



**FINAL
ENVIRONMENTAL IMPACT STATEMENT
AND
BIOLOGICAL ASSESSMENT**

**EOG RESOURCES INC.
CHAPITA WELLS-STAGECOACH AREA
NATURAL GAS DEVELOPMENT**

**EIS UTU-080-2005-0010
FES 07-50**



**Bureau of Land Management
Vernal Field Office
Vernal, Utah**

**May 2007
(Modified January 2008)**

BLM MISSION STATEMENT

The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times.

Management is based upon the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation, rangelands, timber, minerals, watershed, fish and wildlife, wilderness, air and scenic, scientific, and cultural values.

EIS UTU-080-2005-0010
FES 07-50



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

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<http://www.blm.gov/utah/vernal/index.html>



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November 9, 2007

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The Final Environmental Impact Statement (FEIS) for the Chapita Wells – Stagecoach Area is hereby submitted for your review. It was prepared to analyze the potential impacts of EOG Resources Inc.'s field development proposal. The proposed action includes up to 627 natural gas wells, about 99.5 miles of new roads and 104.5 miles of pipelines, and 5,000 hp of compression. Of this total number, 473 wells would be drilled at new locations and 154 wells would be twins on existing well pads. In all, approximately 1,735 acres, or 5% of the total project area, would be disturbed by the proposal.

The CWSA involves approximately 31,872 acres located in Townships 8 to 10 South, Ranges 22 and 23 East, Salt Lake Base Meridian, about 30 miles south of Vernal, Uintah County, Utah. The CWSA encompasses an already developed oil and gas field. As of March 2004, the CWSA contained approximately 325 existing gas wells. Also, about 121 miles of roads and 115 miles of pipeline have been constructed within the region.

This FEIS analyzes two alternatives in detail. They are the Proposed Action and the No Action Alternatives. The FEIS also contains a discussion of nine other alternatives that were considered but dismissed from detailed analysis. The Proposed Action alternative is the agency preferred alternative.

The FEIS was prepared pursuant to the National Environmental Policy Act (NEPA), as well as other regulations and statutes, to address possible environmental and socio-economic impacts which could result from implementation of the project. This FEIS is not a decision document. Its purpose is to inform the public, and the Decision Maker, of the impacts associated with implementing the proponent's exploratory drilling proposal, to evaluate alternatives to the proposal, and to solicit other agencies and the public for comments. A Record of Decision is expected to be signed following the 30-day FEIS availability period.

If you wish to submit comments on this FEIS, we request that you make them as specific as possible, with references to page numbers and chapters of the document. The most useful comments will contain new technical or scientific information, identify data gaps in the impact analysis, or will provide technical or scientific rationale for opinions or preferences. Please refer to Chapita Wells – Stagecoach Area EIS in your correspondence. Written comments will be

accepted by fax, email, or letter for 30-days following the publication of the Notice of Availability in the Federal Register by the Environmental Protection Agency. Please provide your comments to:

Bureau of Land Management
Attn: Stephanie Howard
170 South 500 East
Vernal, Utah 84078
Fax: 435-781-4410
UT_Vernal_Comments@blm.gov

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information - may be made publicly available at any time. While you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments, including names and street addresses of respondents will be available for public review at the BLM Vernal Field Office from 7:45 a.m. to 4:30 p.m. Monday through Friday, excluding federal holidays. Comments may be published as part of the NEPA document and other related documents. All submissions from organizations or businesses will be made available for public inspection in their entirety. For further information concerning the document, please contact Stephanie Howard at (435) 781-4469.

Sincerely,

/s/ William Stringer

William Stringer
Vernal Field Office Manager

Enclosures – As Stated
Bcc: Central File, Reading File, Project File
SHoward:11/06/07:NEPAProj.EOGEIS

SUMMARY OF CWSA FINAL EIS

The Bureau of Land Management (BLM), Vernal Field Office, prepared an Environmental Impact Statement (EIS) in response to a proposal filed by EOG Resources, Inc. (EOG) to fully develop natural gas resources in the Chapita Wells – Stagecoach Area (CWSA).

The CWSA consists of approximately 31,872 acres in an existing gas producing region located in T8S/R22E, T9S/R22E, T9S/R23E and T10S/R23E, Uintah County, Utah, located on lands owned by the United States, the State of Utah, the Northern Ute Indian Tribe, and private parties. The CWSA contains the Chapita Wells Unit and the Stagecoach Unit in addition to non-unitized lands.

As of March 1, 2004, the CWSA contained 325 gas producing wells, approximately 121 miles of roads, and 115 miles of pipeline. An additional 161 wells, 26 miles of access road, and 26 miles of pipeline, were analyzed and approved in the Decision Record and Finding of No Significant Impact (FONSI) for EA UT-080 1999-32, Environmental Assessment, Chapita Wells Unit Infill Development, Uintah County, Utah (1999 Chapita Wells EA) (BLM 1999). As of March 1, 2004, 100 wells approved by the 1999 Chapita Wells EA Decision Record and FONSI remained to be drilled and/or constructed in the CWSA. Fifty-five of these wells were to be new locations and 45 were expected to be twins drilled from existing locations. Since the 100 wells not yet drilled (as of March 2004) were previously analyzed and approved, they are not included as proposed wells in the Proposed Action analyzed in this EIS.

EOG proposes to drill a total of up to 627 new gas wells to the Green River, Wasatch, Mesaverde, Mancos “B,” and, possibly, other formations. Of the planned wells, 473 will be drilled from new well pad locations and 154 are expected to be twins drilled from existing well pad locations, representing approximately 25 percent of the total new wells that would be drilled.

As discussed in Section 2.3.1, EOG would not drill from new or existing well pads within the 100-year floodplain of the White River Corridor. The most recent data available regarding 100-year floodplains in the CWSA include a 1977 U.S. Department of Housing and Urban Development (HUD) and Federal Emergency Management Agency (FEMA) survey, which inventoried public and State lands in Uintah County. The White River 100-year floodplain is illustrated in Figure 3.2-1 (Appendix A).

As also discussed in Section 2.3.1, EOG would not drill new wells in the White River corridor that would result in new well pads and roads. The White River corridor is defined as the line of sight from the centerline, up to ½ mile, along both sides of the White River. The oil and gas resources beneath the White River corridor in the CWSA have been leased by the United States, and under the terms of such leases, the BLM cannot deny EOG’s valid, existing rights to drill and develop this leasehold. Thus, EOG may drill new twin wells on existing well pads within the White River corridor (but outside the 100-year floodplain). These twins to existing wells would require no new roads.

This Final EIS (FEIS) addresses the effects of implementing natural gas development within the CWSA for locations that are conceptual in nature (Figure 2-1, Appendix A). The actual location of wells and associated ancillary facilities depicted and described in the EIS represent a maximum level of development with tentative locations. The final location of well pads, roads, and pipelines would be determined through the onsite process. These would occur when applications, such as Applications for Permit to Drill (APD) or BLM Right-of-Way (ROW) grants, are filed by EOG. This FEIS provides the basis for analyzing and

disclosing the impacts of a full-field development, and it identifies mitigation measures to reduce or mitigate residual impacts of the alternatives.

The FEIS is not a decision document. Rather, it documents the process used to analyze the potential environmental consequences of implementing the Proposed Action or the No Action Alternative. The decision regarding the CWSA project will be documented in a Record of Decision (ROD) signed by the BLM's Authorized Officer (AO) after the FEIS is completed. The ROD will apply only to Federal lands and leases, but decisions by other jurisdictions to issue or not issue approvals related to this project may be aided by the disclosure of impacts described in this EIS.

During the public scoping process for the Draft EIS (DEIS), Uintah County, the Bureau of Indian Affairs (BIA), Uintah and Ouray Agency, and Ute Indian Tribe were contacted and invited to be cooperating agencies on this EIS. The BIA became a Cooperating Agency on May 17, 2006. Uintah County has participated as a Cooperating Agency throughout the EIS process. The Tribe did not respond to BLM's invitation to participate as a Cooperating Agency. Copies of the DEIS and this FEIS were submitted to the BIA and Ute Indian Tribe for their review and comment. As discussed further in Section 1.5.3, the BIA will, under its authority, issue its own decision for the portion of the CWSA natural gas development project on Tribal/allotted land.

Land Status, Legal and Policy Considerations

Land Status

The proposed wells, pipelines, access roads, and ancillary facilities would be constructed on approximately 31,872 acres of land in the CWSA. Approximately 22,693 acres (71 percent) are Federal lands administered by the BLM, 6,577 acres (21 percent) are owned by the Ute Tribe and/or its allottees and administered by the BIA, 1,914 acres (6 percent) are owned by the State of Utah and administered by the Utah State School and Institutional Trust Lands Administration (SITLA), and 688 acres (2 percent) are privately owned. **Table S-1** provides a summary of CWSA acreage by surface owner and proposed single and twin well numbers.

Table S-1. CWSA Acreage and Proposed Well Numbers by Surface Owner

Surface Owner	Acreage in CWSA	Percent of Total CWSA	Number of Well Locations		Total Number of Wells
			New, Single Well Locations	Twin Wells from Existing Locations	
BLM	22,693	71	382	97	479
State of Utah	1,914	6	24	0	24
Ute Tribe/Allotted	6,577	21	64	50	114
Private	688	2	3	7	10
Total	31,872	100	473	154	627

Conformance with Management Plans, NEPA Documents, and other Federal Policies

The decision framework for development and land use decisions for Federal lands and minerals within the CWSA are contained in five Federal documents:

- 1) The Final Environmental Impact Statement on the Book Cliffs Resource Management Plan (BLM 1984);
- 2) The Record of Decision and Rangeland Program Summary for the Book Cliffs Resource Management Plan (Book Cliffs RMP) (BLM 1985);
- 3) The Environmental Assessment and Finding of No Significant Impact for Oil and Gas Leasing in the Book Cliffs Resource Area (1988 Oil and Gas Leasing EA) (BLM 1988a), an amendment to the Book Cliffs RMP;
- 4) EA No. 1997-48, Environmental Assessment, Chapita Wells Unit, Uintah County, Utah (BLM 1998); and
- 5) EA No. UT-080 1999-32, Environmental Assessment, Chapita Wells Unit Infill Development, Uintah County, Utah (BLM 1999).

The analyses from these documents are incorporated by reference.

Conformance with Local Management Plans and Policies

The BIA is a Cooperating Agency on this EIS. A formal management plan does not exist for the Uintah and Ouray Indian Reservation. The elected Ute Tribe Business Committee and the BIA determine approval of land use activities on Tribal lands. Production from Tribal leases provides royalties, tax revenues, and surface access and use fees to the Tribe, which contributes to the Tribe's economic independence. The Proposed Action is consistent with the BIA's regulatory responsibilities, which include promoting the economic development objectives of the Northern Ute Tribe under its government-to-government relationship with, and trust responsibility to, the Tribe. Thus, the range of the BIA's reasonable alternatives is limited to those that would serve the Tribe's economic development objectives consistent with the trust responsibility. The BIA will, under its authority, issue its own decision for the portion of the CWSA natural gas development project on Tribal land.

There are no comprehensive State of Utah plans for the CWSA. Because the objectives of SITLA are to produce funding for the State school system, and because production on Federal leases could lead to further interest in drilling State leases in the area, the Proposed Action is consistent with the objectives of the State.

The Proposed Action is consistent with the *Uintah County General Plan* (Uintah County Plan) (Uintah County 2005), which encompasses the CWSA. Uintah County is a Cooperating Agency on this EIS.

PUBLIC INVOLVEMENT / SCOPING OF ISSUES

The BLM conducted public and internal scoping to solicit input and identification of environmental issues and concerns associated with EOG's Proposed Action. The public scoping process was initiated on October 1, 2004 with the publication of a Notice of Intent (NOI) in the Federal Register. The BLM prepared a scoping information notice and provided copies to Federal, State, and local agencies, the Ute Tribe, and general public. Announcements of the scoping opportunities were also sent to local media for announcement. An information open house was held at the Western Park Conference Center in Vernal, Utah on October 19, 2004. The official scoping period ended November 1, 2004. However, to ensure that the public was provided adequate scoping opportunity, a

second public scoping and information open house was held at the Western Park Conference Center on November 30, 2004.

Environmental issues and comments identified through the scoping process and analyzed in the DEIS and this FEIS are summarized below:

- Issue/Comment: The EIS should include a detailed Purpose and Need statement.
- Issue/Comment: The EIS should consider a reasonable range of alternatives that will meet the Purpose and Need, and should address resource and environmental issues and public concerns.
- Issue/Comment: The EIS should describe existing conditions within the analysis area.
- Issue/Comment: The EIS should adequately address resource and environmental consequences of the alternatives, including mitigation and cumulative effects.
- Issue/Comment: The EIS should include tables, maps, figures, charts, photos, an alternative matrix, and other methods of clearly and concisely presenting relevant information and analyses.
- Issue/Comment: The EIS should address nearby connected or related actions.
- Issue/Comment: The EIS should adequately address the cumulative impacts of the proposed project plus other oil and gas development projects in the region, and should adequately address reasonable foreseeable development.
- Issue/Comment: The EIS should fully analyze the socioeconomic effects of the proposed gas development.
- Issue/Comment: The EIS should analyze impacts to Tribal trust resources and should consult with the appropriate Tribal governments.
- Issue/Comment: The EIS should address environmental justice.
- Issue/Comment: The EIS should address strategies to reduce pollution and to comply with objectives of the 1990 Pollution Prevention Act.
- Issue/Comment: The EIS should analyze the effects of the proposed development on soil resources and soil erosion potential in the CWSA.
- Issue/Comment: The EIS should analyze the effects of the proposed development on water resources; identify relevant water resource policies, regulations or statutes that are applicable to the proposed gas development project; and should include a description of water quality monitoring programs.
- Issue/Comment: The EIS should analyze potential impacts to floodplain and riparian areas, and should include an alternative that prohibits/avoids gas development/surface-disturbing activities in the White River corridor and floodplain, as well as any other riparian areas and floodplains in the CWSA.

Issue/Comment:	The EIS should analyze the potential for downstream effects from the project on the White River.
Issue/Comment:	The EIS should analyze the potential for weed invasion/infestation due to the proposed development, and should analyze potential impacts to natural resources as a result of weed invasion and weed control.
Issue/Comment:	Halogeton is prevalent in the CWSA, particularly in disturbed areas, and has a negative effect on sheep grazing.
Issue/Comment:	The EIS should analyze the effects of the proposed development on raptors and provide appropriate raptor breeding activity, nesting activity, and habitat protection measures.
Issue/Comment:	The EIS should analyze the effects of the proposed development on migratory birds and migratory bird habitat in the CWSA.
Issue/Comment:	The EIS should analyze the effects of the proposed development on threatened, endangered, candidate, sensitive, and otherwise special status plants and animals, including the Colorado River cutthroat trout, sage grouse and white-tailed prairie dog.
Issue/Comment:	The EIS should address potential depletion from the Upper Colorado River drainage basin and effects on the Colorado River Endangered fish species.
Issue/Comment:	The EIS should include an alternative to provide the utmost level of protection to the natural viewshed of the White River corridor and also protect it from noise impacts.
Issue/Comment:	The EIS should fully analyze the effects of the proposed development on air quality within the CWSA and on a cumulative basis (within the Uintah Basin).
Issue/Comment:	Paleontological surveys should be conducted on all areas where surface disturbance is proposed.
Issue/Comment:	Class I and Class III cultural resource surveys should be conducted on all areas proposed for surface disturbance, including any areas where cross-country vehicle or Off-Highway Vehicle (OHV) travel is proposed.

Table 6-1 lists the persons, groups, and agencies that were sent a hard copy and/or CD of the DEIS. The Notice of Availability (NOA) of the formal CWSA DEIS was published by the BLM in the Federal Register on January 12, 2006. The EPA's Federal Register NOA publication occurred on January 20, 2006, which officially began the public comment period. Written comments on the CWSA DEIS were accepted from January 20 to March 13, 2006. A public meeting for the receipt of comments on the DEIS was held in Vernal, Utah, on February 8, 2006. Hard copies of the DEIS and project maps were made available during this public meeting. Members of the BLM were available for questions and comments. Except for representatives from one consulting firm and three oil and gas companies, no other public representatives or other government agencies attended the meeting. Eight written comment letters were received by the BLM. **Table 6-2** summarizes the relevant

comments and the BLM's responses to these comments. Copies of the letters received are on file at the Vernal BLM Field Office in Vernal, Utah.

ALTERNATIVES

Table S-1 briefly compares the proposed activities under each alternative.

Table S-1. Comparison of Alternatives

Project Component	Proposed Action Alternative A (acres)	No Action Alternative B (acres)	Comments
Wells	1,260	256	Under the No Action Alternative, 148 wells could be drilled on Ute Tribe/allotted, State of Utah and private lands, provided the appropriate SMA or landowner grants approval. Previously approved wells on Federal lands would also be drilled under the No Action Alternative.
Roads	362	64	Under the No Action Alternative, 12 miles of previously approved roads would be constructed, and 17.7 miles of roads could be constructed on Ute Tribal, State of Utah and private lands, provided approval is granted by the appropriate SMA or private landowners.
Pipelines	101	7	Under the No Action Alternative, 18.5 miles of previously approved pipeline would be constructed, and 7.5 miles of pipeline could be constructed on Ute Tribal, State of Utah and private lands, provided approval is granted by the appropriate SMA or private landowners.
Injection Wells	13	2.5	Under the No Action Alternative, approximately one injection well would be drilled.
Total	1,735	329.5¹	

¹ Minor discrepancy in acreage totals due to rounding.

ALTERNATIVES CONSIDERED BUT NOT EVALUATED IN DETAIL

Seven additional alternatives were considered as a result of issues raised during scoping. Each potential alternative was evaluated and eliminated from detailed analysis for a variety of reasons. These alternatives included discussions on one well per well pad, no new development, directional drilling, decreased density development, Best Management Practices alternative, Phased Development, and Minimum Setback Distances from Riparian Zones, Floodplains, Springs, or Sensitive Wildlife, Geologic, and Cultural Resources Areas. These alternatives are described in Section 2.4 of the FEIS.

AFFECTED ENVIRONMENT

The Uinta Basin is a bowl-shaped structural and sedimentary basin located in northeast Utah. The majority of the Uinta Basin is underlain by sedimentary rocks of various types. The geologic formations that are exposed at or near the surface within this area include the Eocene-Oligocene Duchesne River Formation and the Eocene Uinta Formation. Structural characteristics of the Uinta Basin developed during the early Eocene Laramide Orogeny, a

time of mountain building in the western United States (Clark 1957). The structural axis of the basin generally trends west-northwest and drops to the northwest. The Uinta Basin contains extensive deposits of oil and natural gas and other mineral resources.

The Uinta Basin is drained by the Green River and its tributaries. Major tributaries include the Duchesne River and the White River. Groundwater aquifers beneath the CWSA are present in geologic formations dating in age from Cambrian to recent. The principal aquifers within the CWSA include alluvial deposits along the White and Green Rivers, and two consolidated aquifers within the Green River Formation (Schlotthauer 1981).

Based on measured data, the region's remoteness, and a lack of major urban communities, the region around Vernal is designated as an attainment area for all criteria pollutants. That means all criteria pollutants are below the designated levels of the National Ambient Air Quality Standards (NAAQS) established by the U.S. Environmental Protection Agency (EPA) and the Utah Department of Environmental Quality (UDEQ). Concentrations of criteria pollutants greater than the NAAQS are considered potentially harmful.

Soils within the CWSA are distributed according to the major soil forming factors. According to the Soil Survey Geographic Database (SSURGO) maps (USDA-Natural Resources Conservation Service [NRCS] 2004); there are 12 soil associations within the CWSA. Some of these associations are composed of the same soil series components but occur on different slopes. Three soil units in the CWSA have the potential to occur on slopes greater than 40 percent. Six soil units in the CWSA have soils that are classified as poor for reclamation, based on potentially strong alkalinity (pH > 9) and high salinity (> 9 millimhos per centimeter [mmhos/cm]).

Vegetation communities in the Uinta Basin are controlled by factors including elevation, slope, and soil parent material. Elevation in the CWSA ranges from 4,600 to 5,500 feet, and the rolling topography creates a conglomerate of changing slopes across the landscape. Topographic influences along with soil characteristics and precipitation have led to four primary vegetation communities within the CWSA: sagebrush shrub, desert shrub, riparian corridors, and badlands. Weed invasion and establishment is moderate to high within the CWSA. The most common invasive species in the CWSA are Russian thistle (*Salsola iberica*), halogeton (*Halogeton glomeratus*), and cheatgrass (*Bromus tectorum*). Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*) and Ute Ladies'-tresses (*Spiranthes diluvialis*) are the only special status plant species that have potential to occur in the CWSA (Appendix C).

The CWSA supports a diversity of wildlife and wildlife habitats for big game, raptors, upland game birds, migratory passerine birds, reptiles, amphibians, and fish, and numerous other categories and species of wildlife. In addition, numerous Federally listed and Utah Sensitive species have the potential to occur within the CWSA. Species' occurrences are typically dependent on habitat availability, relative carrying capacities, and the degree of existing habitat disturbance. The CWSA supports approximately 31,872 acres of wildlife habitat encompassing large, fairly contiguous upland habitats, dissected by incised drainages and canyon systems and existing oil and gas development. Water resources are limited within the CWSA and therefore, provide the greatest habitat value for wildlife.

The CWSA contains portions of six grazing allotments on BLM and State lands: Antelope Draw, Horned Toad, Little Emma, Olsen, Seven Sisters, and West Tabyago. All six allotments in the CWSA are grazed by sheep during various grazing periods. Between the six allotments, there are approximately 24,692 acres of land allotted for grazing by the BLM within the boundaries of the CWSA. There are 2,390 Animal Unit Months (AUMs) within the CWSA. On Tribal/allotted lands in the CWSA, livestock grazing (cattle and sheep) occurs

throughout most portions of the CWSA. The majority of the livestock on Tribal/allotted land is owned and operated by Ute Tribal Livestock enterprise.

As of October 1, 2004, 93 cultural sites have been recorded within the CWSA, 35 of which are eligible for nomination to the National Register of Historic Places (NRHP). Many of these sites are hallmarked by an absence of diagnostic cultural materials such as projectile points, ceramics, or rock art, and may be indicative of differential activities such as gathering versus hunting. However, it is equally probable that these "non-diagnostic" sites also represent the last remains of sites surface-collected or eroded away, or the first appearance of sites still buried. About 60 percent of the known sites have assigned cultural affiliations.

Approximately 98 fossil localities have been reported within the boundaries of the CWSA. The fossil taxa found within the CWSA are typical of taxa found throughout the Uinta and Duchesne River Formations consisting of a diverse variety of primitive mammals, crocodiles, and turtles.

Current land uses within and adjacent to the CWSA consist of existing natural gas development, wildlife habitat, dispersed recreation, recreation along the White River and at Fantasy Canyon, limited small game hunting, and livestock grazing. There are no commercial businesses, nor private residences within the CWSA. There is also limited irrigated agriculture adjacent to and west of the White River on the west side of the CWSA. There are approximately 325 producing natural gas wells in the CWSA, along with an extensive road network, aboveground and buried pipelines, tank batteries, ponds, compressor stations, and miscellaneous gas treatment equipment. Routine operation and maintenance activities associated with existing gas exploration and production generate most vehicle traffic and human activity in and around the CWSA.

The existing transportation system within the CWSA consists of approximately 121 miles of unpaved access roads that service existing oil and gas operations, livestock transportation for grazing, and recreational users. Most of these roads are claimed by Uintah County. Class "B" roads are claimed, maintained and improved by the County. Class "D" roads, approximately 30-35 miles of the roads within the CWSA, are claimed by the County but are generally maintained by the operators.

Recreational use in most of the CWSA primarily consists of dispersed activities such as OHV use, hunting, visits to Fantasy Canyon, and floating/boating on the White River. Hunting primarily occurs in the fall and winter months and is limited to cottontail rabbit, pronghorn, coyote, waterfowl, and to a lesser extent, mule deer. Hunting permits on public lands are issued by the Utah Division of Wildlife Resources (UDWR). Hunting activities on Tribal/allotted land is limited to Tribal members and authorized guests of the Tribe. No designated wilderness areas, wilderness study areas, or wilderness characteristics areas occur within the CWSA.

Public lands managed by BLM within the CWSA have been classified according to BLM's Visual Resource Management (VRM) system, an analytical process used to inventory, manage, and set management objectives for visual resources on public lands. The majority of BLM lands in the CWSA fall within VRM Class IV. Approximately three percent of the CWSA along the White River corridor in the southwestern portion of the CWSA is designated Class III. This area is designated VRM Class III because it is within the viewshed of recreational users on the White River. The remaining portion of the CWSA consists of State, Tribal/allotted, or private lands, and has no designated visual classification.

No noise standards have been established by the BLM, the BIA, Ute Indian Tribe, State of Utah, or Uintah County. In the absence of noise statutory limits, a noise level of 55 A-weighted decibels (dBA) has been established as a guideline for acceptable environmental noise. Currently, gas and oil drilling and production activities are widespread within and near the CWSA, which affect ambient noise levels. The coal-fired Bonanza Power Plant is located just beyond the northeastern portion of the CWSA and contributes to ambient noise levels. Noise levels are also elevated above rural areas near well pad and access road construction, drilling rigs, along access roads, and along State Highway 45, the major paved access to the CWSA.

Historically, the economy of Uintah County was founded on agriculture and then resource extraction and has been subject to changes in the energy markets. Throughout the 1990s and to the present, the local population and employment has grown gradually as a result of the diversification of the regional economy and increased activity in the energy sector. Due to the prevalence of the oil and gas and trade industry in Uintah County, wages are generally higher than in other rural counties in Utah, although they are lower than in counties along the more prosperous Wasatch Front. Presently, the counties' economies differ somewhat in composition.

ENVIRONMENTAL CONSEQUENCES

The potential environmental consequences are summarized in **Table S-2** for the Proposed Action and the No Action Alternative. Although interim and final reclamation efforts would be implemented (see Appendix E), the percent of success may be limited due to the low annual precipitation and the physical and chemical properties of the arid soils in the Uinta Basin. Recent BLM monitoring has documented that interim reclamation efforts in oil and gas development areas have largely been unsuccessful at reestablishing soil stability and vegetation. Accordingly, BLM field inspections are indicating that all surface disturbances should be portrayed as long-term impacts for the life of the project.

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Table S-2. Proposed Action – No Action Impacts Comparison

Effects by Resource / Environmental Element	Proposed Action	No Action
Effects on surface water	<p>Increased sedimentation and turbidity of surface water as a result of ground disturbance and erosion into surface waters via runoff. Potential sediment loading to White River due to surface disturbance and erosion predicted to be approximately 4,014 tons/yr. EOG would not drill from new or existing well pads within the 100-year floodplain of the White River Corridor. Furthermore, EOG would not drill new wells in the White River corridor that would result in new well pads and roads.</p> <p>Up to 263 acre-feet/per year could potentially be depleted from the Green and White Rivers due to project-related water consumption.</p> <p>Possible degradation of the natural and beneficial values served by floodplains.</p>	<p>Increased sedimentation and turbidity of surface water as a result of ground disturbance and erosion into surface waters via runoff. Potential sediment loading to White River due to surface disturbance and erosion predicted to be approximately 842 tons/yr. EOG would not drill from new or existing well pads within the 100-year floodplain of the White River Corridor. Furthermore, EOG would not drill new wells in the White River corridor that would result in new well pads and roads.</p> <p>Up to 218 acre-feet/per year could potentially be depleted from the Green and White Rivers due to project-related water consumption.</p> <p>Possible degradation of the natural and beneficial values served by floodplains.</p>
Effects on ground water	Slight chance of groundwater contamination from spills, but applicant-committed measures and design features of the Proposed Action (e.g., well pad and road construction techniques and drill pit containment) and Spill Prevention, Control, and Countermeasure (SPCC) plans would reduce potential impacts of spills.	Same as Proposed Action but smaller likelihood because of only 148 wells.
Effects on air quality during construction	Dust generated during construction of pads and roads and drilling wells would result in localized Particulate Matter less than 10 Microns Diameter (PM ₁₀) effects near construction.	Same as Proposed Action near each individual facility and road. However, effects would occur at 148 locations rather than the 627 locations of the Proposed Action.
Effects on air quality during operations	Maximum PM ₁₀ , nitrogen dioxide (NO ₂), and carbon monoxide (CO) ambient air concentrations predicted to be 13, 25, and 44%, respectively, of NAAQS. Maximum NO ₂ and PM ₁₀ predicted to be 13 and 31% of Prevention of Significant Deterioration (PSD) Class II increment. Hazardous Air Pollutant (HAP) ambient concentrations predicted to be less than 1% of Chronic Inhalation Exposure, Reference Exposure, and Utah Toxic	Maximum PM ₁₀ , NO ₂ , and CO ambient air concentrations predicted to be 3, 6, and 11%, respectively, of NAAQS since project emissions would be about 25% of Proposed Action. Maximum NO ₂ and PM ₁₀ impacts predicted to be 3 and 8% of PSD Class II increment.

Effects by Resource / Environmental Element	Proposed Action	No Action
	Screening Levels except formaldehyde and benzene, which are predicted to be 18% and 3% of the Reference Exposure Levels, 5% and 2% of the Chronic Inhalation Exposure Levels, and 45% and 20% of the Utah Toxic Screening Levels, respectively.	
Effects to air quality and air quality related values (AQRV) at Class I areas	Ambient pollutant concentrations predicted to be less than 0.1% of Class I increments. Maximum visibility effects predicted to be less than 3% of the “just noticeable change” threshold of 1.0 deciview. Nitrogen deposition value predicted to be less than 1% of 3.0 kilograms per hectare per year (kg/ha/yr) threshold.	Negligible effects that would be significantly less than those described for Proposed Action since project emissions would be 25% of Proposed Action.
Soil Loss	Soil loss estimated to be 4,014 tons/year.	Soil loss estimated to be 842 tons/year.
Loss of Vegetation	Approximately 1,735 acres removed during construction. Although interim reclamation would be attempted after each well is completed (see Appendix E), reclamation may take from years to decades before successful reclamation is achieved. Similarly, final reclamation efforts may take from years to decades before successful reclamation is achieved.	Approximately 329.5 acres removed during construction. Although interim reclamation would be attempted after each well is completed (see Appendix E), reclamation may take from years to decades before successful reclamation is achieved. Similarly, final reclamation efforts may take from years to decades before successful reclamation is achieved.
Effects on Special Status Vegetation Species	Surface disturbance could result in the loss of potential habitat for the Uinta Basin hookless cactus. Road development and subsequent increased public access could lead to illegal taking of plants.	Surface disturbance could result in the loss of potential habitat for the Uinta Basin hookless cactus. Road development and subsequent increased public access could lead to illegal taking of plants.
Loss of Wildlife Habitat	Approximately 1,735 acres of general wildlife species habitat, habitat for raptor nesting and/or hunting, and habitat for migratory bird nesting and/or foraging removed. 714 acres of crucial year-long antelope habitat within the CWSA would be disturbed by new facilities. 71 acres of crucial year-long mule deer habitat within the CWSA would be disturbed by new facilities.	Approximately 329.5 acres of general wildlife species habitat, habitat for raptor nesting and/or hunting, and habitat for migratory bird nesting and/or foraging removed. 82 acres of crucial year-long antelope habitat within the CWSA would be disturbed by new facilities. 36 acres of crucial year-long mule deer habitat within the CWSA would be disturbed by new facilities.

Effects by Resource / Environmental Element	Proposed Action	No Action
Effects to cultural resources	Pre-construction cultural surveys and subsequent avoidance measures for cultural sites would reduce potential impacts but likelihood exists that some sub-surface artifacts or sites could be inadvertently destroyed.	Pre-construction cultural surveys and subsequent avoidance measures for cultural sites would reduce potential impacts but likelihood exists that some sub-surface artifacts or sites could be inadvertently destroyed.
Effects to paleontological	Fossil-bearing geological formations extend into CWSA. Adverse effects would be minimized by paleontological surveys during APD process and subsequent protection measures developed for fossil resources. Earth-moving activities would immediately stop if fossils are discovered.	Same as Proposed Action but likelihood of discovering sites during surveys or uncovering during construction would be less as surface disturbance would be limited to Tribal, State and private lands.
Effects to land use	Continued use of lands within CWSA for oil and gas development and recreation. Loss of AUMs described in Rangeland Management.	Continued use of lands within CWSA for oil and gas development and recreation. Loss of AUMs described in Rangeland Management.
Effects to transportation	Average Annual Daily Traffic along main roads to the CWSA would increase by 2.2 to 3.4% during 7-year construction phase and less than 1% during operations.	Average Annual Daily Traffic along main roads to the CWSA would increase by 2.2 to 3.4% during 2-year construction phase and less than 1.0% during operations.
Effects to rangeland management	Long-term disturbance of 154 AUMs. Short-term impacts (e.g., traffic related delays) to sheep herding operations where construction and drilling activities occur in actively grazed areas.	Long-term disturbance of 9 AUMs. Short-term impacts (e.g., traffic related delays) to sheep herding operations where construction and drilling activities occur in actively grazed areas.
Effects to recreational opportunities	Continued development would further reduce solitude experience, which may be slightly offset by the construction of new access roads that could increase recreational access. If drilled, twin wells within the White River corridor (but outside the 100-year floodplain of the White River) would be drilled from June 15 through April 15, outside the typical boating season, to the extent possible in consideration of other applicable constraints, such as seasonal restrictions associated with wildlife protection. If EOG is unable to schedule drilling operations outside of the boating season, a drilling rig, workover rig, and associated equipment may be visible to recreational boaters on the White River temporarily while a well is being drilled.	Continued development would further reduce solitude experience, which may be slightly offset by the construction of new access roads that could increase recreational access. If drilled, twin wells within the White River corridor (but outside the 100-year floodplain of the White River) would be drilled from June 15 through April 15, outside the typical boating season, to the extent possible in consideration of other applicable constraints, such as seasonal restrictions associated with wildlife protection. If EOG is unable to schedule drilling operations outside of the boating season, a drilling rig, workover rig, and associated equipment may be visible to recreational boaters on the White River temporarily while a well is being drilled.

Effects by Resource / Environmental Element	Proposed Action	No Action
Effects to visual resources	Project would be in conformance with BLM VRM classes. Project would contribute to a more industrialized setting within the CWSA.	Project would not occur in any areas where VRM classifications apply. Project would contribute to a more industrialized setting within the CWSA, but would not directly affect BLM lands.
Noise effects	Noise would be elevated near drill rigs and compressor stations, and along access roads. No residences are near CWSA facilities or planned since most of the land is Federal or State-owned. CWSA facilities would be audible but below 55 dBA for recreational users on the White River.	Noise would be elevated near drill rigs and compressor stations, and along access roads. No residences are near CWSA facilities or planned since most of the land is Federal or State-owned. CWSA facilities would be audible but below 55 dBA for recreational users on the White River.
Socioeconomics effects	<p>Implementation of the Proposed Action would provide both short-term and long-term employment. Local services from commercial to government services could accommodate any new workers from out of local area. Total of approximately \$2,268,000 in construction-related, on-location employee wages over the seven-year development period (in constant 2005 dollars). Total of \$9,072,000 in drilling and completion-related, on-location employee wages over the seven-year development period. Total of approximately \$17,280,000 over the 40-year life of the project (in constant 2005 dollars). Over time wages may rise in nominal terms because of inflation.</p> <p>Total production revenues would be approximately \$2.3 billion. Approximately \$6.7 million would be generated in Federal mineral royalties per year.</p>	<p>Implementation of the No Action Alternative would provide both short-term and long-term employment. Local services from commercial to government services could accommodate any new workers from out of local area. Total of \$648,000 in construction-related, on-location employee wages over the two-year development period. Total of \$2,592,000 in drilling and completion-related, on-location employee wages over the two-year development period. Total of approximately \$5,184,000 over the 40-year life of the project (in constant 2005 dollars). Over time nominal wages may rise because of inflation.</p> <p>Total production revenues generated by all 144 wells over the 40-year life of the project would be approximately \$5.6 million. Approximately \$1.0 million would be generated in Federal mineral royalties per year.</p>

EOG Resources, Inc.
Chapita Wells – Stagecoach Area Natural Gas Development

Final
Environmental Impact Statement

Lead Agency: Bureau of Land Management
Vernal Field Office
Vernal, Utah

For further information, contact: Stephanie Howard
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Abstract

EOG Resources, Inc. (EOG) proposes to drill a total of up to 627 new gas wells to the Green River Formation, Wasatch Formation, Mesaverde Group (including Blackhawk Formation), Mancos Shale and, possibly, other formations. Of the planned wells, 473 would be new well pad locations and 154 are expected to be twin wells drilled from existing locations. The twin wells would represent approximately 25 percent of the total new wells that would be drilled. Following review of public comments on the DEIS, EOG committed to the following measures:

- EOG would not drill from new or existing well pads within the 100-year floodplain of the White River Corridor. The most recent data available regarding 100-year floodplains in the CWSA include a 1977 U.S. Department of Housing and Urban Development (HUD) and Federal Emergency Management Agency (FEMA) survey, which inventoried public and State lands in Uintah County. The White River 100-year floodplain is illustrated in Figure 3.2-1 (Appendix A).
- EOG would not drill new wells in the White River corridor that would result in new well pads and roads. The White River corridor is defined as the line of sight from the centerline, up to ½ mile, along both sides of the White River. The oil and gas resources beneath the White River corridor in the CWSA have been leased by the United States, and under the terms of such leases, the BLM cannot deny EOG's valid, existing rights to drill and develop this leasehold. EOG may drill new twin wells on existing well pads within the White River corridor (but outside the 100-year floodplain). These twins to existing wells would require no new roads.
- For surface-disturbing activities proposed within the 100-year floodplains of Coyote Wash and Red Wash, additional applicant-committed design features would be considered on a site-specific basis during the onsite inspection in order to maintain and protect wildlife habitat, water quality, quality of the recreation experience, and other land uses. Such site-specific design features could include the use of closed-loop drilling within the 100-year floodplain, directional drilling, placement of surface facilities (other than the associated wellhead and pipeline) outside of the floodplain,

and/or other measures designed to eliminate potential impacts to the floodplains. The decision to implement additional, site-specific design features within the 100-year floodplains of Coyote Wash and Red Wash would be determined on a well-by-well basis during the APD approval process.

- Twin wells in the White River corridor (but outside the 100-year floodplain) will be located, designed, or screened to be out of view of recreational boaters on the White River from the upstream boundary of the Chapita Wells Unit to the Mountain Fuel Bridge. The White River Seen Area Analysis (Chapter 4.0, Map 4-1, EOG Resources, Inc., Environmental Assessment Chapita Wells Unit Infill Development, Uintah County Utah, EA No. UT-080 1999-32) is the conceptual guideline used to define areas that are out of view of White River recreational boaters. In conjunction with the APD, EOG and the AO will jointly determine the use of topographic features and placement of facilities, such as low-profile tanks, to prevent facilities from view. EOG will use telemetry/automation to reduce vehicle trips to these locations.
- If drilled, twin wells within the White River corridor (but outside the 100-year floodplain) will be drilled during the months of August through April, outside of the typical boating season, to the extent possible in consideration of other applicable constraints, such as seasonal restrictions associated with wildlife protection. If EOG is unable to schedule drilling operations outside of the boating season, a drilling rig, workover rig, and associated equipment may be visible to recreational boaters on the White River temporarily while a well is being drilled or re-worked.

The majority of the proposed wells would be drilled on 40-acre spacing. However, some pilot 20-acre locations may be drilled to the Mesaverde Group within the CWSA to aid in the determination of whether development on 40-acre spacing can reasonably provide for the optimum recovery of reserves from the CWSA. The CWSA contains the Chapita Wells Unit and the Stagecoach Unit in addition to non-unitized lands. The ability to drill 20-acre surface spacing outside of the unitized areas of the CWSA would be subject to formal well spacing orders and well location patterns as prescribed by the Utah Division of Oil, Gas, and Mining (UDOGM). Approximately 66 of the proposed new well pad locations could be drilled on 20-acre spacing, however, an exact number, if any, has not yet been determined.

EOG's long-term plan of development (POD) is to drill wells at the rate of approximately 90 wells per year over a period of seven years, or until the resource base is fully developed. The total number of wells drilled would depend largely on factors outside of EOG's control such as production success, engineering technology, economic factors, availability of commodity markets, drilling rig availability, and lease stipulations.

The productive life of each proposed well is estimated to be 40 years. Associated facilities and infrastructure required by the Proposed Action would include roads, gas pipelines, and separation, dehydration, metering, and produced fluid storage facilities.

Construction, drilling, and completion activities would begin after the issuance of the EIS ROD, approval of individual APDs, and approved ROW grants.

Two alternatives were considered in detail for this project: the Proposed Action and the No Action Alternatives. Alternative A (Proposed Action) consists of EOG's proposal for developing natural gas resources throughout the CWSA. Alternative B (No Action) would limit development of natural gas resources to Tribal, State, and private lands within the CWSA. In addition to EOG's commitment to voluntarily apply environmental protection measures under either alternative, resource-specific mitigation has also been developed

within the Environmental Consequences (Chapter 4) in order to reduce or mitigate residual impacts of either alternative.

William Stringer, Field Office Manager of the Vernal Field Office, is the BLM's AO responsible for this FEIS.

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