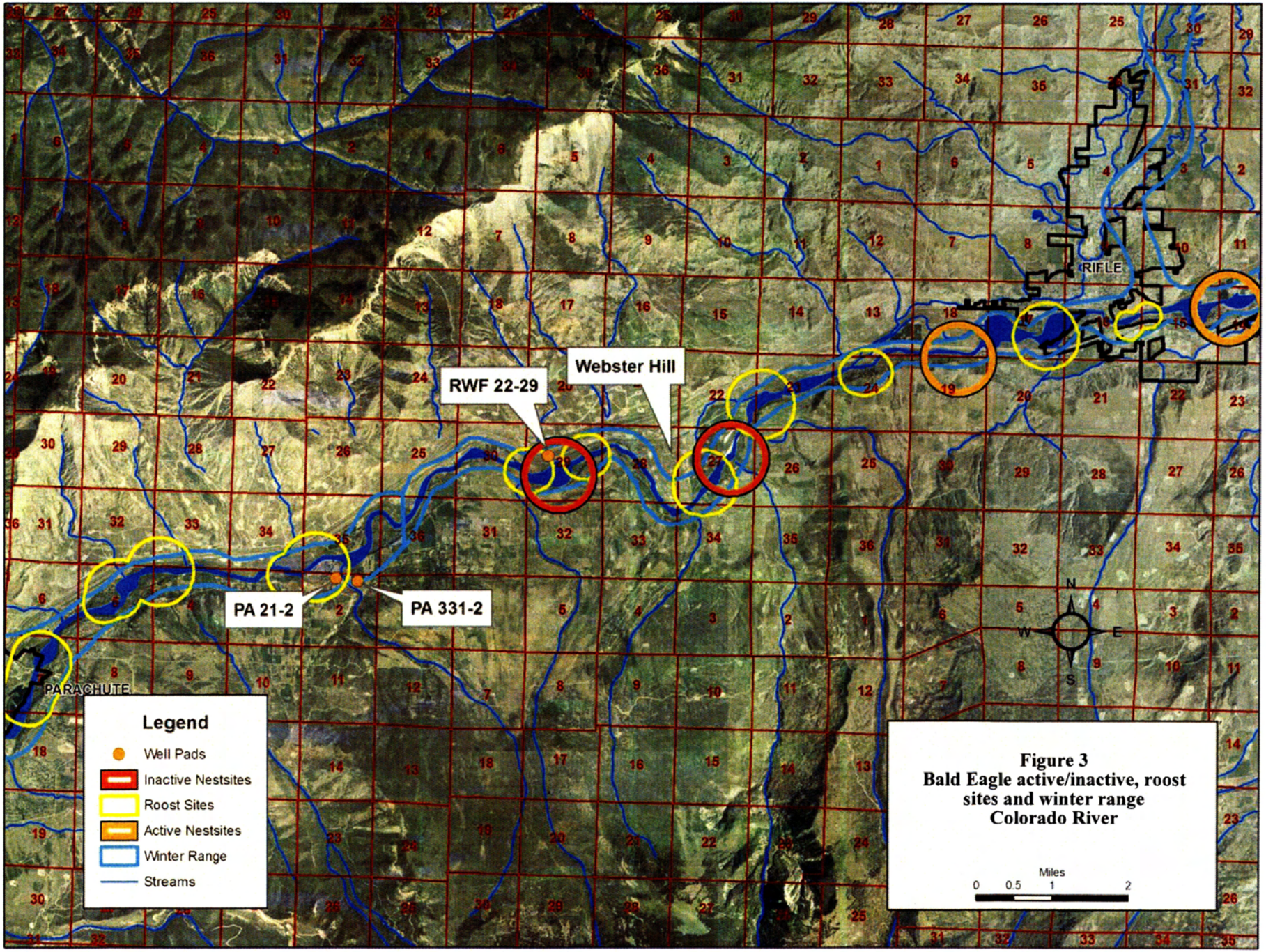


Figure 3
Bald Eagle active/inactive, roost sites and winter range
Colorado River

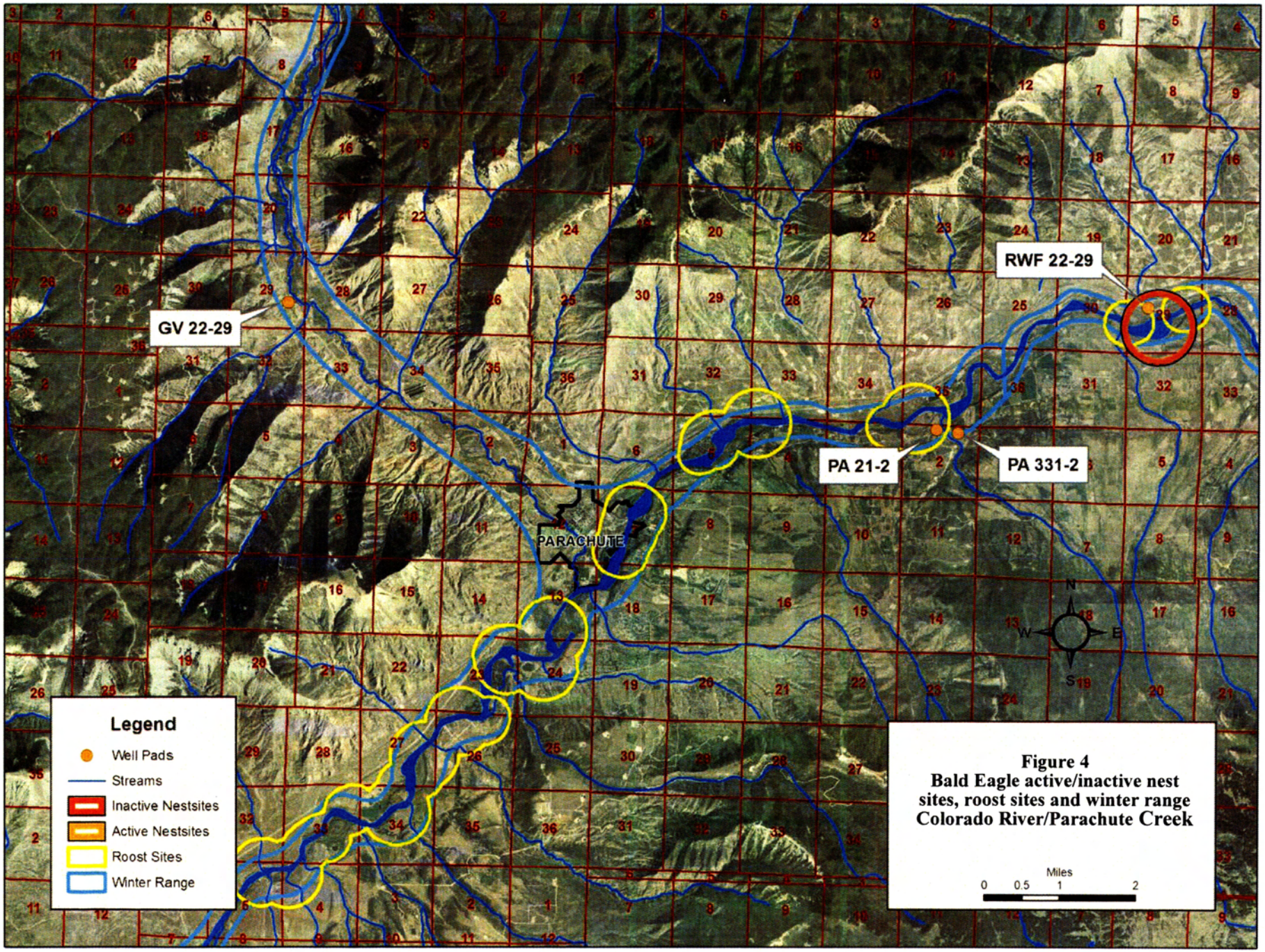


Figure 4
Bald Eagle active/inactive nest sites, roost sites and winter range Colorado River/Parachute Creek

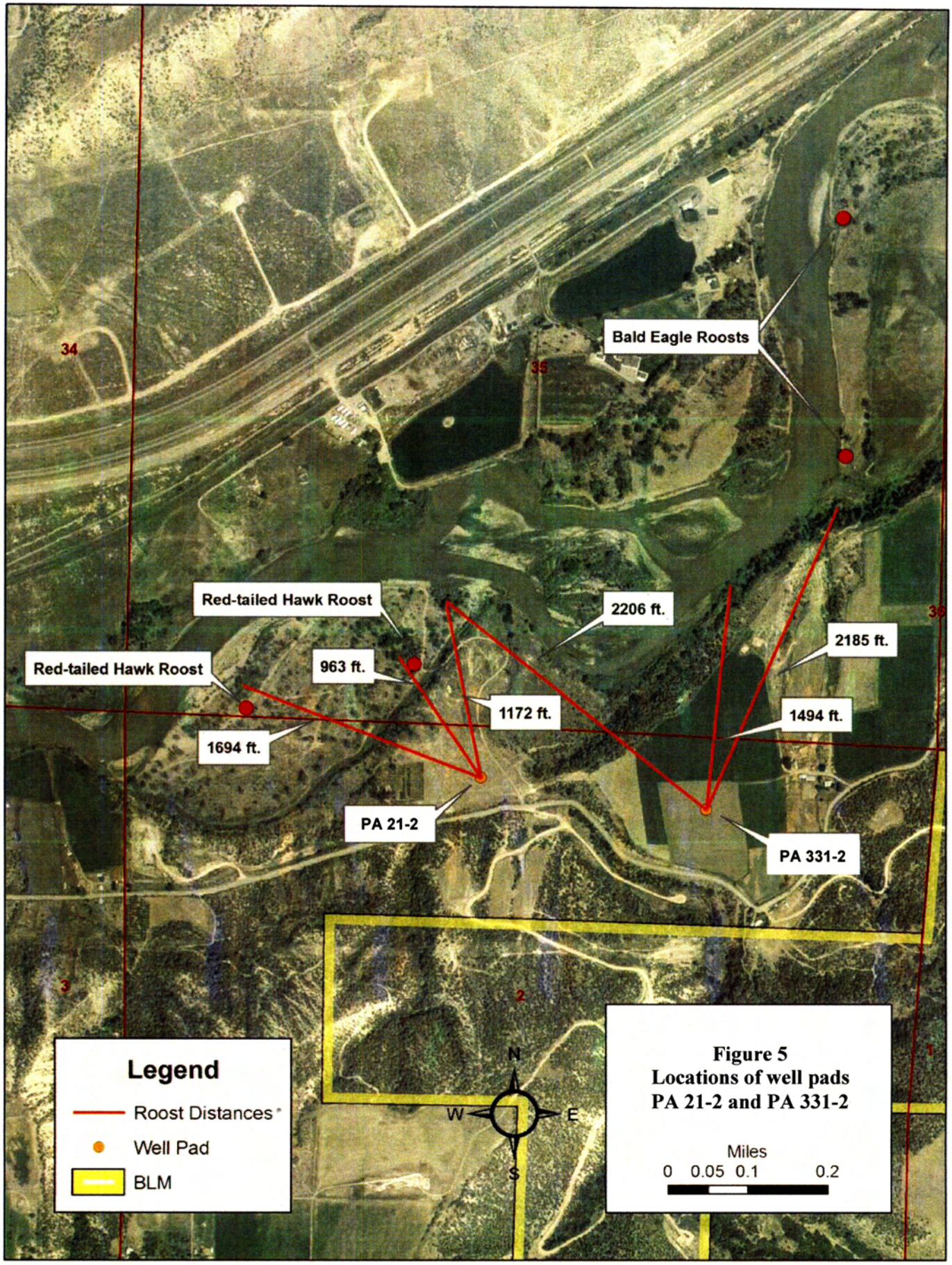


Figure 5
Locations of well pads
PA 21-2 and PA 331-2

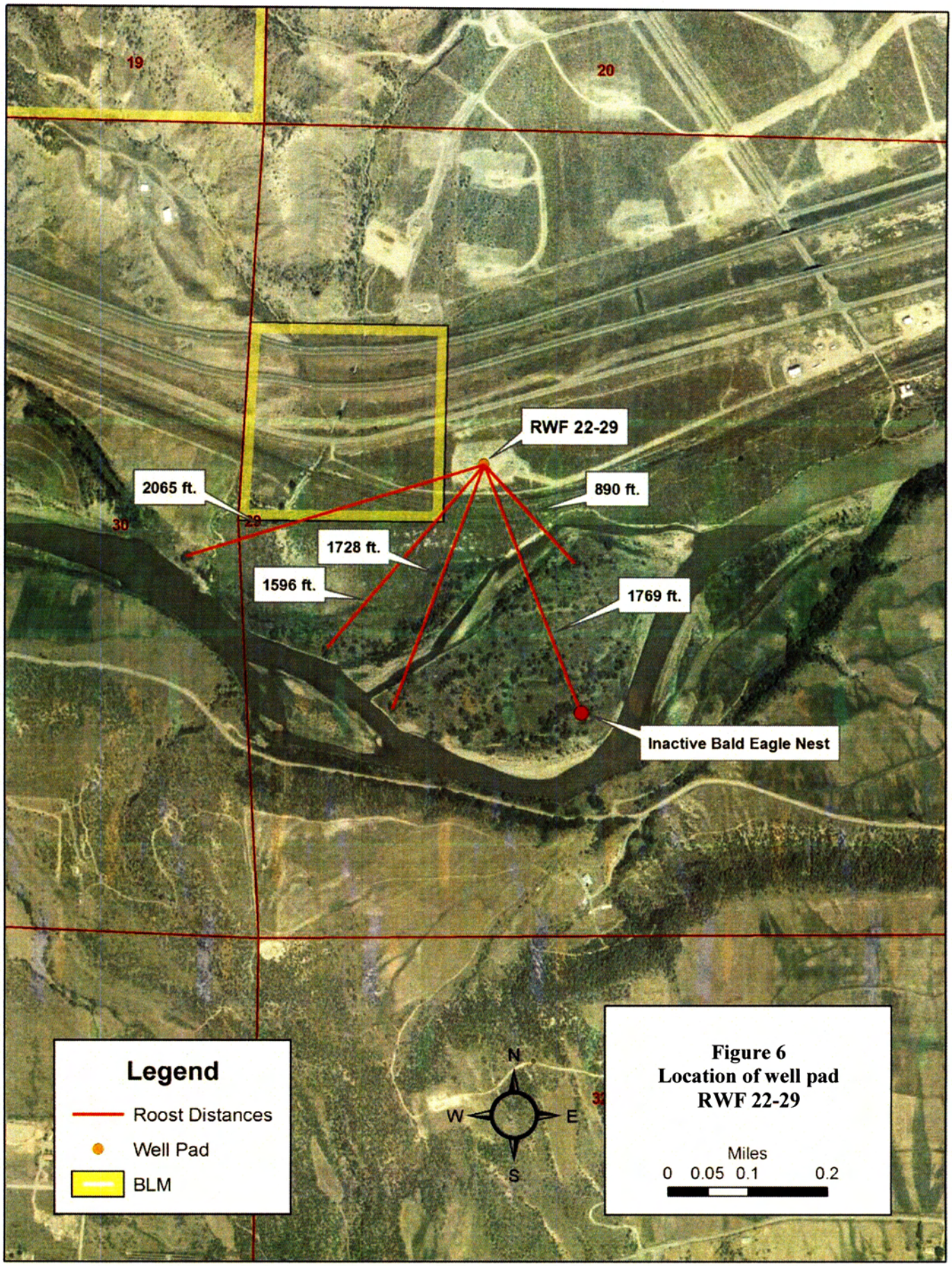


Figure 6
Location of well pad
RWF 22-29

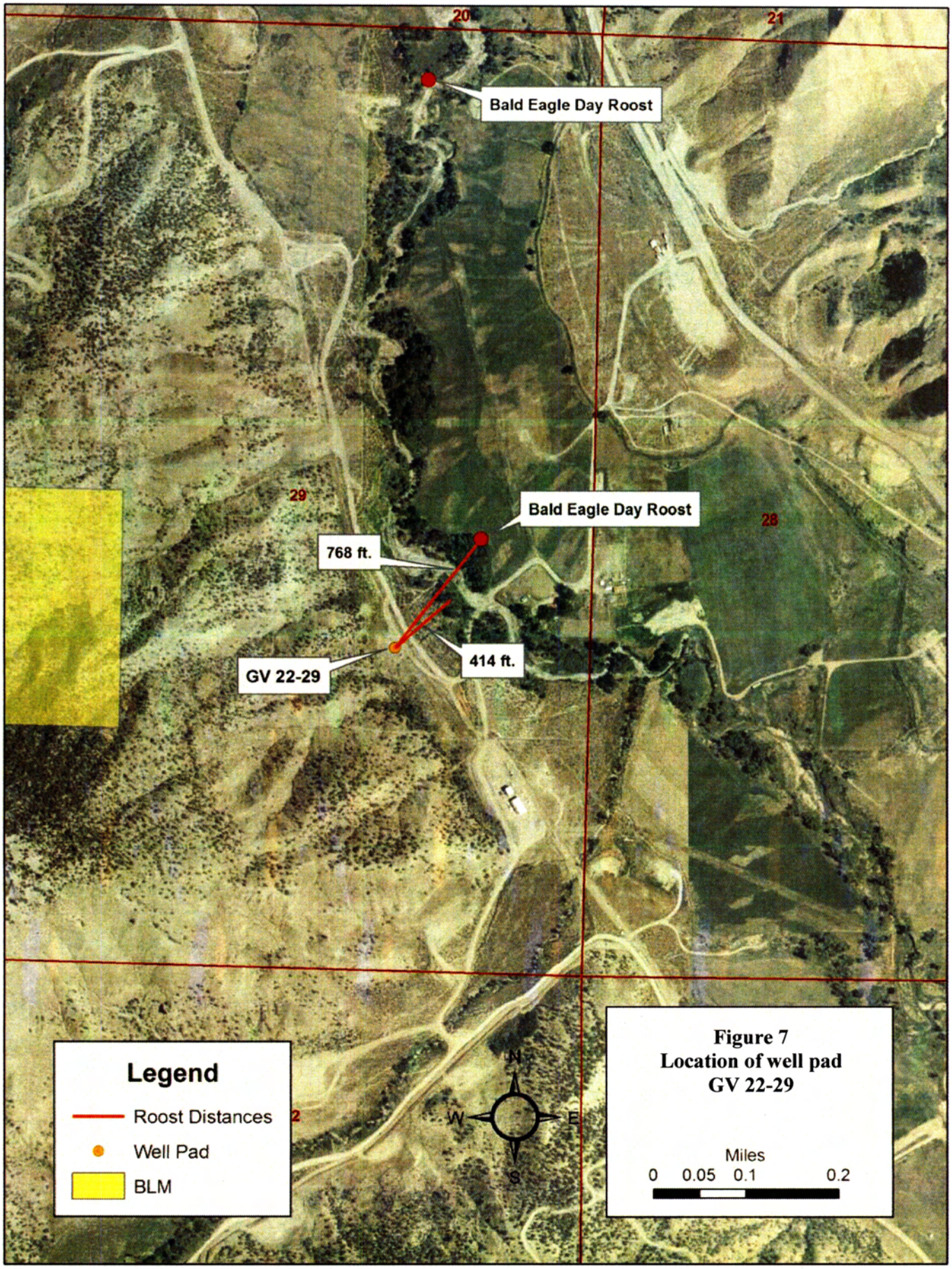
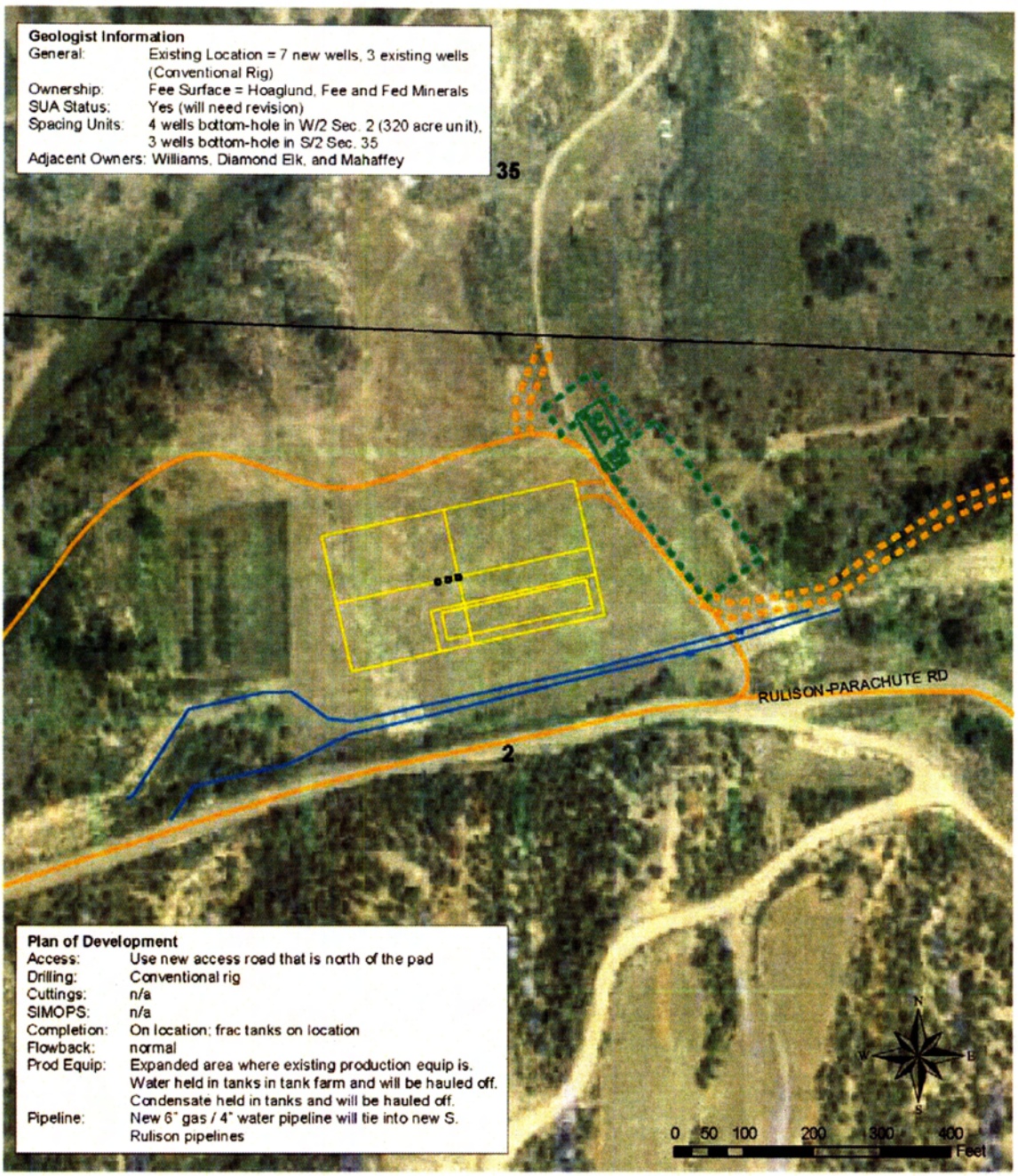


Figure 7
Location of well pad
GV 22-29

APPENDIX A

Plan of Development for Well Pads
PA 21-2, PA 331-2, RWF 22-29 and GV 22-29



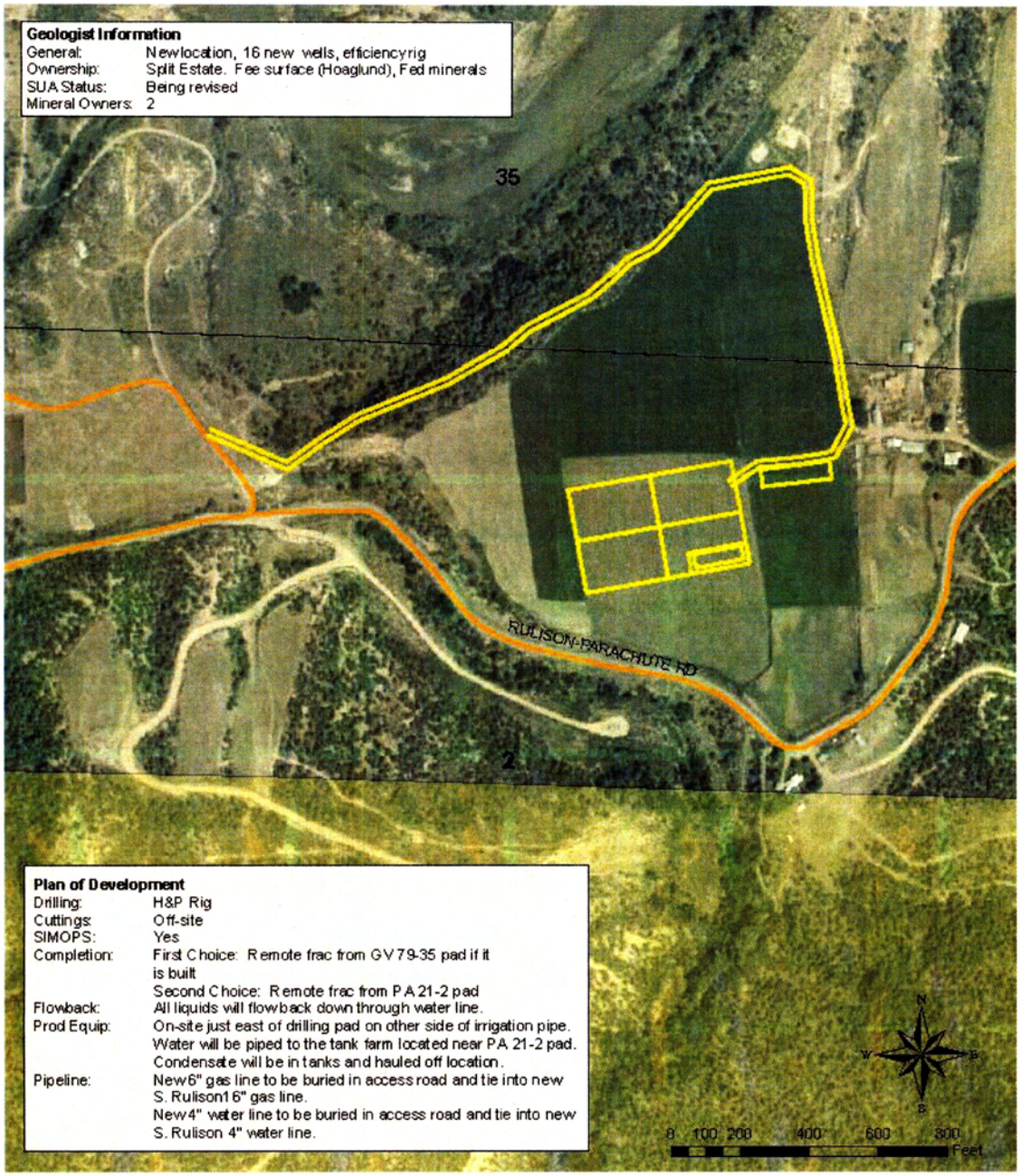
Legend

- Proposed Road
- Proposed Production Equipment Area
- Proposed Pad
- Existing Pipeline
- Existing Production Equipment
- Existing Well
- Existing Road

Williams Production RMT

PA 21-2 Plan of Development

Date Prepared: October 6, 2006



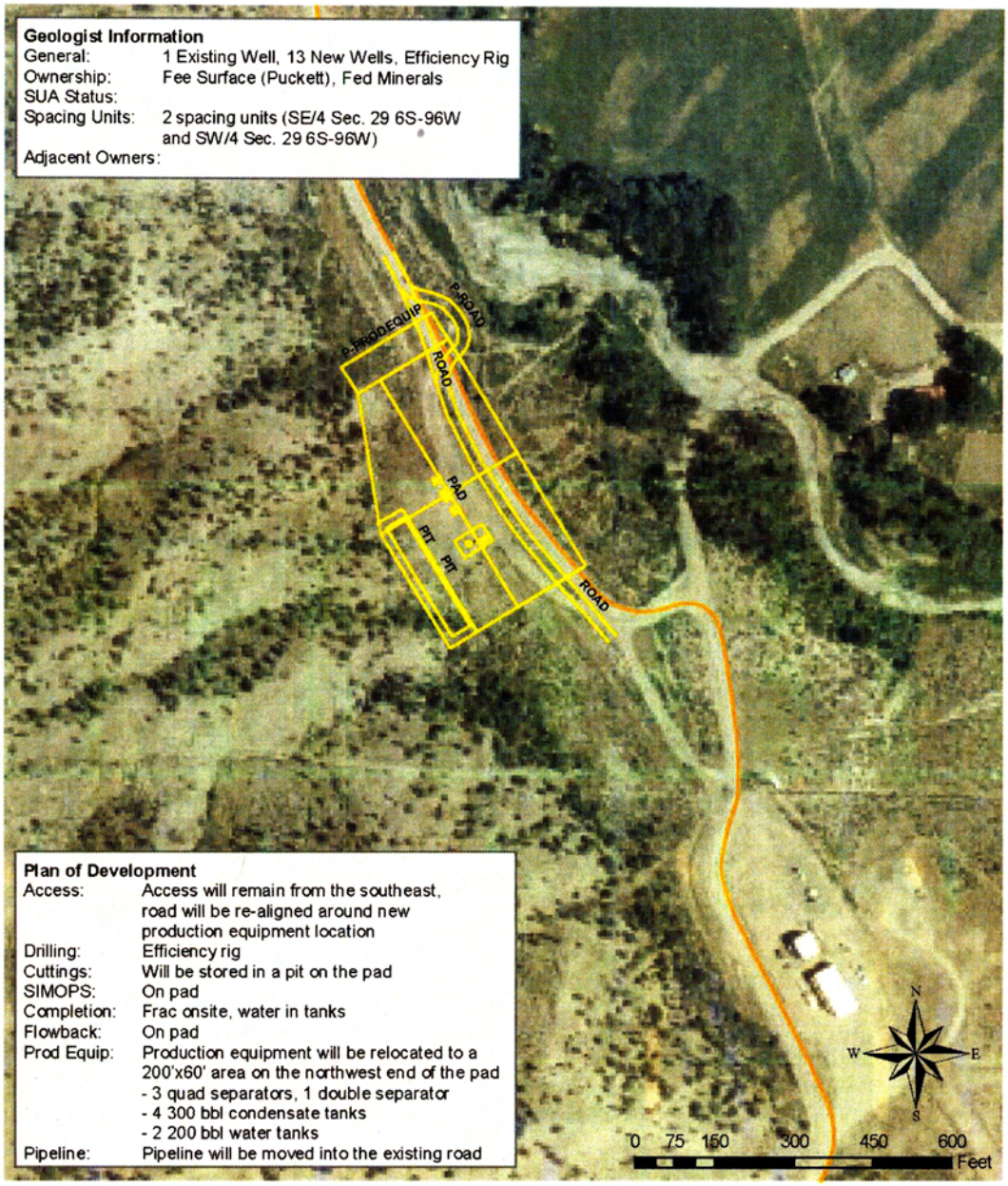
Legend

- Road
- PA 331-2 Preliminary Pad Layout
- BLM
- Private

Williams Production RMT

PA 331-2 Plan of Development

Date Prepared: September 26, 2006



Legend

- Existing Road
- GV 22-29 Preliminary Pad Layout

Williams Production RMT

GV 22-29 Plan of Development

Date Prepared: October 2, 2006

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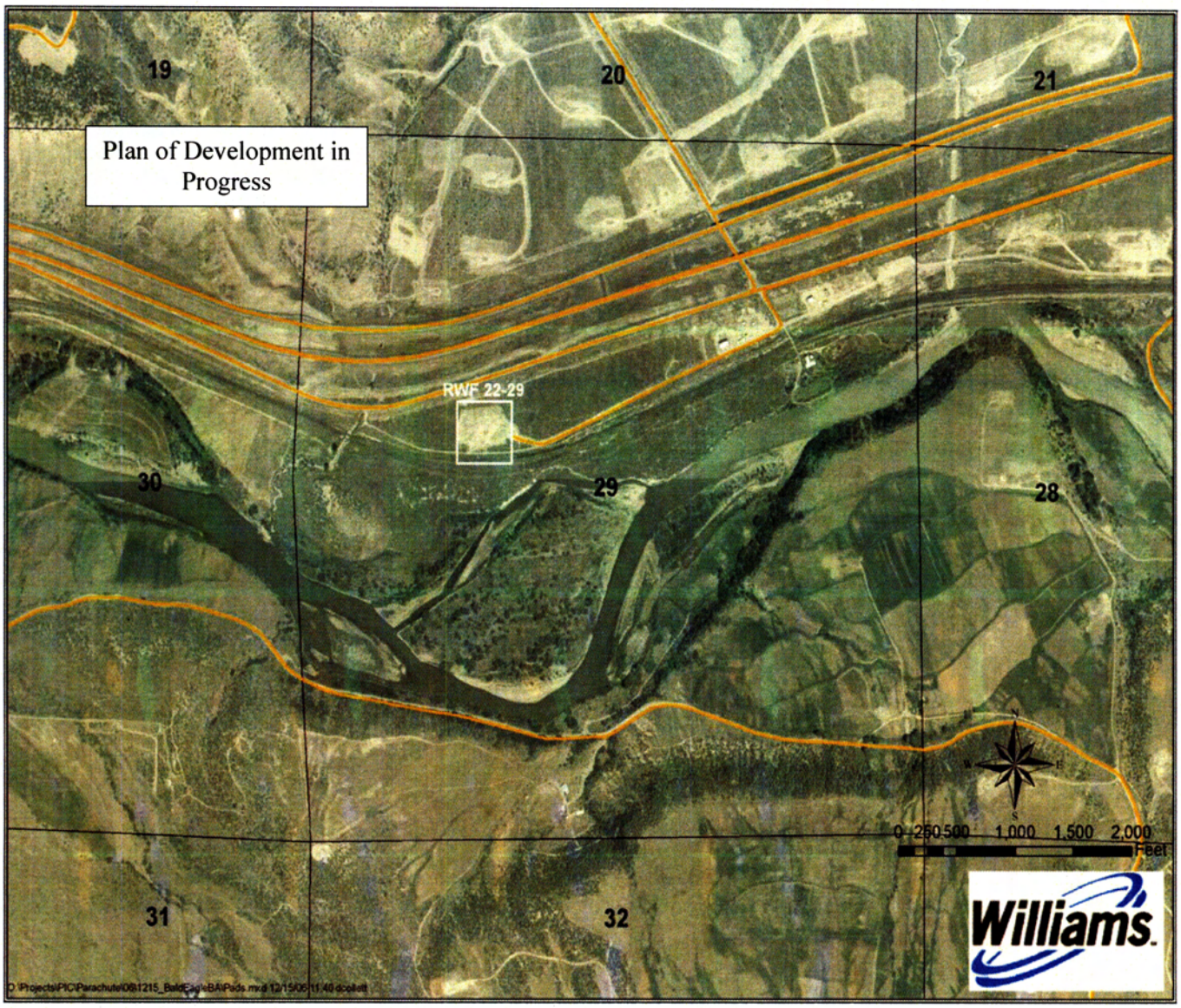
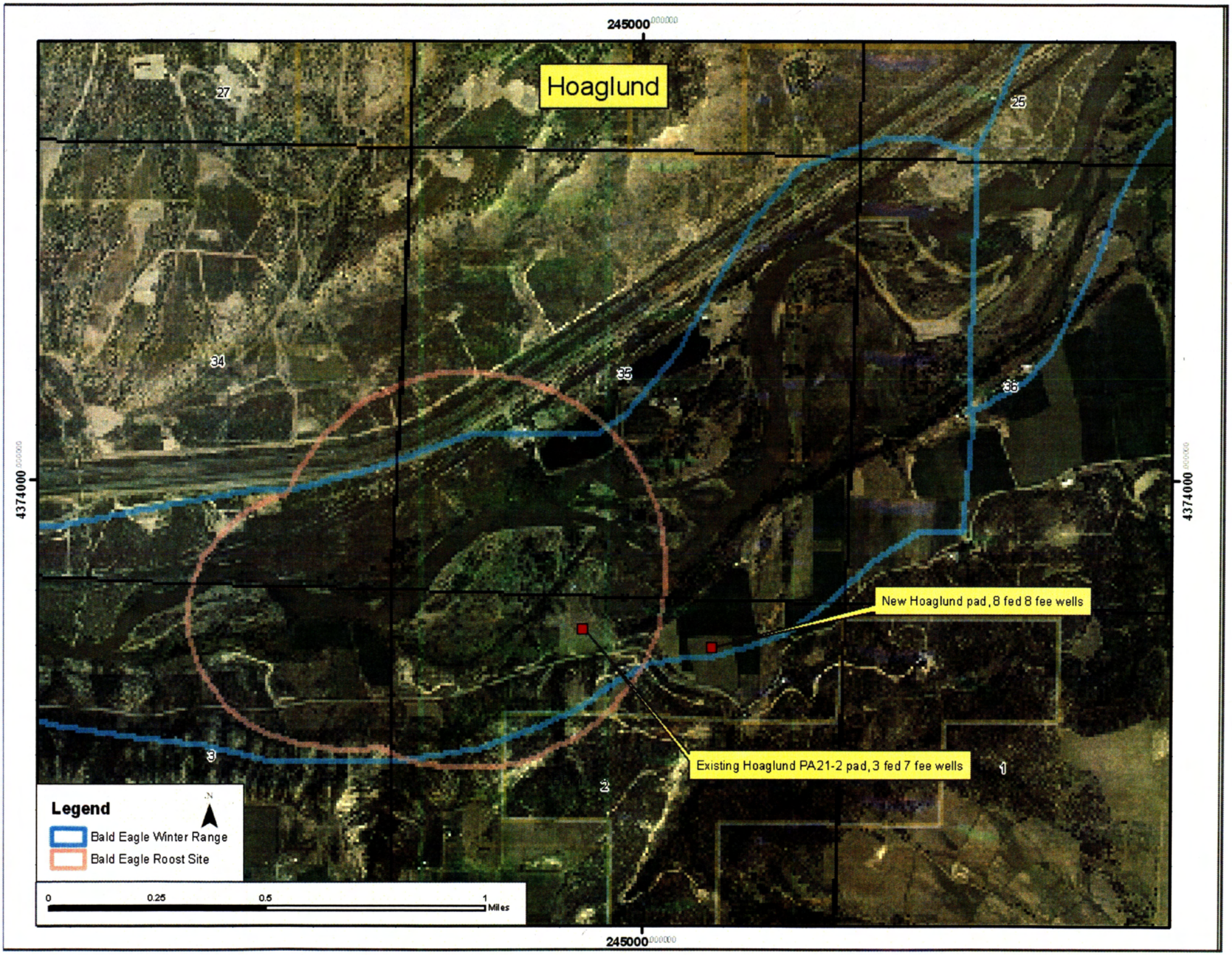
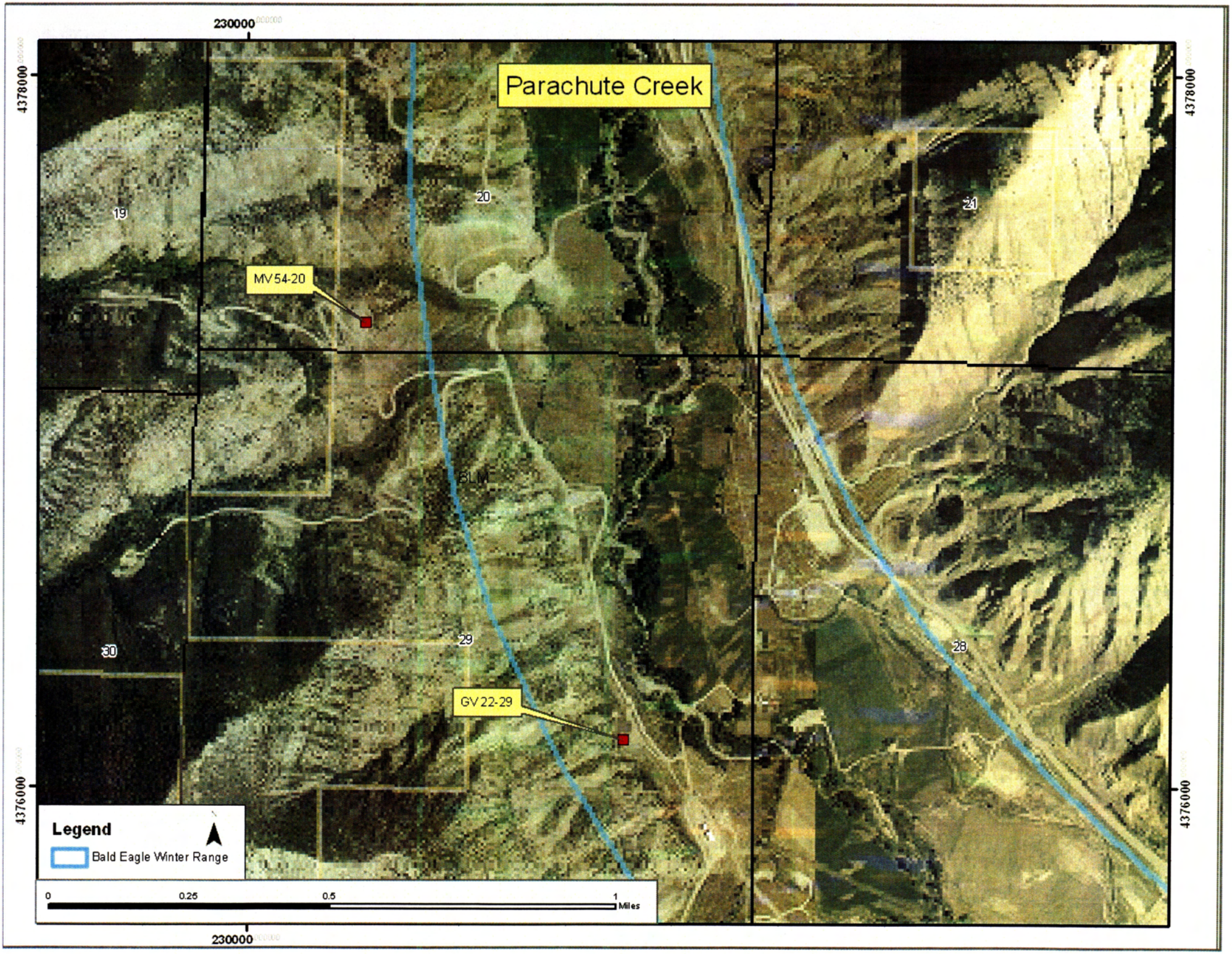
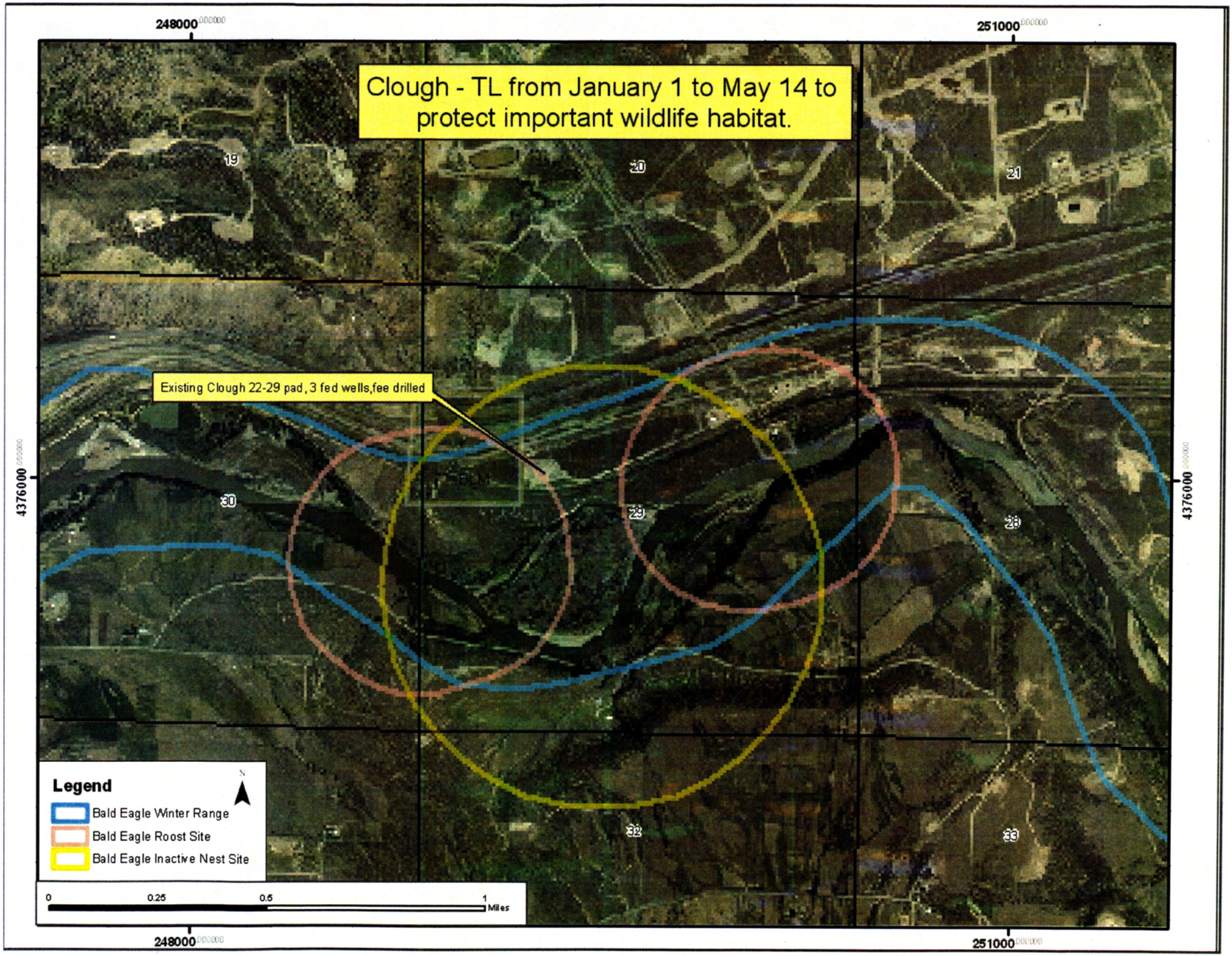

19
20
21
Plan of Development in Progress
RWF 22-29
30
29
28
31
32
0 250 500 1,000 1,500 2,000
Feet
Williams


245000
Hoaglund
27
25
34
35
36
4374000
4374000
New Hoaglund pad, 8 fed 8 fee wells
Existing Hoaglund PA21-2 pad, 3 fed 7 fee wells
3
2
1
Legend
N
Bald Eagle Winter Range
Bald Eagle Roost Site
0
0.25
0.5
1
Miles
245000


Parachute Creek
230000
4378000
4376000
19
20
21
30
29
28
BLM
MV 54-20
GV 22-29
Legend
Bald Eagle Winter Range
0
0.25
0.5
1
Miles


Clough - TL from January 1 to May 14 to protect important wildlife habitat.
Existing Clough 22-29 pad, 3 fed wells,fee drilled
248000
251000
4376000
19
20
21
30
29
28
32
33
BLM
Legend
Bald Eagle Winter Range
Bald Eagle Roost Site
Bald Eagle Inactive Nest Site
N
0
0.25
0.5
1
Miles