

RECORD OF DECISION FOR THE GASCO ENERGY INC. UINTA BASIN NATURAL GAS DEVELOPMENT PROJECT

Lead Agency:

*United States Department of the Interior
Bureau of Land Management*

Environmental Impact Statement FES 12-5

*United States Department of the Interior
Bureau of Land Management
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- Attachment 1. Selected Alternative Map and Analyzed Development Area Map
- Attachment 2. Data Collection and Reporting Requirements and Conditions of Approval
- Attachment 3. Programmatic Agreement
- Attachment 4. Long-term Monitoring Plan for Water Resources
- Attachment 5. Final Biological Opinion for the Gasco Energy Inc. Field Development Project
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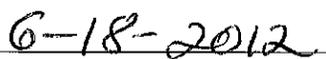
1. APPROVAL

In consideration of the rationale documented in this Record of Decision (ROD), I approve the Gasco Energy Inc. Uinta Basin Natural Gas Development Project as described in the Decision section of this document, subject to the attached Conditions of Approval (COAs).

Approved by:



Juan Palma
State Director
Bureau of Land Management
Department of the Interior



Date

2. SUMMARY

Gasco Energy Inc. (Gasco) proposed to the U.S. Department of the Interior (DOI) Bureau of Land Management (BLM) Vernal Field Office (Vernal FO) to develop oil and natural gas resources within the Monument Butte–Red Wash and West Tavaputs Exploration and Development Areas over a 15-year period. The project area is located in Uintah and Duchesne Counties in Utah, and encompasses approximately 206,826 acres west of the Green River and north of the Duchesne/Uintah and Carbon County line. It is located primarily on BLM-administered lands, but includes private and State of Utah-administered lands. Gasco operates most of the mineral lease rights underlying both the public and private lands in the project area.

The environmental consequences of future oil and gas exploration and development within the project area were evaluated in the *Gasco Energy Inc. Uinta Basin Natural Gas Development Project Environmental Impact Statement* (EIS). Based on the analysis in the Final EIS (FEIS), the BLM's decision is to approve Alternative F: The Agency Preferred Alternative, as described in Section 3 of this ROD. Alternative F addresses the BLM's purpose and need and allows reasonable access to existing leases while protecting sensitive lands surrounding the lower Nine Mile Canyon, the Green River, and Desolation Canyon. A map depicting the conceptual location of well pads, roads, and pipelines that may be constructed in the future is included in Attachment 1. The FEIS considered conceptual locations for this exploration and development project. This decision approves exploration and development only within the development area considered (hereafter referred to as the *analyzed development area*), as shown in Map 1-2 in Attachment 1. Prior to considering approval of exploration or development activities in portions of the project area that are outside the analyzed development area and proximal to the Green River, the BLM would conduct additional site-specific environmental analysis.

Approval of Alternative F meets the BLM's purpose and need, as described in Section 1.3 of the FEIS (BLM 2011a). Approving Alternative F will provide for natural gas exploration and development, minimize impacts on sensitive resources around the Green River, and mitigate impacts on key resources such as floodplains, riparian areas, and wetlands; threatened and endangered species; recreation; cultural resources; air quality; and water resources.

3. THE DECISION

The BLM has determined that the analysis contained in the FEIS is adequate for the purposes of reaching an informed decision regarding the Gasco project. This ROD applies only to the BLM-administered lands and mineral leases.

The decision is hereby made to allow natural gas drilling on leased federal lands, within the analyzed development area depicted in Attachment 1, and as described in the Gasco FEIS Agency Preferred Alternative (Alternative F). Further, future exploration and development activities will be subject to the COAs contained in Attachment 2.

The primary components of the Selected Alternative are described in detail in Section 2.7 of the FEIS and are outlined below. This decision is conceptually depicted in the maps included in Attachment 1. The Selected Alternative was designed to use directional drilling to reduce surface impacts while allowing some strategic vertical drilling to test production potential in areas where formation details are lacking, especially in the southern and western portions of the analyzed development area. The Selected Alternative was also designed to restrict evaporative facility acreage for water disposal, which was a concern of the U.S. Environmental Protection Agency (EPA).

Under the Selected Alternative, Gasco could drill as many as 1,298 new gas production wells from up to 575 pads within the analyzed development area. It is anticipated that Gasco will have to construct up to 198 miles of new roads and 316 miles of new surface or buried water supply and gas gathering pipelines to support their exploration and development activities. Existing compressor facilities will also be expanded by approximately 18,200 horsepower at two gas plants to handle increased production. No new compressor stations will be built.

Under the Selected Alternative, Gasco will be allowed to construct an evaporative facility on BLM-administered land. This facility can be of sufficient capacity to dispose of water from the first 5 years of proposed development to allow time for development of alternative water disposal methods. For the purposes of this decision, it is assumed that the facility will include 12 evaporative basins encompassing approximately 78 acres. After 5 years, the need for the facility would be re-evaluated. The BLM, in consultation with Gasco as appropriate, would determine if the facility should be reclaimed or if it will have to continue to operate. For the purpose of this decision, it is assumed that the facility could remain in operation for the life of the project (an estimated 45 years).

Water disposal needs beyond the capacity of the evaporative facility will be addressed through reduced drilling (based on the limits of the facility) or through alternative water disposal methods. These methods could include treating water for use in waterflood (enhanced oil recovery) operations by other operators, subsurface injection, or other methods. The methods used will depend on the feasibility of alternative disposal methods, as determined through negotiation with providers and other operators and analysis of disposal zones.

Under the Selected Alternative, the BLM will require, monitor, and enforce the following integral components of the Selected Alternative:

- All design features and standard operating procedures of the Selected Alternative, as described in Chapter 2 of the FEIS (unless superseded by the COA). The primary components of this alternative include the following:

- All well pad locations will be located within the analyzed development area, which is illustrated in Attachment 1.
- No well pads will be located within the 100-year floodplains shown in Attachment 1 of this ROD.
- No well pads will be located within line of sight up to 0.5 mile from the centerline of the Green River.
- No well pads will be located within 2 miles of either the Sand Wash campground/boat launch or Desolation Canyon.
- No surface disturbance will be permitted in riparian or wetland areas.
- No well pads or surface disturbance will be located below the rim of Nine Mile Canyon within the existing Nine Mile Canyon area of critical environmental concern (ACEC).
- No new well pads and associated infrastructure will be developed in level 1 cactus conservation areas¹, as depicted in maps sent from the U.S. Fish and Wildlife Service (USFWS) to Gasco on November 28, 2011.
- Well pad surface density will be no more than one pad per approximately 160 acres in areas where the above restrictions do not apply.
- Applicant-committed measures identified in Table 2-1 and Section 2.2.9 of the FEIS, and reiterated in Attachment 2 of this ROD.
- BLM-identified mitigation measures developed by the BLM and its cooperating agencies during the EIS process in consideration of concerns raised by the public, federal agencies, and affected tribes (see Attachment 2).
- Consulting party-identified cultural resource monitoring and mitigating measures, documented in the programmatic agreement (PA) prepared for this project (Attachment 3).
- BLM and EPA-identified water quality monitoring and mitigating measures, documented in the long-term water resources monitoring plan (Attachment 4).
- USFWS Reasonable and Prudent Measures and Terms and Conditions from the project's biological opinion (Attachment 5).

To facilitate the Authorized Officer's (AO) review of Applications for Permit to Drill (APDs) and other site-specific activities, the lands within the analyzed development area are divided into two areas, as depicted on the Analyzed Development Area map (see Map 1-2 in Attachment 1). The lands in Area 2 consist of all of the lands within the analyzed development area that have been (a) inventoried and identified by the BLM as having wilderness characteristics, or (b) are located within a designated ACEC or special recreation management area. The lands in Area 1 consist of all other lands within the analyzed development area. The lands in Area 2 have wilderness or other characteristics that the BLM should consider before it approves ground-disturbing activities (see IM 2011-154) and that may require particularized review under the terms of this decision (see, e.g., Attachment 2, Table 3.2, "Special Designation" requirement to limit drilling seasonally when necessary to minimize disturbance to wildlife, waterfowl, and

¹ Gasco may need up to five new pad locations within level 1 cactus conservation areas in the future. The location and necessity for these well [pads] is unknown at this time. However, if development in level 1 areas becomes necessary, BLM and Gasco will consult with [the USFWS office] on the feasibility, placement, and development of the proposed locations (Attachment 5).

special-status species of particular value within each ACEC). In addition, although some wells have been drilled in certain locales within Area 2, further exploratory drilling is necessary to characterize the geology and nature of the oil and gas resources before specific drilling locations and techniques for purposes of production can be properly determined and applied.

Therefore, after Gasco has completed sufficient exploration of lands within Area 2, and prior to the submission of any APDs for the drilling of field development wells in Area 2, Gasco shall submit to the BLM an updated proposal(s) for field development for all or part of Area 2. The proposal(s) shall reflect its then-current knowledge of the oil and gas resource in Area 2 lands and provide for full implementation of the mitigation measures identified in this decision, including but not limited to the applicant commitment to use directional drilling and drilling of multiple wells from single pads “where technologically and economically feasible and as necessary to reduce or eliminate impacts to sensitive resources of particular concern identified by the AO” (Section 2.2.9 of FEIS). The BLM shall take the updated development plan(s) into account, together with any other relevant information then available to it, such as the current state of technology, the characteristics of the area and related environment, and the effectiveness of mitigation measures, in approving any additional APDs.

4. WHAT THE DECISION DOES NOT PROVIDE

Decisions contained in this document apply only to BLM-administered lands. Agencies that administer adjoining lands and individuals who own adjoining lands may, at their discretion, use all relevant and reasonable mitigation measures contained in this ROD, which have been identified through a comprehensive environmental analysis.

This ROD does not specifically authorize site-specific construction, maintenance, or use of new wells, pads, pipelines, or other facilities on BLM-administered lands. Rather, the proponent or affiliate is required to submit APDs, Sundry Notices, and right-of-way applications for approval of wells, well pads, pipelines, roads, evaporative basins, or other ancillary facilities associated with project development. Site-specific National Environmental Policy Act (NEPA) review and approval of such applications is required prior to initiating surface-disturbing activities within the analyzed development area.

4.1. MITIGATION MEASURES NOT CARRIED FORWARD AS CONDITIONS OF APPROVAL

Adaptive management and all practicable means to avoid or minimize environmental harm have been included in this ROD. However, the following quoted measures from the Gasco FEIS (BLM 2011a) are not carried forward as COAs for the following reasons (Table 1).

Table 1. Mitigation Measures Not Carried Forward as Conditions of Approval

FEIS Measure	Reason(s) the Measure was not Carried Forward as a COA
<p>“If vegetation surrounding the well pad does not provide at least 60% ground cover within 60 days of creating the well pad...” (BLM 2011a:4-367).</p>	<p>This standard was determined to not be feasible due to climate limitations. However, interim and final reclamation is a major component of this project: Gasco is being held to the BLM Green River District Reclamation Standards independent of this ROD, and extensive reclamation COAs are included in Attachment 2. The remainder of this measure dealt with erosion control, which was carried forward into the COAs.</p>
<p>“Surface-disturbing activities would be located a minimum of 0.5 mile from sensitive cultural resources, as identified by the AO through site-specific consultation with the State Historic Preservation Officer (SHPO) and any affected Native American tribes.” (BLM 2011a:4-73).</p>	<p>This mitigation measure was superseded by the PA that was finalized for this project.</p>
<p>“As directed by the AO, breeding bird surveys will be conducted by a qualified biologist within 660 feet (200 m) of proposed surface-disturbing activities associated with well development (e.g., well pads, roads, pipelines, and ancillary facilities) that will occur during the breeding season (April 1–July 31)” (BLM 2011a:4-304).</p>	<p>Occupancy surveys such as this are generally applied to crucial or priority habitat or other discrete areas (raptor nests, sage-grouse leks, etc). The BLM preliminarily identified priority habitat for migratory birds in a 2005 coordinated implementation plan (Martinsen et al. 2005). The habitat near the project area is along the Duchesne River corridor, Green River corridor, and Pariette wetland area (Martinsen et al. 2005).</p>

Table 1. Mitigation Measures Not Carried Forward as Conditions of Approval

FEIS Measure	Reason(s) the Measure was not Carried Forward as a COA
	The Selected Alternative avoids these areas.
When the proposed Pariette and Uinta Basin hookless cactus (<i>Sclerocactus brevispinus</i> and <i>S. wetlandicus</i>) core conservation areas and management for those areas are finalized, and in accordance with the cactus conservation measures (see Appendix B of the FEIS), additional measures to avoid or minimize effects to the species may be developed and implemented in consultation with the USFWS to ensure compliance with the Endangered Species Act.	This mitigation measure was deleted because re-initiation of consultation based on new information on effects outside the original consultation is standard procedure. If the measures in this ROD are sufficient to mitigate impacts after the core conservation areas are finalized, then re-initiation will not be necessary.

5. SUMMARY OF ALTERNATIVES CONSIDERED

5.1. OVERVIEW

Six alternatives were considered in detail in the FEIS. For a complete description of these alternatives, refer to Sections 2.2 through 2.8 of the FEIS. Table 2 and the following subsections highlight the major differences between these alternatives.

Three additional alternatives were considered but eliminated from detailed analysis: Total Avoidance of Development in Sensitive Areas, Wells for Subsurface Water Disposal, and Complete Reliance on Buried Pipelines and Centralized Tank Batteries. Refer to Section 2.9 of the FEIS for a description of these alternatives and the rationale for not carrying them forward.

Table 2. Comparison of Alternatives

	Alternative A (Proposed Action)	Alternative B (Reduced)	Alternative C (Full)	Alternative D (No Action)	Alternative E (Directional)	Alternative F (Agency Preferred)
New wells (#)	1,491	1,114	1,887	368	1,114	1,298
New well pads (#)	1,491	1,114	1,887	368	328	575
New roads (miles)	325	274	526	72	106	198
New pipeline (miles)	431	393	861	316	216	316
Water use over life of plan (acre-feet of treated-recycled water/acre-feet of fresh water)	4,439 (4,151/288)	3,317 (3,102/215)	5,619 (5,254/365)	1,096 (1,025/71)	3,317 (3,102/215)	3,865 (3,614/251)
Well pad surface disturbance (acres)*	5,666	4,233	7,171	1,398	1,370	2,415
New road disturbance (acres)	1,182	996	1,913	262	386	720
New pipeline disturbance (acres)	522	476	1,044	383	262	383
Evaporative facility surface disturbance (acres)	143	135	271	57	135	78
Evaporative basins (#)	20	20	38	8	19	12

Table 2. Comparison of Alternatives

	Alternative A (Proposed Action)	Alternative B (Reduced)	Alternative C (Full)	Alternative D (No Action)	Alternative E (Directional)	Alternative F (Agency Preferred)
Generator size at evaporative facility (horsepower)	2,700	1,980	3,420	720	1,980	1,084
Maximum new compression requirements (horsepower)	21,325	15,608	26,439	5,156	15,608	18,186
Total Disturbance (acres)[†]	7,584	5,685	9,982	2,055	2,174	3,604

* Surface disturbance for Alternatives A, B, C, and D is calculated at 3.8 acres per well. Surface disturbance for Alternatives E and F is calculated at 4.2 acres per well.

† Slightly less than total of separate disturbances due to overlapping in calculation of road and pipeline disturbance areas with well site surface-disturbance areas in the geographic information system (GIS) database.

5.1.1. ALTERNATIVES CONSIDERED

Each of the alternatives considered in detail in the FEIS generally incorporated the same construction, operational, decommissioning, and reclamation methods as described for the Proposed Action in Chapter 2 of the FEIS. Under each alternative, at the end of each well's productive life (approximately 30 years), it would have been plugged and abandoned and the affected area reclaimed. The total life of the project would be approximately 45 years under all action alternatives.

5.1.1.1. ALTERNATIVE A: (THE APPLICANT'S) PROPOSED ACTION

Under Alternative A, Gasco proposed to drill 1,491 new natural gas production wells and construct 325 miles of new roads and 431 miles of water supply and gas gathering pipelines (see Map 3 of the FEIS). Each well was conservatively assumed to have its own pad for the purposes of analysis. Also, up to twenty 450 × 650-foot evaporative basins would have been constructed within a single facility of approximately 143 acres. Over the life of the project, approximately 7,584 acres would have been disturbed.

This alternative was not selected based on the need for additional mitigation measures or design features, such as directional drilling and a smaller evaporative facility, necessary to reduce environmental impacts.

5.1.1.2. ALTERNATIVE B: REDUCED DEVELOPMENT

Under Alternative B, 1,114 new gas production wells would have been drilled, and 274 miles of roads and 393 miles of water supply and gas gathering pipelines would have been constructed

(see Map 4 of the FEIS). Each well was conservatively assumed to have its own pad for the purposes of analysis. Also, up to twenty 450 × 650-foot evaporative basins would have been constructed within a single facility of approximately 135 acres. Over the life of the project, approximately 5,685 acres would be disturbed.

Alternative B was developed based on public scoping to reduce impacts to resources of concern by precluding or reducing surface density of development in sensitive areas. These exclusions or reduced development densities include but are not limited to the following:

- Natural gas development on federal leases would be implemented in a phased manner through surface-disturbance restrictions imposed by the BLM.
- Maximum, new, annual surface disturbance would be limited to approximately 485 acres per year on federal land.
- No well pads would be located within the existing Pariette and Lower Green River ACECs.
- 160-acre surface density would be maintained in all leased areas of the Nine Mile Canyon ACEC, and within the proposed expanded Nine Mile Canyon ACEC, the proposed Four Mile Wash ACEC, and the proposed Myton Bench/Coyote Basin ACEC as described in the *Vernal Proposed Resource Management Plan and Draft Environmental Impact Statement* (BLM 2008a).
- No wells would be located in lands with wilderness characteristics.

This alternative was not selected based on the need for additional mitigation measures or design features, such as directional drilling and a smaller evaporative facility, necessary to reduce environmental impacts. In addition, this alternative would have precluded exploration and development on valid existing leases in areas where wilderness characteristics have been identified.

5.1.1.3. ALTERNATIVE C: FULL DEVELOPMENT

Under Alternative C, it was estimated that 1,887 new wells would have been drilled, and 526 miles of roads and 861 miles of water supply and gas gathering pipelines would have been constructed (see Map 5 of the FEIS). Each well was conservatively assumed to have its own pad for the purposes of analysis. Also, it was assumed that up to thirty-eight 450 × 650-foot evaporative basins would have been constructed on BLM land within a single facility of approximately 271 acres. Over the life of the project, approximately 9,982 acres would have been disturbed.

Alternative C was developed to analyze the effects of a maximum development scenario, including a possible development scenario for leases in Township 10 South, Range 16 East, that are owned by another operator. It was assumed that all leases would be developed with one well pads for every 40, 80, or 160 acres, capitalizing on existing roads where possible.

This alternative was not selected based on the need for additional mitigation measures or design features, such as directional drilling and a smaller evaporative facility, necessary to reduce environmental impacts.

5.1.1.4. ALTERNATIVE D: NO ACTION

Under the No Action Alternative, it was estimated that 368 new wells would have been drilled, and 72 miles of roads and 316 miles of water supply and gas gathering pipelines would have been constructed (see Map 6 of the FEIS). Each well was conservatively assumed to have its own pad for the purposes of analysis. Also, it was assumed that up to eight 450 × 650-foot evaporative basins would have been constructed on BLM land within a single facility of approximately 57 acres. Over the life of the project, approximately 2,055 acres would have been disturbed.

Analysis of the No Action Alternative is required by Council on Environmental Quality NEPA implementing regulations. For the Gasco EIS, the No Action Alternative would not have allowed Gasco to move forward with their proposal, but natural gas exploration and development would have continued on federal lands through exploratory projects previously approved by the BLM, previous NEPA analysis, and approval of wells to meet unit and/or lease obligations. In addition, reasonable access across public lands to proposed well pads and facilities on state and private lands could have also occurred under the No Action Alternative.

Approval of the No Action Alternative would result in the fewest environmental impacts because it describes the smallest number of proposed wells and related facilities. However, it would not allow Gasco, as leaseholder, to develop mineral resources or allow the BLM to facilitate action on future plans related to this proposal; as such, it would not meet the purpose and need of the project, as described in Section 1.3 of the FEIS.

5.1.1.5. ALTERNATIVE E: REDUCED DEVELOPMENT WITH DIRECTIONAL DRILLING

Under Alternative E, 1,114 new gas production wells would have been drilled from 328 pads, and 106 miles of roads and 216 miles of water supply and gas gathering pipelines would have been constructed (see Map 7 from the FEIS). Also, up to nineteen 450 × 650-foot evaporative basins would have been constructed within a single facility of approximately 135 acres. Over the life of the project, approximately 2,174 acres would have been disturbed. Alternative E was developed using the development assumptions from Alternative B as a starting point, but surface impacts were further reduced by integrating directional drilling into the alternative.

This alternative was not selected based on the need for additional mitigation measures or design features, such as a smaller evaporative facility, necessary to reduce environmental impacts. In addition, this alternative would have precluded exploration and development on valid existing leases in areas where wilderness characteristics have been identified.

5.1.1.6. ALTERNATIVE F: THE AGENCY PREFERRED ALTERNATIVE

Under Alternative F, 1,298 wells would have been drilled from 575 pads, and 198 miles of roads and 316 miles of water supply and gas gathering pipelines would have been constructed (see Map 8 of the FEIS). Also, up to twelve 450 × 650-foot evaporative basins would have been constructed within a single facility of approximately 78 acres. Over the life of the project, approximately 3,604 acres would have been disturbed.

Alternative F was developed after the public comment period on the Draft EIS (DEIS) using Alternatives A and E as a starting point. Surface impacts were reduced by requiring directional drilling, limiting the size of the evaporative facility, and incorporating the resource protection

measures described in Section 3.0. Although this alternative was developed as a result of public comment and was first made available to the public through the FEIS, this alternative is contained entirely within the range of Alternatives A through E, as described in the DEIS; therefore, no substantial new information was introduced that would have required the preparation of a supplement to the DEIS. This alternative, as modified by the COAs, is carried forward in this ROD as the selected alternative.

5.1.2. ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Council on Environmental Quality regulations require that a ROD identify one or more environmentally preferred alternative. An *environmentally preferred alternative* is an alternative that would cause the least damage to the biological and physical environment and would best protect, preserve, and enhance historic, cultural, and natural resources. The BLM has determined that Alternative E: Reduced Drilling with Directional Drilling is the environmentally preferred alternative.

Approval of Alternative E: Reduced Drilling with Directional Drilling would have the lowest levels of surface disturbance and development of all action alternatives. This alternative was not selected because it would have precluded exploration and development on valid existing leases in areas where wilderness characteristics have been identified and would therefore not meet the purpose and need of the project, as described in Section 1.3 of the FEIS. In addition, the size of the evaporative facility could have been reduced to further minimize environmental impacts.

6. MANAGEMENT CONSIDERATIONS

The BLM developed the Gasco EIS to allow the Decision Maker to render an informed decision regarding Gasco's proposed project. Based on the FEIS analysis, management determined that approval of the Selected Alternative's exploration and development in the analyzed development area would best avoid or reduce impacts to sensitive resources (as described in Section 3 of this ROD), while also allowing exploration and development on valid existing leases throughout the project area. Therefore, it would best meet the purpose and need of the project, as described in Section 1.3 of the FEIS. The following sections outline additional considerations that contributed to the BLM's approval of the Selected Alternative.

6.1. THE PURPOSE AND NEED OF THE PROJECT

The purpose of the BLM's action was to respond to Gasco's proposal and to facilitate action on future plans and on applications related to the proposal while reducing environmental impacts. The Selected Alternative best allows exploration and development of the project area leases while minimizing or eliminating impacts to the following: (1) the Green River and 100-year floodplains, as well as native fish species; (2) recreational users and the viewshed of the Green River corridor; (3) riparian and wetland areas; (4) visual and cultural resources in Nine Mile Canyon; (5) Pariette (*Sclerocactus brevispinus*) and Uinta Basin hookless (*Sclerocactus wetlandicus*) cactus species; (6) air quality; and (7) water quality. Many of the concerns that were raised by the public during the formal scoping and the comment periods on the DEIS focused on these issues.

The BLM's need for the project was to fulfill its responsibilities under federal laws and federal oil and gas leases to allow leaseholders to develop mineral resources to meet continuing national energy needs and economic demands. The Selected Alternative provides for the production of an estimated 1.37 trillion cubic feet of natural gas resources that are important to local and state economies. These resources are needed to meet energy demands in the United States.

6.2. CONFORMANCE WITH BLM LAND USE PLANS

The Selected Alternative will take place in the Vernal FO, which is managed under the Vernal FO *Record of Decision and Approved Resource Management Plan* (Vernal RMP; BLM 2008b). The Selected Alternative is consistent with the Vernal RMP management decisions and the goals and objectives for mineral and energy resources. The BLM has determined that the Selected Alternative does not conflict with other Vernal RMP decisions such as management decisions for the Nine Mile Canyon Special Resource Management Area and ACEC, the Pariette Wetlands Complex ACEC, Lower Green River Corridor ACEC, Lower Green River eligible Wild and Scenic River, or other natural resources.

6.3. ALTERNATIVES

A brief description of the analyzed alternatives, including the environmentally preferable alternative, is included in Section 5.0 of this ROD. A rationale is also provided to explain why the alternatives were or were not selected.

7. CONSULTATION, COORDINATION, AND PUBLIC INVOLVEMENT

Consultation and coordination for the Gasco project is described in Chapter 5 of the FEIS. A summary of these efforts follows.

7.1. COOPERATING AGENCIES

The following cooperating agencies were given opportunities to review internal drafts and provide feedback during the development of the DEIS and FEIS. Their feedback helped refine the alternatives, the impact analysis, and the impact mitigation.

Duchesne County: Duchesne County was invited to be a cooperating agency in the EIS process on April 5, 2006. The invitation was accepted, and a cooperating agency memorandum of understanding (MOU) was signed on April 20, 2006. Preliminary drafts of the EIS were provided to Duchesne County for review.

Uintah County: Uintah County was invited to be a cooperating agency in the EIS process on April 5, 2006. The invitation was accepted and a cooperating agency MOU was signed on May 19, 2006. Preliminary drafts of the EIS were provided to Uintah County for review.

Ute Indian Tribe: The Ute Indian Tribe was invited to be a cooperating agency in the EIS process multiple times beginning on April 5, 2006. No response was received. Government-to-government consultation was conducted, as described in Section 7.4 below.

U.S. Army Corp of Engineers: The Corps reviewed preliminary drafts of the EIS under the Energy Pilot Office program MOU. Preliminary drafts of the EIS were provided to the Corps for review.

U.S. Bureau of Indian Affairs, Uintah and Ouray Agency: The bureau was invited to be a cooperating agency in the EIS process on April 5, 2006. The invitation was accepted, and a cooperating agency MOU was signed on April 18, 2006. Preliminary drafts of the EIS were provided to the bureau for review.

USFWS, Utah Field Office: The USFWS reviewed preliminary drafts of the EIS through the Energy Pilot Office program MOU. Consultation under Section 7 of the Endangered Species Act has been conducted, as described in Section 7.5.

7.2. ENVIRONMENTAL PROTECTION AGENCY REGION 8 COORDINATION

Close coordination was initiated with the EPA upon receipt of their comment letter for the DEIS, which expressed concerns regarding the evaporative facility (air and water quality protection and water disposal options), environmental justice, and air quality modeling and mitigation. Multiple conference calls and face-to-face meetings were held to discuss methods to resolve these concerns. After a resolution was reached, the appropriate changes were made, and the EPA was given an opportunity to review the administrative FEIS to ensure that the concerns were adequately addressed by the changes. The following sections briefly describe how these concerns were resolved. A detailed response to the comments in EPA's comment letter is included in the FEIS Appendix P (Response to Comments).

To address evaporative facility concerns, the size of the evaporative facility was limited to the capacity needed to dispose of water from the first 5 years of proposed development; this was

done to allow time for development of alternative water disposal methods. After 5 years, the continued need for the facility would be evaluated. Water disposal needs beyond the capacity of the evaporative facility would be addressed through reduced drilling (based on the limits of the facility) or through alternative water disposal methods. These methods could include but are not limited to subsurface injection or treating water for use in waterflood (enhanced oil recovery) operations by other operators. Water quality concerns were addressed by creating a water monitoring plan (see Attachment 4). This plan contains an adaptive strategy to track upstream and downstream surface and groundwater quality and outlines an adaptive management strategy to respond to water quality degradation.

Environmental justice concerns were addressed by updating the analysis in the FEIS to disclose any potential disproportionate adverse effects to environmental justice communities. The water quality, air quality, and traffic impact analyses were specifically scrutinized to ensure accurate and adequate impact analysis for environmental justice communities.

The FEIS was also updated to incorporate the best available measures for addressing air quality impacts. This includes extensive applicant-committed measures as well as an adaptive management strategy that allows the BLM to adjust future site-specific implementation of the decision based on new air quality data that are being gathered or generated on a Utah-wide basis through the Utah Air Resource Technical Advisory Group and the BLM's Air Resource Management Strategy (ARMS). The ARMS has been designed to develop an ozone action plan to address wintertime ozone formation in the Uinta Basin associated with oil and gas operations through adaptive management. The ARMS consists of the following elements: (1) refine air quality modeling predictions; (2) develop a Uinta Basin ozone action plan; and (3) implement a regional ozone action plan. The first two elements of ARMS are being implemented by the BLM and other agency stakeholders independent of this ROD. Regional operators may participate in these initial planning steps, thereby having the opportunity to contribute to the outcome of the process. The third element would require specific action by Gasco and other oil and gas operators in the Uinta Basin. Until the ARMS is completed, a project-specific adaptive management plan for air quality has been developed and is included as a COA of this project. When the ARMS is completed (currently estimated to be near the end of 2012), site-specific implementation of this project will be adjusted as necessary.

7.3. NATIONAL HISTORIC PRESERVATION ACT SECTION 106 CONSULTATION

Based on public comments to the DEIS, the BLM initiated consultation under Section 106 of the National Historic Preservation Act with interested parties to define the area of potential effects and to identify anticipated cultural resource impacts. All groups who expressed interest in the project were invited to participate in the process, as well as the 12 tribes with historic ties to the Uinta Basin. These meetings resulted in development of a PA to protect cultural resources in the project area. The following were signatories to the PA: the Advisory Council on Historic Preservation, Utah SHPO, the BLM Vernal FO, Gasco Energy Inc., Utah School and Institutional Trust Lands Administration, the Duchesne County Commission, and the Uintah County Commission. Project correspondence from Utah SHPO is included in Attachment 6. The PA includes biennial updates and a process for notifying participants of any changes to the project or new information.

Consultation and reporting will occur in accordance with the PA upon site-specific implementation of this ROD. If new or complex issues are encountered that are not addressed in the PA, consultation will occur in accordance with PA Stipulation 13 (see Attachment 3).

7.4. GOVERNMENT-TO-GOVERNMENT CONSULTATION

The analyzed development area is in an area historically used by 12 tribes and is close to the Ute Indian Tribe Uintah and Ouray Reservation. Tribal consultation was conducted with all 12 tribes. In addition, they were invited to participate in the post-DEIS National Historic Preservation Act consultation and subsequent PA development. Ute Indian Tribe, Eastern Shoshone, Hopi Tribe, and Navajo Nation representatives attended one or more meetings during development of the PA. The Ute Indian Tribe and Eastern Shoshone representatives provided no verbal or written feedback regarding the project. The Hopi Tribe sent a letter stating that they were concerned with the project's potential to impact cultural resources within Nine Mile Canyon. Later, the Hopi verbally indicated that their concerns were resolved by the participation of the Advisory Council on Historic Preservation in the consultation process. The Navajo Nation submitted a letter indicating that the Proposed Action may impact Navajo traditional cultural resources and requesting to be kept informed as the project progresses and if any changes occur. This concern has been addressed by the PA, which includes a process for a biennial update and a process for notifying participants of any changes to the project or new information. Although they did not participate in the PA process, a letter was received from the Pueblo of the Laguna stating they did not have concerns with the project. Project correspondence from the tribes is included in Attachment 6.

Continuing tribal consultation will occur upon site-specific implementation of this ROD in accordance with the PA Stipulation 2, which states that ". . . the BLM will continue to consult with appropriate Indian Tribes regarding historic properties of religious and cultural significance. The BLM will provide copies of any reports or studies developed pursuant to the PA to those tribes that have expressed a desire for information as it is gathered for the project. Independent consultants will provide the BLM with adequate report copies to facilitate the BLM's tribal consultation."

7.5. ENDANGERED SPECIES ACT SECTION 7 CONSULTATION

The BLM coordinated with the USFWS throughout the preparation of the EIS through the Energy Policy Act Pilot Office program. Based on an agreement between the BLM and USFWS, the preliminary FEIS was used as the biological assessment for this project; it was submitted to the USFWS on September 15, 2011, to initiate formal consultation regarding the impacts associated with Alternative F. The USFWS signed a biological opinion on December 22, 2011. The biological opinion is included as Attachment 5 of this ROD.

All reasonable and prudent measures and terms and conditions from the biological opinion have been carried forward as COAs for this ROD.

One FEIS mitigation measure and several USFWS conservation recommendations suggested special status species data collection and monitoring programs that had a scope larger than this project and project area. These measures will be implemented on BLM-administered land by the USFWS and the BLM independent of this ROD.

Gasco should consider implementing the following USFWS-identified project-specific conservation recommendations, as appropriate, and the USFWS has requested to be notified when they are implemented. However, the BLM has no authority to enforce their implementation; for example, maintenance of existing facilities does not require a BLM permit.

- Gasco employees should notify the USFWS or the BLM immediately if they observe nonfederal or nonproject-related personnel looking for *Sclerocactus*, or notice other suspicious behavior that may indicate illegal collection of the species.
- During maintenance activities of infrastructure that crosses through occupied cactus habitat, applicants should protect the cactus by:
 - notifying maintenance crews when they will be working in a sensitive cactus area and provide them with global positioning system information or maps of areas to avoid;
 - having a botanist on-site prior to and during maintenance activities to flag cacti or avoidance areas (remove the flags immediately after work is completed); or
 - installing protective fencing (e.g., silt fencing) around cacti that are downslope or downwind of surface-disturbing maintenance activities (remove the fencing immediately after work is completed).
- The project applicant should work with the USFWS to identify and fund contaminant studies related to oil and gas development in the Uinta Basin and its potential effects on aquatic environments. These studies may include but are not limited to determining presence of polyaromatic hydrocarbons in the system, analyzing fish tissue for presence of mercury, and examining reclaimed reserved pits and their potential to contaminate surrounding soils.

7.6. PUBLIC INVOLVEMENT

7.6.1. PUBLIC SCOPING

A notice of intent was published in the *Federal Register* on February 15, 2006, announcing the Vernal FO's preparation of an EIS for the Gasco Energy Field Development Project. During the 30-day scoping period (February 10 to March 13, 2006), the Vernal FO received numerous letters outlining the primary concerns of the public. These letters are included in the project administrative record. The issues of concern raised during scoping are summarized in Section 1.5 of the FEIS.

7.6.2. DRAFT ENVIRONMENTAL IMPACT STATEMENT

A notice of availability was published in the *Federal Register* on October 1, 2010, announcing the availability of the *Gasco Energy Inc. Uinta Basin Natural Gas Development Project Draft EIS* for public review and comment. During the 90-day comment period (October 1, 2010 through December 30, 2010), the Vernal FO received 4,170 letters commenting on the DEIS. In preparing the FEIS, the BLM considered all comments. Appendix P of the FEIS contains a description of the comment analysis and response process as well as each unique substantive comment received, and its associated response.

Comments received during the DEIS public comment period focused on impacts to cultural resources within Nine Mile Canyon, the Green River and associated recreation, 100-year floodplains and endangered fish critical habitat, water quality (surface and ground), air quality, lands with

wilderness characteristics, and valid existing lease rights. No single alternative from the DEIS (Alternatives A through E) adequately addressed the concerns raised. The BLM, in close coordination with the USFWS and EPA, used attributes of Alternatives A through E to create Alternative F to respond to those concerns. All aspects of Alternative F are contained entirely within the range of alternatives analyzed in the DEIS. Consequently, a determination was made that preparation of a supplement to the DEIS was not necessary.

7.6.3. FINAL ENVIRONMENTAL IMPACT STATEMENT

A notice of availability was published in the *Federal Register* on March 16, 2012, announcing the *Gasco Energy Inc. Uinta Basin Natural Gas Development Project Final EIS*. During the 30-day waiting period (March 16, 2012 through April 16, 2012), the Vernal FO received a comment letter from the EPA regarding the resolution of their concerns with the DEIS. A summary of their comments is presented in Table 3.

Table 3. EPA Comments on the Final Environmental Impact Statement

Subject	Comment
General	We believe the FEIS represents a considerable improvement in the adequacy of the analysis of the project's potential impacts. While impacts certainly remain, the new Preferred Alternative substantially reduces potential impacts to air quality and water resources.
Preferred Alternative	<p>1. The EPA expects the new alternative to have fewer overall impacts than Alternative A. We are specifically encouraged by the BLM's efforts to: 1 – reduce reliance on evaporation ponds through enhanced water management techniques; 2 – reduce surface disturbance through the increased use of directional drilling; and, 3 – reduce potential air quality impacts through the use of additional air quality mitigation measures.</p> <p>2. EPA also wishes to stress the importance of ensuring that the Operator be required to fully adhere to the applicant committed best management practices and BLM mitigation requirements and that the BLM ensure the anticipated impacts remain mitigated through inspections and enforcement. We understand and support that these important measures will be documented in the ROD.</p>
Air Quality	Notably the BLM has performed additional analysis of emissions of HAPs [hazardous air pollutants] associated with the evaporation ponds, and addressed impacts to the 1-hour standard for NO ₂ . The EPA supports the BLM's commitment to remodel project specific ozone impacts within two years of signing the ROD, as one of several triggers described in the adaptive management strategy that may determine the need for additional ozone mitigation. We understand that the applicant-committed ozone BMPs [best management practices] will be documented in the ROD and support the BLM's reevaluation commitment as additional information becomes available.
Water Resources	At a minimum, we urge the BLM to incorporate the following BMPs in the ROD: a closed loop drilling system in certain sensitive areas, additional erosion and sedimentation controls, including measures from the Pariette Draw TMDL [total maximum daily load], and a requirement to conduct cement bond log surveys to verify cement adequacy. The Long Term Monitoring Plan for Water Resources greatly improves the BLM's ability to detect and mitigate unanticipated impacts, thereby reducing impacts, and offer continued assistance for finalizing the monitoring network details.
Environmental Justice	We are pleased to see that the BLM's enhanced EJ [environmental justice] analysis did not identify any adverse disproportionate impact to EJ communities.

Five other letters with substantive comments on the FEIS were received during the 30-day waiting period. Most comments were previously answered in Appendix P of the FEIS. New comments and brief responses are included in Table 4. All comments received on the FEIS were compared to the DEIS comment responses documented in the FEIS. This comparison is included in the administrative record. As a result of this process, a few minor changes were made to the FEIS; these are documented in Section 8 of this ROD, the errata to the FEIS.

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response
National Outdoor Leadership School	No wells should be within ½ mile or line of sight of the river, whichever is greater.	The current wording is consistent with the Vernal RMP. There are many other COAs included in this ROD that will minimize impacts to river recreation.
Gasco Energy Inc.	1. The BLM’s decision to restrict surface occupancy to 1 pad per 160 acres is not based on the specific protection of any resource, and is inconsistent with Kerr-McGee’s FEIS.	1. As described in the FEIS Section 2.7, directional drilling was incorporated to reduce surface impacts in general (BLM 2011a). Comparing Gasco’s and Kerr-McGee’s surface density is inappropriate because Gasco is an exploration and development project and Greater Natural Buttes is an infill project.
	2. Ozone is not a concern and BLM’s onerous air quality measures are unnecessary.	2. Although 2012 winter ozone readings were low, the two previous years’ data have demonstrated the need for additional efforts to minimize impacts to air quality.
Ivan White and Steven Tanner	The FEIS does not have adequate measurements or modeling to account for cumulative dust pollution impacts to Nine Mile Canyon from the Gasco project and the West Tavaputs project.	This comment was addressed in the FEIS. In addition, the BLM is operating air pollution monitoring equipment in Nine Mile Canyon to characterize ambient air quality concentrations in the canyon, and they are tracking and assessing the effectiveness of dust control measures being employed in the canyon. Ozone monitoring began in spring 2011, and particulate monitoring began in spring 2012. Data from the monitoring will be publically available through the BLM’s Utah State Office website.
Southern Utah Wilderness Alliance, Natural Resources Defense Council, The Wilderness Society, and the Utah Chapter of the Sierra Club (collectively “SUWA”)	1. The EPA recommended that the BLM adopt specific mitigation measures to avoid groundwater impacts. EPA at 16 of 25. However, the BLM failed to adopt many of these.	1. The EPA helped develop a water monitoring plan, including the mitigation measures in it, and it is incorporated into the Selected Alternative.
	2. The EPA stated that the Gasco DEIS inadequately dealt with and discussed spill prevention. The Gasco FEIS still generally lacks discussion of potential impacts from a spill.	2. Table 2-1 (page 2-3) and Section 2.2.9.12 contain information regarding the Spill Protection, Control, and Countermeasure plan that includes a spill response strategy. Section 4.15.1.1.1.2 contains a discussion of the impacts to groundwater from a spill. Page 4-348 contains a discussion of the impacts to surface water from a spill.
	3. Gasco FEIS does not consider impacts to Ouray specifically or mention other non-census enumerated cities. Furthermore, the FEIS does not define the affected area based on location of impacts; it still follows a proximity analysis.	3. This analysis is based on Census Designated Places. Ouray is not a Census Designated Place. The approach was closely coordinated with the EPA to ensure completeness of the analysis. The analysis is not based solely on proximity.

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response
	<p>4. The BLM has not considered the impacts of the Gasco project and cumulative impacts from other ongoing and planned development on plants sensitive to ozone in Dinosaur National Monument and Arches National Park.</p>	<p>4. The ozone secondary National Ambient Air Quality Standard (NAAQS) is intended to be protective of vegetation. The modeled summer concentrations for ozone meet this NAAQS near Dinosaur National Monument. Although it is possible during winter cold pool events that secondary ozone NAAQS may be exceeded in the Dinosaur National Monument area, what effect this may have, if any, on vegetation communities is unknown, nor are there any data or research available to draw conclusions. Research on ozone damage to plants during the winter is nonexistent. The National Park Service's (NPS's) only suggestion regarding responding to ozone is that the BLM develop an adaptive management strategy to take care of the ozone concerns. The BLM has done this.</p>
	<p>5. Much is made in the Gasco FEIS about reviewing and revising ozone analysis in the future at the project-specific stage. However, the BLM practice shows that project-specific approvals, particularly for small projects, simply skirt this issue.</p>	<p>5. The BLM is responding to ozone on a basin-wide scale because ozone is a regional issue. The ARMS is designed to better define the source of the ozone problem so that effective mitigation measures can be determined and standardized. However, the ARMS is not ready for implementation yet, so the Gasco air adaptive management strategy was developed to allow ARMS incorporation in the future. The small projects SUWA cites were required to use presumptive-best available control technologies as a result of an analysis incorporated by reference from other projects, specifically the Greater Natural Buttes and Gasco EISs. Using a relevant analysis to make control and management decisions on applicable projects is within the discretion of NEPA.</p>
	<p>6. The FEIS's analysis of Alternative F fails to take into account the impacts from the development of the alternative plus the development of non-Gasco leases on federal, state, and private lands within the Gasco project area. Thus the direct and indirect effects of developing these leases should be viewed as being "caused by" the Gasco project and analyzed as part of Alternative F.</p>	<p>6. Reasonably foreseeable projects on non-Gasco leases, such as the Greater Monument Butte EIS, were included in Table 4-155 because they are cumulative actions. They are not connected actions to be included in Alternative F because their development may or may not proceed independent of the Gasco ROD. Similarly, actions on non-Gasco leases are cumulative actions, not connected actions. However, the impacts from development of non-Gasco leases were included in the range of alternatives (see the Full Development alternative). In addition, this is a programmatic analysis; therefore, on-the-ground placement of the well locations identified in all of the alternatives is currently unknown.</p>
	<p>7. The FEIS does not mention or consider the BLM's <i>Climate Change, Supplemental Information Report, Montana, North Dakota, and South Dakota</i> (2010); this</p>	<p>7. The Gasco FEIS analysis follows the BLM policy on disclosing impacts to climate change.</p>

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response																																								
	document is helpful for understanding what analysis the Gasco FEIS still lacks in this area.																																									
	8. The Gasco FEIS fails to fully consider the cumulative impacts of this project combined with other ongoing, planned, and reasonably foreseeable activities in the Uinta Basin. The Gasco FEIS does not incorporate the BLM's latest understanding and projections related to the cumulative impacts from oil and gas in the Uinta Basin. See BLM, <i>Greater Uinta Basin Oil and Gas Cumulative Impacts Technical Support Document</i> (Mar. 2012).	<p>8. The <i>Greater Uinta Basin Oil and Gas Cumulative Impacts Technical Support Document, March 2012</i> (BLM 2012) was not available during the preparation of the Gasco FEIS. The differences between the two scenarios (updated to include selection of the Preferred Alternative) are within 3%–11% of each other, as shown below. If the technical support document information outside the Vernal FO was removed from the technical support document to match the Gasco cumulative impact areas, the actual difference between the two scenarios would be even smaller. Although the 2012 reasonably foreseeable development (RFD) differs from the Gasco FEIS, the FEIS provides sufficient information to understand the incremental impact of the Gasco alternatives when added to past, present, and reasonably foreseeable actions.</p> <table border="1" data-bbox="1119 748 1743 1344"> <thead> <tr> <th></th> <th>Wells (#)</th> <th>Pads (#)</th> <th>Surface Disturbance (acres)</th> </tr> </thead> <tbody> <tr> <td colspan="4" style="text-align: center;">2012 Technical Report RFD</td> </tr> <tr> <td></td> <td>28,417</td> <td>15,796</td> <td>72,774</td> </tr> <tr> <td>Difference between Alt. A and Selected Alt.</td> <td>-193</td> <td>-539</td> <td>-3,980</td> </tr> <tr> <td>Full RFD</td> <td>28,224</td> <td>15,257</td> <td>68,794</td> </tr> <tr> <td colspan="4" style="text-align: center;">Gasco RFD</td> </tr> <tr> <td>RFD in Table 4-166</td> <td>23,814</td> <td>14,394</td> <td>63,213</td> </tr> <tr> <td>Selected Alt.</td> <td>1,298</td> <td>575</td> <td>3,604</td> </tr> <tr> <td>Full RFD</td> <td>25,112</td> <td>14,969</td> <td>66.817</td> </tr> <tr> <td>Difference</td> <td>11%</td> <td>2%</td> <td>3%</td> </tr> </tbody> </table>		Wells (#)	Pads (#)	Surface Disturbance (acres)	2012 Technical Report RFD					28,417	15,796	72,774	Difference between Alt. A and Selected Alt.	-193	-539	-3,980	Full RFD	28,224	15,257	68,794	Gasco RFD				RFD in Table 4-166	23,814	14,394	63,213	Selected Alt.	1,298	575	3,604	Full RFD	25,112	14,969	66.817	Difference	11%	2%	3%
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	9. The EPA wrote that the BLM's cumulative impact assessment	9. The Gasco EIS RFD was updated in the FEIS to account for additional development; as such, the cumulative analysis for many resources (cultural,																																								

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response
	<p>significantly understated the reasonably foreseeable development [RFD] scenario in the area and that it needed to be updated along with the cumulative assessment of all other resources of concern. Although the FEIS increased its RFD, it did not modify many facets of its analysis accordingly. The FEIS did not update ozone modeling from the DEIS, even though the RFD well count has been updated.</p>	<p>land use and transportation, livestock, socioeconomics, special designations, water, and wilderness characteristics) was revised substantially because of the updated RFD scenario. In other cases, the general type of cumulative impacts remained the same under the DEIS and FEIS RFD scenarios; therefore, the RFD was a key indicator of the intensity. These analyses were updated in terms of both the intensity and context of cumulative impacts directly through the updating of the RFD.</p> <p>Per 40 Code of Federal Regulations 1502.21, agencies may incorporate material into an EIS by reference to cut down on bulk. The Gasco FEIS was updated to incorporate the Greater Natural Buttes DEIS ozone analysis. The Greater Natural Buttes DEIS emissions inventory included the Gasco proposal and two other projects that Gasco DEIS comments suggested should be added to the Gasco FEIS cumulative analysis (the West Tavaputs and Chapita Wells projects); it was therefore appropriate to use in lieu of updates to the Gasco (Appendix J) model, which relied on a less recent Western Regional Air Partnership inventory.</p>
	<p>10. The FEIS's treatment of Greater Sage-grouse is inconsistent with current BLM policy, as contained in IM [Instruction Memorandum) 2012-043. The BLM must update the information regarding the sage-grouse lek and sage-grouse preliminary priority habitat. The Gasco FEIS does not comply with the relevant terms and requirements of IM 2012-034, or the suggestions from the USFWS regarding sage-grouse mitigation measures.</p>	<p>10. IM 2012-043 was not available until after the completion of the analysis for this project. However, the BLM coordinated with both the USFWS and the Utah Division of Wildlife Resources (DWR) when preparing the Gasco EIS. DWR confirmed on 4/26/2012 that the lek is still inactive (male birds were last seen in 2000, and a single hen was last seen in 2003), though wintering birds have been seen recently. No new leks are in the project area. Preliminary priority habitat (PPH) for sage-grouse is identified by the shape files associated the IM. The shape files indicate that less than half of the sage-grouse habitat analyzed in the Gasco FEIS is actually PPH. Some of the PPH in the shape files do not overlap with the habitat analyzed in the Gasco EIS, but this is a programmatic document, and as such, site-specific placement of the well pads is not known under any alternative. Mitigation was identified on a programmatic level; however, the site-specific adequacy of the mitigation to protect sage-grouse habitat cannot be determined until a site-specific application is received. Impacts disclosed in the Gasco FEIS are therefore conservative and sufficient to make a reasoned choice among alternatives. The USFWS requested that a 4-mile buffer was tied to active leks, and as such, it does not apply to this project.</p>
	<p>11. The FEIS does not mitigate impacts to</p>	<p>11. Although no specific mitigation measures were identified for wilderness</p>

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response
	lands with wilderness characteristics, is inconsistent with Secretarial Order 3310, and does not follow BLM Manuals 6301, 6302, or 6303.	characteristics, they will benefit indirectly by the implementation of other resources mitigation measures and directional drilling. The BLM is currently prohibited by U.S. Congress from spending any federal funds to implements Secretarial Order 3310's requirements. See Public Law No. 112-74, Division E, Title I, Section 125 (2011). Furthermore, even if the order constituted significant new information, it could not be taken into account in the EIS. The cited manuals have been withdrawn; the BLM cannot implement a withdrawn manual.
Megan Williams, for SUWA	1. The BLM must complete additional ozone modeling to address EPA's and NPS's technical concerns and that accounts for the increase in VOC [volatile organic compounds] emissions projected under Alternative F.	1. Any additional modeling will neither improve our understanding of winter ozone formation nor change the likely results for summer ozone formation. All modeling done to date has shown general compliance with the ozone NAAQS during the summer, which has been supported by recent air monitoring, and no models exist that can address winter ozone.
	2. The revised ozone background concentration of 117 ppb [parts per billion] clearly shows that ozone concentrations already exceed the NAAQS, even without considering the potential impacts from the Gasco project, and therefore the BLM cannot approve further development that would impact ozone concentrations in the region without a modeling analysis that would demonstrate adequate mitigation measures to prevent further exceedances of the ozone NAAQS.	2. As noted in FEIS Section 3.2.3.1.6.5 (Summary), ozone concentrations during winter inversion events are being monitored well above the current ozone NAAQS. Summer ozone concentrations, although elevated above what would be considered normal background levels, are below the current NAAQS. The high ozone levels reported in the Uinta Basin in winter 2010 prompted the BLM to begin developing an adaptive management strategy for Uinta Basin operations. This adaptive management strategy will address ozone levels in excess of the NAAQS with the goal that this and other oil and gas development projects in the basin under the BLM jurisdiction would not contribute to ozone exceedances.
	3. Based on UDAQ's [Utah Division of Air Quality] statement in 2008 that background PM ₁₀ concentrations must be based on recent PM [particulate matter] measurements in the Vernal area (63.3 µg/m ³ [micrograms/cubic meter]), near-field modeling of operation sources indicates that 24-hour PM ₁₀ concentrations will exceed the NAAQS. BLM must include	3. 24-hour PM ₁₀ background values were based on the closest representative monitored data. The background value for the annual PM _{2.5} and 24-hour PM _{2.5} concentrations as cited in the Gasco FEIS were based on the data available from the Greater Natural Buttes SDEIS (BLM 2011b) when the Gasco FEIS was published. Actual impacts to the 24-hour PM _{2.5} values are anticipated to remain below the NAAQS due the conservative nature of the modeling inputs. Actual PM _{2.5} values from monitors located on or close to the project area are showing values well below the modeling results. See Table 2.2 in Attachment 2 of the ROD for COAs related to for air quality.

Table 4. Comments on the Final Environmental Impact Statement

Name	Comment	Response
	<p>additional mitigation measures to ensure that PM₁₀ emissions from the proposed operation sources do not contribute to NAAQS exceedances in the area. It is still unclear from the BLM's response to comments for the FEIS if the modeling accounted for simultaneous development and operation activities.</p>	<p>See response to comment 028-O-36 in Appendix P of the Gasco FEIS regarding concurrent development and operations. The developmental impact analysis conservatively assumed that well pad and access road construction, drilling, and completion activities would occur simultaneously. No violation of NAAQS was predicted under these modeling scenarios.</p>
	<p>4. For PM_{2.5}, the background concentration used in the FEIS also was revised (downward) without regard for more recent monitoring data. Background concentrations for the FEIS must consider these and other higher concentrations recorded in the area. The BLM must use the highest of the 98th percentile values from the monitoring records from the Vernal, Roosevelt, Ouray and Redwash monitors, and must fully consider wintertime inversions.</p>	<p>4. The background value for the annual PM_{2.5} and 24-hour PM_{2.5} concentrations, as cited in the Gasco FEIS, were based on the data available from the Greater Natural Buttes SDEIS (BLM 2011b) when the Gasco FEIS was published. Actual impacts to the 24-hour PM_{2.5} values are anticipated to remain below the NAAQS due the conservative nature of the modeling inputs. Actual construction times would be on the order of weeks, not months. Because the NAAQS is based on an annual average, actual construction activities are not anticipated to affect the annual average of PM_{2.5} to the degree the model estimates. Actual PM_{2.5} values from monitors located on or close to the project area are showing values well below the modeling results. UDAQ PM_{2.5} monitoring data can be found at http://www.airmonitoring.utah.gov/dataarchive/archpm25.htm EPA Ouray and Redwash monitoring data can be found at http://www.epa.gov/airexplorer/index.htm.</p>

In addition to the letters, the Vernal FO and the Secretary of the Interior received many petitions regarding the Gasco FEIS. A summary of all letters and petitions and their contents is included in Table 5.

Table 5. Petition and Comment Letter Summary

Main Point	Number of Petitions and Letters
Opposed to drilling in Desolation Canyon and the Green River corridor	7 emails, and 1 letter from the National Outdoor Leadership School Letter
Opposed to the project in general	1 email
Opposed to drilling on lands with wilderness characteristics.	8,568 signatures on 1 electronic petition and 3 emails
Supportive of Alternative E	6,544 signatures on 2 electronic petitions, 8 emails/letters, and 1 letter from six congressional representatives
Supportive of Alternative F	1 letter from 3 Utah congressmen, 1 letter from EPA, 1 letter from Gasco, and 1 letter from Western Energy Alliance
Various concerns regarding the document's adequacy	1 letter from SUWA, 1 letter from Megan William, and 1 letter from Ivan White/Steven Tanner

8. ERRATA

8.1. ERRATA TO THE FINAL ENVIRONMENTAL IMPACT STATEMENT

The errata section of this ROD illustrates the BLM’s revisions to the FEIS. The revisions have been developed from either comments received or BLM’s internal review of the FEIS. ~~Strike-outs~~ indicate that text has been removed from the FEIS. **Bold** indicates that text has been added or revised for the FEIS.

8.1.1. CHAPTER 2

Page 2-23, Section 2.2.3

Finally, the large drilling rig would finish drilling the well from 3,500 feet to a TD of up to 20,000 feet. The rig pumps fresh water as a circulating fluid to drive the mud motor, cool the drill bit, and remove cuttings from the wellbore. In order to achieve borehole stability and minimize possible damage to the hydrocarbon producing formations, a potassium chloride substitute, usually a fertilizer known as diammonium phosphate, and commercial clay stabilizer would be added to the **fresh water-based** drilling fluid. Also, a polyacrylamide polymer would be added to the drilling fluid to provide adequate viscosity to carry the drill cuttings out of the wellbore. From time to time, other materials may be added to the fluid system, such as sawdust, natural fibers, or paper flakes, to reduce downhole fluid losses. No potassium chloride, chromates, or any hazardous materials would be mixed in the drilling fluid.

8.1.2. APPENDIX H

Page H-2, Excerpt from Table 2-1

Table 2-1. GASCO Annual Emissions for the Proposed Action

Pollutant	Project Emissions (tons/year)		Total Emissions ^a (tons/year)
	Well Development	Project Production	
<i>Criteria Pollutants & VOC</i>			
NOx	1,303	628	1,931
CO	422	380	802
VOC	103	2,421^c 2,241^e	2,524^c 2,574^e

8.1.3. APPENDIX J

Page 37, New Table 5-5

Table 5-5. Ozone concentration details in project impact area for figures included in Gasco Energy, Inc. Uinta Basin Natural Gas Development Project Environmental Impact Statement (April 2010).

Metric	2005 Meteorological Year		2006 Meteorological Year	
	Max. Cell (ppb)	Grid Cells over 75 ppb	Max. Cell (ppb)	Grid Cells over 75 ppb
Baseline 8-hr Ozone Design Value (Figure 5-1)	75.3	0	77.5	3
8-hr Future Year Design Value for 2018 Baseline, 70 ppb Threshold (Figure 5-2)	67.2	0	69.9	0
8-hr Future Year Design Value for 2018 Proposed Action, 70 ppb Threshold (Figure 5-3)	67.4	0	70.0	0
8-hr Future Year Design Value for 2018 Proposed Action with ACEPM Controls, 70 ppb Threshold (Figure 5-4)	67.3	0	70.0	0
8-hr Future Year Design Value for 2018 Baseline, 60 ppb Threshold (Figure 5-8)	67.5	0	69.5	0
8-hr Future Year Design Value for 2018 Proposed Action, 60 ppb Threshold (Figure 5-9)	67.6	0	69.5	0
8-hr Future Year Design Value for 2018 Proposed Action with ACEPM Controls, 60 ppb Threshold (Figure 5-10)	67.6	0	69.5	0
Fourth Highest Daily Maximum 8-hour for 2018 Baseline (Figure 5-14)	71.7	0	74.8	0
Fourth Highest Daily Maximum 8-hour for 2018 Proposed Action (Figure 5-15)	72.3	0	75.7	0
Fourth Highest Daily Maximum 8-hour for 2018 Proposed Action with ACEPM Controls (Figure 5-16)	72.0	0	75.4	0

Note: The grid cells referenced in this table are shown graphically in Figures 5-2 to 5-19, below.

Page 41, New Figure 5-0

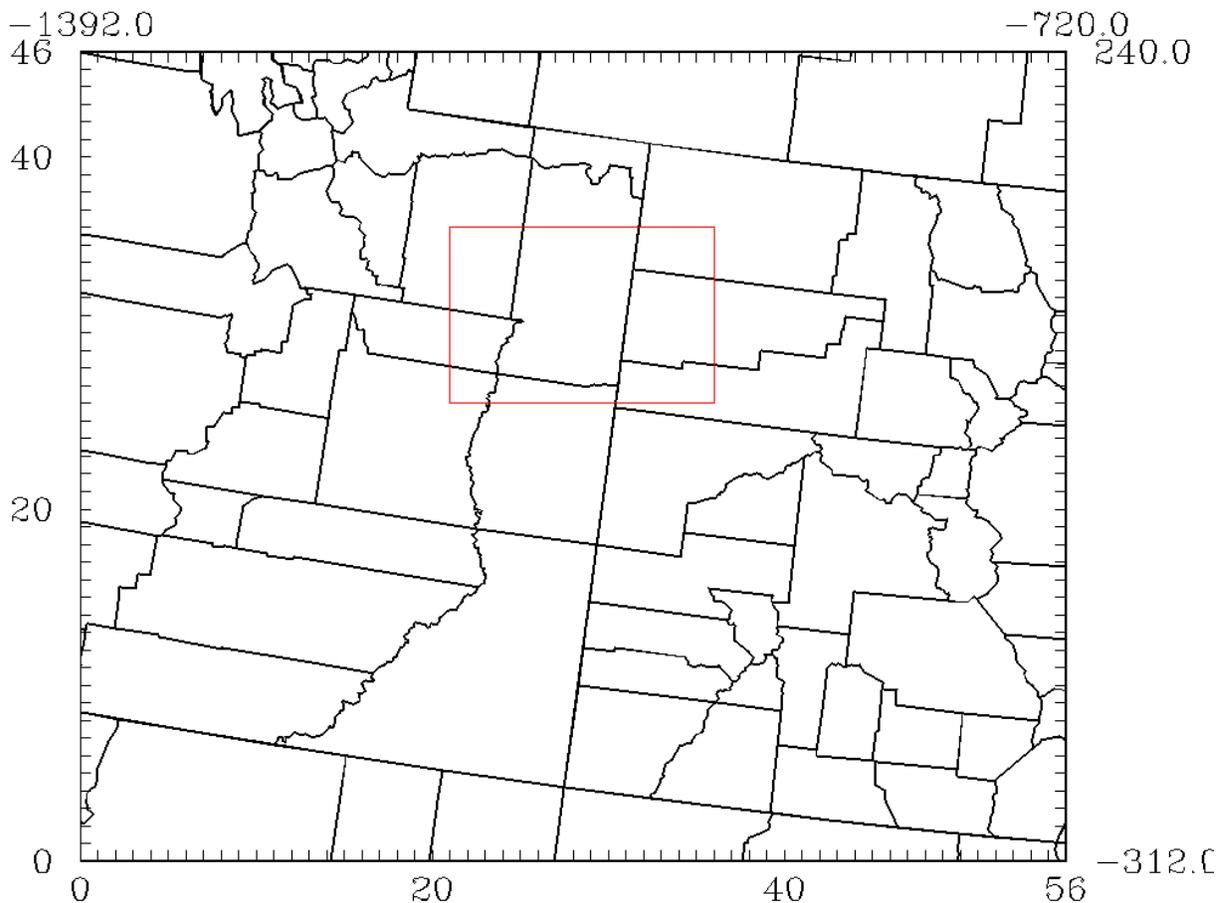


Figure 5-0: 12km GASCO CMAQ Modeling Domain. Red area denotes project impact area included in ozone concentration detail analysis.

8.1.4. APPENDIX L

Page L-7

This conservative methodology assumes that all the BTEX and methanol introduced into the evaporation ponds in the produced water will be emitted, and does not account for potential biological degradation or adsorption. **The following shows the mass balance equation used to calculate VOC emissions from the WEF:**

$$\text{Total Uncontrolled Benzene emissions (ton/yr)} = (\text{mass benzene(ton)/barrel produced water}) \times (\text{Barrels produced water/year})$$

Note: Mass could be expressed as lb/gal, conversion to ton/barrel = (lb/gal) x (1 ton/2000 lb) x (42 gallon/barrel)

8.1.5. APPENDIX P

Page P-10, Table P-2, RTC 028-O-2

Any mitigation measures selected by the BLM Utah **Decision Maker State Director** would be attached to the ROD as Conditions of Approval.

Page P-23, Table P-2, RTC 028-O-38

The analysis in the DEIS included all Reasonably Foreseeable Development at the time the analysis was conducted. The Greater Natural Buttes Draft EIS cumulative analyses, which were conducted more recently than the Gasco analysis, included the Gasco project, as well as additional projects that were identified after the analysis for the Gasco project was performed. The GNB analysis included a comprehensive cumulative analysis and is **incorporated by reference** referred to in this (Gasco) FEIS. (See Sections 4.2.1.1.1.1, 4.2.1.1.1.3, 4.2.1.2, 4.2.2.2, and 4.9.1.1.8.1). Ozone impacts will be addressed via the adaptive management plan for the Gasco project.

Page P-31, Table P-2, RTC 028-O-41

Any mitigation measures selected by the BLM Utah **Decision Maker State Director** would be attached to the ROD as Conditions of Approval. A complete list of measures that will be enforceable can be found in Table 2-1.

Page P-38, Table P-2, RTC 033-I-4

Any mitigation measures selected by the BLM Utah **Decision Maker State Director** would be attached to the ROD as Conditions of Approval.

Page P-54 Table P-2, RTC 032-G-27²

While the near-field PM10 impacts referred to are due to truck traffic to and from the water treatment facility, and as such are highly localized and unlikely to affect sensitive receptors near the project area, BLM shares EPA's concerns about modeled concentrations so close to the NAAQS. The decreased amount of production water processed at the WEF proposed under Alternative F would also result in a decrease of truck traffic and a corresponding decrease in PM10 emissions. ~~Additional controls could be imposed under the dust control plan as required by the BLM.~~

² Note: A dust control plan was not proposed in the FEIS. The cumulative impacts section referenced the dust plan tied to the West Tavaputs Plateau EIS.

9. APPEAL PROCESS

This decision may be appealed to the Interior Board of Land Appeals (IBLA), Office of Hearings and Appeals, U.S. Department of the Interior, 801 North Quincy Street, Suite 300, Arlington Virginia 22203, in accordance with the regulations contained in 43 Code of Federal Regulation (CFR) 3165.4. The appeal must also be filed with the State Director, BLM, Utah State Office, P.O. Box 45155, Salt Lake City, Utah 84145-0155.

If you wish to file a petition for stay of the effectiveness of this decision pursuant to 43 CFR 3165.4, the petition for a stay must accompany your notice of appeal. A petition for stay is required to show sufficient justification based on the standards listed in 43 CFR 3165.4(c) which include

- 1) the relative harm to the parties if the stay is granted or denied;
- 2) the likelihood of the appellant's success on the merits;
- 3) the likelihood of irreparable harm to the appellant or resource if the stay is not granted;
and,
- 4) whether the public interest favors granting the stay.

If a petition for stay is submitted with the notice of appeal, a copy of the notice of appeal and petition for stay must be served on each party named in the decision from which the appeal is taken, and with the IBLA at the same time it is filed with the State Director.

A copy of the notice of appeal, and statement of reasons and all pertinent documents must be served on each adverse party named in the decision from which the appeal is taken and on the Office of the Regional Solicitor, U.S. Department of the Interior, 6201 Federal Building, 125 South State Street, Salt Lake City, Utah 84138-1180, no later than 15 days after filing the document with the State Director and/or IBLA.

10. LITERATURE CITED

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