

Director's Protest Resolution Report

**Geothermal Lease
Amendment to the Gunnison
Resource Management Plan**

August 10, 2011



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Reader's Guide

How do I read the Report?

The Director's Protest Resolution Report is divided into sections, each with a topic heading, excerpts from individual protest letters, a summary statement (as necessary), and the Bureau of Land Management's (BLM's) response to the summary statement.

Report Snapshot

Issue Topics and Responses
NEPA

Topic heading

Submission number

Issue Number: PP-CA-ESD-08-0020-10
Protest issue number

Organization: The Forest Initiative
Protesting organization

Protester: John Smith
Protester's name

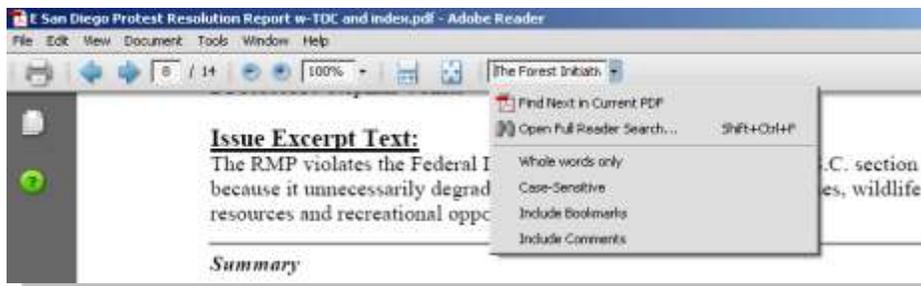
Issue Excerpt Text:
Rather than analyze these potential impacts, as required by NEPA, BLM postpones analysis of renewable energy development projects to a future case-by-case analysis.
Direct quote taken from the submission

Summary
General statement summarizing the issue excerpts (optional).
There is inadequate NEPA analysis in the PRMP/FEIS for renewable energy projects.

Response
BLM's response to the summary statement or issue excerpt if there is no summary.
Specific renewable energy projects are implementation-level decisions rather than RMP-level decisions. Upon receipt of an application for a renewable energy project, the BLM would require a

How do I find my Protest Issues and Responses?

1. Find your submission number on the protesting party index which is organized alphabetically by protester's last name.
2. In Adobe Reader search the report for your name, organization or submission number (do not include the protest issue number). Key word or topic searches may also be useful.



List of Commonly Used Acronyms

BA	Biological Assessment	FONSI	Findings of No Significant Impact
BLM	Bureau of Land Management	FWS	U.S. Fish and Wildlife Service
BMP	Best Management Practice	GUSG	Gunnison Sage Grouse
CDOW	Colorado Division of Wildlife	IB	Information Bulletin
CEQ	Council on Environmental Quality	IM	Instruction Memorandum
CFR	Code of Federal Regulations	NEPA	National Environmental Policy Act of 1969
COA	Condition of Approval	NRHP	National Register of Historic Places
DM	Departmental Manual (Department of the Interior)	NSO	No Surface Occupancy
DOI	Department of the Interior	RFDS	Reasonably Foreseeable Development Scenario
EA	Environmental Assessment	RMP	Resource Management Plan
EIS	Environmental Impact Statement	ROD	Record of Decision
EPA	Environmental Protection Agency	WEM	Waiver, Exception, and Modification
FEIS	Final Environmental Impact Statement	WSA	Wilderness Study Area
FO	Field Office (BLM)	WSR	Wild and Scenic River(s)

Protesting Party Index

Protester	Organization	Submission Number	Determination
	Center for Native Ecosystems	PP-CO-GUNNISON GEOTHERMAL-11- 0001	Denied

Issue Topics and Responses

Purpose and Need Statement

Issue Number: PP-CO-Gunnison-11-01-2

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

a. The purpose and need for the proposed action is inappropriately narrow and the BLM failed to consider an adequate range of alternatives:

The purpose and need section for the proposed action is inappropriately narrow. The purpose and need for this action is “to make public lands geothermal resources in the analysis area available for lease in a manner that protects public land resources and resource values and mitigates impacts on other land uses while helping to meet the increasing interest in geothermal energy development. In addition, the purpose is to amend the RMP to include additional lease stipulations necessary to protect resources and resource values, particularly for Gunnison sage-grouse and its habitat, and to mitigate impacts on other land uses.” *EA at 6* The BLM NEPA handbook explains that “...the purpose and need statement as a whole describes the problem or opportunity to which the BLM is responding and what BLM hopes to accomplish by the action (*BLM’s NEPA Handbook, H-1601-1, Section, 6.2, page 35 available at http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_handbook.Par.24487.File.dat/h1790-1-2008-1.pdf*)” The BLM manual provides the following direction for development of purpose and need statements: “...the purpose and need statement cannot be arbitrarily narrow..., and “...the purpose and need for the action is usually related to achieving the goals and objectives for the [Land Use Plan]; reflect this in your purpose and need statement”. *Id.* BLM failed to adequately incorporate the balance between energy development and Gunnison sage-grouse conservation in this purpose and need statement.

Response

In accordance with the National Environmental Policy Act of 1969 (NEPA), the BLM is required to briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action (40 CFR 1502.13). The portion of the BLM NEPA Handbook quoted by the protesting party reads in full, “Although the purpose and need statement cannot be arbitrarily narrow, [the] BLM has considerable flexibility in defining the purpose and need for action” (H-1790-1, page 35).

In this instance, the BLM received a nomination of lands for competitive geothermal leasing for which a response was required, in accordance with the Geothermal Steam Act of 1970 and the Energy Policy Act of 2005. The lands nominated for geothermal leasing are identified as open for geothermal leasing in the existing Resource Management Plan (RMP, 1993) for the Gunnison Field Office. However, the BLM determined that “the existing NEPA documentation in the [Programmatic Environmental Impact Statement (PEIS)] and the RMP were not adequate given site-specific resource conditions, particularly for the analysis of effects on Gunnison sage-grouse” (Environmental Assessment (EA), page 5), which demonstrated a need to amend the RMP to protect wildlife resource values like Gunnison sage grouse and its habitat.

The BLM incorporated the balance between energy development and Gunnison sage-grouse conservation into the purpose and need statement: “In addition, the purpose is to amend the RMP to include additional lease stipulations necessary to protect resources and resource values, particularly for Gunnison sage-grouse and its habitat, and to mitigate impacts on other land uses”

(EA, page 5) (emphasis added). The purpose and need for this proposed action is consistent with applicable laws, policy, and regulations.

Best Available Science

Issue Number: PP-CO-Gunnison-11-01-12
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

d. The BLM has failed to consider the best available science in its EA:

The decision is based on information in the EA that does not represent the best available science regarding the Gunnison sage-grouse. The BLM is required to operate under the best available science standard when implementing projects. *42 U.S.C. §4332.*

The BLM tiered this EA to the Final PEIS for Geothermal Leasing in the Western U.S. (Geothermal PEIS). This document was created in October, 2008. The BLM also depends on the findings and recommendations in the Gunnison Sage-grouse Rangewide Conservation Plan (*RCP*), which was signed by BLM on April, 2005. These documents are outdated and do not represent the best available science that should be used in assessing the impacts of geothermal energy development on Gunnison sage-grouse. At the time of publication, the *RCP* relied heavily on research on greater sage-grouse in developing conservation recommendations for Gunnison sage-grouse, due to a lack of adequate research on some aspects of Gunnison sage-grouse biology. This is appropriate because the two species are closely related. At the time of publication of the *RCP*, there was little research on the impacts of energy development on either species of sage-grouse. Since that time, a significant body of new peer-reviewed research on the impacts of energy development on greater sage-grouse has been published (see *CNE et al. comments on EA at 14-21*). There is still little or no information on the impacts of energy development on Gunnison sage-grouse. However, the findings of the research on the impacts of energy development on greater sage-grouse are likely applicable to Gunnison sage-grouse. Both species are highly sensitive to disruptions in their habitat and suffer from similar threats.

Issue Number: PP-CO-Gunnison-11-01-16
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The BLM failed to consider the best available science in the U.S. Fish and Wildlife Service's September 28, 2010 12-month finding detailing their rationale for their determination that the Gunnison sage-grouse is a candidate for listing under the Endangered Species Act. This finding and the citations therein constitute a summary of the bulk of the best available science, including recent research that was not considered at the time of publication of the Gunnison Sage-grouse Rangewide Conservation Plan.

Issue Number: PP-CO-Gunnison-11-01-28
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

For example, the BLM does not include information from recent peer-reviewed research relevant to predicting the magnitude of impact that may result from behavioral avoidance of energy development infrastructure. Naugle et al. (2009), reviewed a number of studies on the impacts of energy development on greater sage-grouse, and found that siting energy development facilities within 3.9 miles of a lek results in measureable impacts on sage-grouse leks and breeding populations (*see citation and discussion in our comments on the EA at 17*). In addition, Holloran (2005) reported declines in male greater sage-grouse lek attendance within 1.9 miles of a well or haul road with a traffic volume exceeding one vehicle per day (*see citation and discussion in our comments on the EA at 20*). This information is not included in the EA, though it is obviously relevant to predicting impacts of the proposed project on sage-grouse, and determining the likely effectiveness of lease stipulations, and was provided to the BLM in our previous comment letters.

Summary

The proposed plan amendment should be rejected because the EA does not consider the best available science:

- The Final PEIS for Geothermal Leasing in the Western U.S. and the Gunnison Sage Grouse Rangewide Conservation Plan are out of date.
- The BLM failed to consider the best available science in the U.S. Fish and Wildlife Service's (FWS) twelve-month finding for the Gunnison sage grouse.
- The EA does not include information from recent research on the impacts of energy development on sage grouse.

Response

NEPA regulations require the BLM to “insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements” (40 CFR 1502.24). The BLM NEPA Handbook also directs the BLM to “use the best available science to support NEPA analyses, and give greater consideration to peer-reviewed science and methodology over that which is not peer-reviewed” (BLM NEPA Handbook, page 55).

Regarding the PEIS, the BLM noted in the EA that the existing NEPA documentation in the PEIS and the RMP, as amended by the Geothermal PEIS Record of Decision, were not adequate for analysis of effects on Gunnison sage grouse. The EA states that the purpose of this NEPA analysis is to determine if the previous leasing availability decision is valid in light of the new information (EA, page 3). Based on the findings and analysis in the EA, the BLM determined in the Proposed Decision that the lease stipulations to be amended to the EA would allow the BLM to make public lands geothermal resources in the analysis area available for lease in a manner that protects public lands resources while helping to meet the increasing interest in geothermal development.

The Rangewide Conservation Plan (RCP) is a foundation for current management of Gunnison sage grouse. It is the BLM’s policy to implement the Plan through the NEPA process and to utilize the RCP as the basis for managing the multiple uses of public lands in identified sage-grouse habitat (EA, page 52). The Gunnison Sage-grouse Rangewide Steering Committee met recently and has committed to reviewing the need to update the Rangewide Conservation Plan (EA, page 189). As part of this review, applicable peer-reviewed and other published literature regarding both greater sage-grouse and Gunnison sage-grouse will be considered. Accordingly, recommended conservation strategies will be revised. This information will be available for application of Conditions of Approval (COA) during the site-specific NEPA analysis phase.

The BLM reviewed the FWS’s twelve-month finding in preparing the EA. The twelve-month finding represents a synthesis of many sources of information constituting the best available

science regarding the Gunnison sage grouse. One of the specific concerns of the proposed action is the potential impacts on the 2010 FWS's Gunnison sage-grouse species status review.

As noted in the response to comments, “[the] BLM does look at new research when analyzing decisions in addition to the Rangewide Conservation Plan. Many of the papers that are being published are associated with Greater sage-grouse in Wyoming. Results from these papers on Greater sage-grouse cannot be immediately extrapolated for Gunnison sage-grouse management. Also, most of the new literature is specific on the origin of disturbance (well pads, roads, coal-bed methane); and it is difficult without specific data on geothermal development to determine if these same disturbances exist and whether they are at the same level” (EA, page 188).

The BLM recognizes that potential geothermal development in close proximity to known leks or within nesting habitat may have a negative impact on individuals in the GUSG population. However, as discussed in the EA, the proposed action will not have a substantial impact on the population as a whole and the project area is not large enough to affect the overall habitat from a landscape perspective. Additional COAs or Best Management Practices (BMPs) will be applied through site-specific NEPA analysis once a Lease Nomination and Plan of Development are provided. These additional conservation measures will focus on minimizing disturbance to nesting habitat within and surrounding proposed development.

The information considered in the EA and project record is sufficient to support the decisions considered in this analysis. Refer to the response on the Impacts Analysis issue for additional information regarding the BLM’s determination of the appropriate level of analysis and habitat assessment process.

Impact Analysis

Issue Number: PP-CO-Gunnison-11-01-10
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

BLM did not consider how amending the RMP will affect the Gunnison sage-grouse throughout the management area. This analysis must be completed in order to take the “hard look” required by NEPA prior to amending the Gunnison RMP.

Issue Number: PP-CO-Gunnison-11-01-24
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

1. The BLM fails to adequately analyze the potential for direct and functional loss of high quality habitat on and around the lease parcels, and the consequence of this for the Gunnison Basin population. The

BLM’s finding of no significant impact rests on their conclusion that sage-grouse occupied habitat on the nomination area is overall less than average quality relative to sage-grouse habitat throughout the Gunnison Basin, particularly for nesting and early brood rearing, and during winter, and that, in spite of evidence of regular use of the area, it is presumed that the density of sage-grouse on the area is low compared to higher quality habitats elsewhere in the Gunnison Basin (EA pg. 63); and thus that direct and functional loss of this habitat will not result in significant adverse impacts on the Gunnison Basin population. However, this conclusion is in direct conflict with the findings of a recent landscape-scale spatial model predicting Gunnison sage-grouse nesting probability in the Gunnison Basin (Aldridge et al. 2010 and 2011). This model shows that a significant amount of high quality nesting habitat exists on or near the lease application parcels, and in the much larger area surrounding the lease parcels that could experience indirect and cumulative

impacts associated with the proposed geothermal development. The BLM's conclusion that habitat on the lease parcels is of relatively low quality, is based on an analysis of the degree to which small-scale characteristics of the habitat (e.g. sagebrush shrub cover and height, herbaceous cover etc.), align with the habitat guidelines in the Gunnison sage-grouse Rangewide Conservation Plan (EA pg. 58). A number of recent studies of Gunnison sage-grouse nesting habitat find that local scale vegetation characteristics outlined in the habitat guidelines in the Rangewide Conservation Plan fail to predict nest locations or nest success (e.g. Davis, 2011, Gunnison Sage-Grouse Summit Presentation). One possible reason for this may be that nest selection and nest success is determined by landscape-scale factors such as road densities rather than local-scale habitat factors (e.g. Davis, 2011, Gunnison Sage-Grouse Summit Presentation). The BLM does not describe the results of Aldridge et al. 2010/2011, or adequately explain why it still feels that the nesting habitat in the area that will be affected by the proposed geothermal development is of low quality, given these findings, though its response to comments suggests that it is aware of the findings of Aldridge et al. 2010-2011.

Issue Number: PP-CO-Gunnison-11-01-25
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

Further, the BLM's analysis of habitat quality was limited to the lease parcels, and did not include analysis of the quality of habitat outside of the lease parcels. Gunnison sage-grouse habitat outside of the lease parcels may be indirectly and cumulatively impacted by geothermal development on the lease parcels (see discussion elsewhere in this protest). Modeling done by Aldridge et. al. 2010/2011 suggests that there is a substantial amount of high quality habitat in the areas around the lease parcels. The BLM does not adequately analyze the potential indirect and cumulative impacts of the proposed action on high quality habitat outside of the lease parcels.

Issue Number: PP-CO-Gunnison-11-01-27
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

2. The BLM fails to adequately analyze the impacts of behavioral avoidance of energy development

infrastructure. The BLM notes that sage-grouse may avoid using suitable habitat adjacent to transmission lines, pipelines and roads (EA pg. 62). However, the BLM does not disclose that sage-grouse are likely to avoid using otherwise suitable habitat adjacent to other types of energy development structures, including wells, the geothermal plant, substations, etc. In addition, the BLM does not disclose the amount of suitable habitat that is likely to be avoided adjacent to energy development structures, or the magnitude of the population level impact that can result from behavioral avoidance of energy development infrastructure in otherwise suitable habitat. As a consequence, the BLM underestimates the potential adverse impacts of energy development infrastructure on Gunnison sage-grouse.

Issue Number: PP-CO-Gunnison-11-01-29
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

In addition, the BLM fails to discuss the potential population level consequences of behavioral avoidance of energy development and other cumulative impacts of energy development. For example, recent research suggests that "sage-grouse populations decline in response to energy development when birds behaviorally avoid infrastructure in one or more seasons (Doherty et al. 2008), and when cumulative impacts of development negatively affect reproduction or survival (Aldridge and Boyce 2007) or both (Lyon and Anderson 2003, Holloran 2005, Kaiser 2006, and Holloran et al. 2007). Avoidance of energy development reduces the distribution of sage-grouse and may result in population declines if density dependence, competition or displacement into poor-quality habitat lowers survival or reproduction among displaced birds (Holloran and Anderson 2005, Aldridge and Boyce 2007)." (Naugle et al. 2009, *see citation and discussion in our comments on the EA at 16-17*) Additional information on the potential for behavioral avoidance of human infrastructure, including roads and other types of infrastructure associated with energy development, some of which is specific to Gunnison sage-grouse, is included in the FWS finding (75 FR 59804) and the papers cited in the finding. The BLM did not adequately consider any of the information in the FWS finding or the papers cited therein regarding the potential for behavioral avoidance of infrastructure. The potential for these types of impacts is not disclosed in the EA, although it is obviously relevant to understanding the impacts of geothermal energy development activities

on Gunnison sage-grouse populations, and was provided to the BLM in our comments on the EA.

Issue Number: PP-CO-Gunnison-11-01-38

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

6. The BLM inappropriately limited its analysis of the cumulative impacts of activities that will alter sagebrush vegetation to activities on the lease parcels, rather than considering the cumulative impacts of removal and alteration of sagebrush vegetation on the entire area that will be impacted by geothermal development. The cumulative effects analysis should have considered all lands open to geothermal development under the RMP and the Geothermal PEIS within this planning area since the decision to amend the RMP will affect geothermal leasing on all these areas.

Issue Number: PP-CO-Gunnison-11-01-40

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

8. The BLM fails to provide an adequate analysis of cumulative impacts within the analysis area in the EA. The BLM provides a summary of the past (EA pgs. 57-58), present (EA pgs. 62) and reasonably foreseeable actions (EA pgs. 3-5) that may affect Gunnison sage-grouse in the analysis area. However, the BLM provides virtually no actual analysis of the cumulative effects of the proposed project combined with these past, present and reasonably foreseeable actions on Gunnison sage-grouse habitat and populations. The BLM argues that it cannot conduct this analysis until it has more site-specific information about how geothermal development will proceed on the parcel. However, there is clearly sufficient information in the EA to conduct an adequate coarse-scale cumulative effects analysis which at least attempts to predict the cumulative impacts on Gunnison sage-grouse to the extent necessary in order to determine whether leasing and reasonably foreseeable development on the parcels is likely to have significant adverse cumulative impacts on Gunnison sage-grouse, and to determine the likely effectiveness of the proposed lease stipulations to be amended to the Gunnison RMP.

Issue Number: PP-CO-Gunnison-11-01-41

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

In addition, the BLM failed to provide an analysis of the indirect and cumulative effects of geothermal development at an appropriate spatial scale. The BLM's analysis of impacts is largely limited to the impacts to habitat on the lease parcels, with some limited consideration of impacts to leks within 4 miles of the lease parcel boundaries. This analysis does not adequately account for indirect and cumulative impacts of the proposed action that will occur outside of the lease parcels. Gunnison sage-grouse habitat outside of the lease parcels may be indirectly and cumulatively impacted by the proposed geothermal development (see discussion elsewhere in this protest). This habitat is likely to be used not only by Gunnison sage-grouse from the one active lek on the lease parcel, but also by birds from six active leks that are within 4 miles of the lease parcel, and potentially by birds from leks at even greater distances from the lease parcel. Gunnison sage-grouse are dependent on large contiguous and unfragmented landscapes to meet their life-history needs. Recent research in the Gunnison Basin suggests that females regularly make long distance movements in winter of up to 25 miles to and from winter habitat in the Basin (Phillips, 2011, Gunnison Sage-Grouse Summit Presentation). Another recent study suggests that prevention of direct and functional loss of 6.2 miles from leks from direct and functional loss may be needed in order to protect 90% of the nests associated with a particular lek (90% of Gunnison sage-grouse nests are within 6.2 miles of the lek where breeding took place) (Aldridge et al. 2010/2011). Previous work suggested that prevention of direct and functional loss of habitat within 4 miles from leks may be needed in order to protect 81% of seasonal locations, and 80% of nests (approximately 81% of all breeding, summer, fall, and winter seasonal locations were within 4 miles of the lek of capture, and that 80% of hens nest and raise broods in suitable habitats within 4 miles of the hen's lek of attendance) (Gunnison Sage-Grouse Rangewide Conservation Plan, 2005).

Issue Number: PP-CO-Gunnison-11-01-5

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

b. The BLM improperly limited the geographic scope and analysis in the EA:

The geographic scope of the analysis area in the EA is too small to adequately analyze the issues related to the Decision Record that was issued. Further, the proposed action stated in the EA is not consistent with the Decision Record that was issued. The EA declares that the proposed action is “to offer leases for geothermal resources on the federal mineral estate and to attach lease stipulations necessary to protect resource values.” The Decision Record indicates that the BLM will “Amend Geothermal Lease Stipulations in the Gunnison Resource Area Approved Resource Management Plan.” See *Decision Record*. Defining geographic boundaries and issues for analysis in the EA must be appropriately tailored to the decision being made. The Decision that was made was much broader than the proposed action. Amending the RMP will affect lands outside the analysis area in this EA and affect resources that were not properly analyzed.

The Gunnison RMP covers 614,233 acres of BLM land. The Geothermal Programmatic Environmental Impact Statement (PEIS) closed 164,408 acres in the Gunnison field office to geothermal development. This leaves 449,825 acres open to geothermal development in lands managed by the Gunnison RMP. BLM improperly limited its analysis to 5,525

acres. The geographic boundary of the analysis area cannot allow for the “hard look” necessary for proper NEPA analysis. BLM must analyze how amending the RMP will affect the entirety of the area managed under the Gunnison RMP. This type of comprehensive analysis would require a much broader analysis area to consider the affects on all areas open to geothermal development. The decision to amend the RMP was based solely on an analysis of 1.2% of the area affected by the amendment. Deciding to amend the Gunnison RMP based on analysis of a very small portion of that managed area is arbitrary, capricious, and an abuse of discretion.

Issue Number: PP-CO-Gunnison-11-01-71
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

Further, BLM should have analyzed the effects of amending the Gunnison RMP on the entire management area. An analysis of this amendment on the entire resource planning area could have only been done through the creation of an EIS. BLM inappropriately limited the scope of their analysis in an attempt to circumvent the need to create an EIS.

Summary

The EA does not adequately consider the impacts of the proposed plan amendment for the following reasons:

- It does not analyze impacts from geothermal development on Gunnison sage grouse and its habitat outside of the analysis area.
- It defers the analysis until the BLM has more site-specific information about how geothermal development will proceed on the parcel.
- The proposed action is inconsistent with the proposed decision record.

Response

The EA's analysis of effects of geothermal development reflects a general approach, based on the analysis in the PEIS, on the Reasonably Foreseeable Development Scenario (RFDS), and on additional site-specific information (EA, page 7). At the decision stage for the plan amendment, much of the impacts of actual development are speculative, as much is unknown about the location, scope, scale, and timing of that development. (See section 1.3.1 of the EA for additional information.) As explained in the EA and in the response to comments, the proposed action has no direct impacts on the environment. The level of detail in the EA is sufficient to support reasoned conclusions by comparing the amount and the degree of change caused by the proposed action and alternatives on Gunnison sage-grouse.

Pursuant to its purpose and need, the BLM's EA identified and analyzed additional lease stipulations necessary for the protection of Gunnison sage-grouse and its habitat, as well as alternatives with varying degrees of protective measures, to better address the analysis of potential effects of the leasing decision on Gunnison sage-grouse. The BLM worked closely with the FWS and the Colorado Division of Wildlife (CDOW) (within the Colorado Department of Natural Resources) as Cooperating Agencies with the BLM in the preparation of the environmental analysis and development of appropriate lease stipulations (EA, page 8). Potential effects of geothermal development on Gunnison sage-grouse were discussed in section 3.2 of the EA on pages 50-66.

The RMP amendment decision adds stipulations to the analysis area and does not authorize any surface disturbing activities. Indirect and cumulative effects are limited under NEPA to discussion of effects related to an RFDS scenario developed by the Federal agencies in order to determine appropriate lease stipulations for the protection of surface resources. Should the land be leased and should development be proposed, consideration will be given to these items on a site-specific basis and addressed in subsequent NEPA analysis. (EA, page 195).

The analysis area for the EA includes the nominated BLM and private lands and additional BLM lands within an area identified as having high potential for geothermal development (approximately 5,525 acres) (EA, page 2). The cumulative effects analyses areas varied with the resource or issue being analyzed. The cumulative impacts summary (EA, page 95) summarized known past and current activities, as well as reasonably foreseeable geothermal development described in the RFDS (see pages 4-5 of the EA for more detail), in the analysis area and adjacent private and Forest Service lands in sagebrush habitats.

At the outset of the analysis process, the BLM, in conjunction with the FWS, and the CDOW, considered performing a population viability assessment (PVA) similar to the effort prepared for the RCP and CCP to determine if the proposed action would have an effect on the overall population. The goal of a PVA is to determine the relative impact to the population based on two impact scenarios: (1) loss of habitat assuming full development over the entire lease area, and (2) potential changes in population. Since no geographically independent demographic information is available for this population, the BLM and cooperating agencies looked at the percent population possibly negatively affected by future development within the lease area, per EA discussion. The percent habitat and percent population potentially affected by the proposed action was relatively small in context of the overall Gunnison Basin population. The collective agency biologist team determined that a PVA would not further inform this EA. (See pages 50-51 of the EA for additional information.)

The BLM and cooperating agencies began their effects analysis with limited sage-grouse habitat data for the analysis area. As a result, BLM contracted an environmental consultant company to perform a habitat evaluation of the lease nomination area. This company has performed all of the habitat evaluations for the CDOW and FWS' private land owner Candidate Conservation Agreement with Assurances program. BLM had the analysis area inventoried and assessed in order to better understand the extent and quality of Gunnison sage-grouse habitat in the analysis area in accordance with RCP guidelines. The BLM's site-specific habitat assessment was based

on that habitat inventory, as well as other ground-truthed site-specific data (see section 3.2.1 of the EA). The habitat assessment of the analysis area referenced in the FWS's determination (Aldridge *et al.*) was based on broad-scale, remotely sensed data. Per the FWS finding, the Aldridge *et al.* analysis found high probability of nesting in the geothermal lease analysis area. This appears to be contradictory to site-specific GUSG habitat assessment work. The BLM's site-specific habitat assessment of the analysis area found that little of the area met sage-grouse habitat objectives per the RCP (2005).

Based on this level of analysis, the EA concludes that the effects of the proposed action on a portion of the Gunnison sage grouse population will not result in adverse impacts to the overall grouse population (EA, page 63). Quoting the FWS, the EA states, "Because of the current preliminary status of geothermal development, we lack the specific project details to evaluate the extent to which this activity will affect the population's overall viability. Therefore, we do not consider renewable energy development to be a threat to the Gunnison sage-grouse at this time" (EA, page 64). The RFDS for the proposed action indicates that it is likely that a site much smaller than the lease area would be utilized once any lease that is issued is developed: "Once operational, the project as a whole would likely be limited to an area no larger than two sections with a much smaller area of actual surface disturbance within those sections" (EA, page 4).

The protesting party misinterprets the proposed decision record. The BLM issued a two-part decision record that in its entirety implements the proposed action. One decision was a determination that the nominated lands are suitable for leasing as stipulated. The other decision was to amend the RMP to include new geothermal lease stipulations, which had been identified in the proposed action and alternatives of the EA that would be attached to any geothermal lease in the analysis area.

The plan amendment decision only encompasses the analysis area, not the entire area covered by the Gunnison RMP. The Decision Record states, "The proposed decision is to amend the Gunnison Resource Area Approved Resource Management Plan (RMP) to include the following new geothermal lease stipulations that would be applied to any geothermal leases in the analysis area" (emphasis added). As previously stated, the analysis area for the EA includes the nominated BLM and private lands as well as BLM lands within an area identified as having high potential for geothermal development (approximately 5,525 acres) (EA, page 2).

Finding of No Significant Impact (FONSI)

Issue Number: PP-CO-Gunnison-11-01-74
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The conclusion that "Neither the Proposed Action nor Alternative 3 will have a significant effect on the human environment." (DN pgs. 9, FONSI pg. 2), is arbitrary and capricious. As discussed previously in this protest, amending the RMP and allowing leasing and subsequent geothermal development is likely to

result in short and long-term significant impacts on the local Gunnison sage-grouse population. The RMP amendment covers substantial amounts of land that were not analyzed within this EA. The Decision Notice is not limited to this specific project, yet was based on analysis of only the proposed BLM lease parcel. An EIS should have been prepared that analyzed all the areas managed by the Gunnison RMP that are open to geothermal development.

Issue Number: PP-CO-Gunnison-11-01-75
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The statement that the area of the decision does not contain unique characteristics (FONSI pg. 3) is arbitrary and capricious. Our comments on the BLM EA clearly establish that the area is ecologically critical due to its significance as key habitat for the globally critically imperiled Gunnison sage-grouse. (*comments on the EA at 3-8*). The Waunita lek is the only location in the world where the public has an opportunity to view the Gunnison sage-grouse.

Issue Number: PP-CO-Gunnison-11-01-77
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The effects of the proposed action on Gunnison sage-grouse are highly controversial. There is scientific controversy and uncertainty regarding the likely impacts of the proposed action on Gunnison sage-grouse, the likely efficacy of lease stipulations and other mitigation measures applied to minimize impacts, and the degree to which the proposed project is likely to contribute to local and regional population declines. In addition, there is scientific and philosophical controversy regarding what the target population size should be for the Gunnison Basin population in order to ensure long-term persistence of this population, and whether areas of Gunnison sage-grouse habitat on public lands should be set aside as reserves that are free from development. Scientists recommend holistic management approaches including conserving existing habitats and populations, combined with restoring habitat to maintain population persistence (Wisdom et al. in press, EA pg. 55). The proposed action is not consistent with these recommendations, and thus there is substantial uncertainty and controversy

regarding whether the proposed action will contribute to the risk of loss of the Gunnison Basin population and extinction of the species. The conclusion that the effects of the proposed action are not highly controversial (FONSI pg. 3) is arbitrary and capricious.

Issue Number: PP-CO-Gunnison-11-01-78
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

Further, there is substantial uncertainty regarding how geothermal development will impact Gunnison sage-grouse, and the proposed action involves unique or unknown risks to Gunnison sage-grouse. The effects of energy development (and geothermal development in particular) on Gunnison sage-grouse have never been studied. Some predictions regarding impacts can be made from what is known about Gunnison sage-grouse biology and from understanding of research on the impacts of other types of energy development on greater sage-grouse. However, it is not known how impacts of geothermal development to Gunnison sage-grouse may differ based on potential differences in their level of sensitivity to impacts, differences between geothermal development and other types of development (e.g. oil and gas) whose impacts have been better studied. In addition, there are unique risks associated with allowing development in habitat for a population that has already declined to the point where it's long-term probability of persistence is low, even without any further reduction in numbers (Wisdom et al, in press, EA pg. 55). The conclusion that the possible effects of the proposed action are not highly uncertain, and do not involve unique or unknown risks (FONSI pg. 3), is arbitrary and capricious.

Summary

The BLM improperly reached a FONSI for the proposed plan amendment. The proposed plan amendment will have significant impacts because:

- The amendment covers substantial amounts of land that were not analyzed in the EA.
- The area contains unique characteristics (Waunita lek) and is ecologically critical (key habitat for Gunnison sage-grouse).
- The effects of the plan amendment are highly controversial.

- There is substantial uncertainty and unknown risks to Gunnison sage grouse regarding the effects of the plan amendment.

Response

The analysis in the EA demonstrates that the proposed plan amendment would not have significant effects, and the FONSI is appropriate.

Scope of Amendment: The RMP amendment only applies to the EA analysis area. Refer to the response to the Impacts Analysis issue for additional information.

Unique Characteristics: The Waunita lek and sage-grouse habitat in the analysis area do not constitute unique characteristics within the meaning of NEPA. The BLM NEPA Handbook (H-1790-1) explains that “unique characteristics” are generally limited to those that have been identified through the land use planning process or other legislative, regulatory, or planning process, such as wild and scenic rivers, wilderness or wilderness study areas, and areas of critical environmental concern (EA, page 71). None of these are present in the analysis area (FOSNI, page 3).

As noted in the response to comments: “When looking at the daily movement patterns of male sage grouse during the breeding season, males typically move within 0.6 mile from the leks. The Waunita lek is outside of the 0.6 mile from the lease boundary so activities within the geothermal lease nomination area should not have a significant impact on the daily [movement] patterns during the breeding season for the Waunita lek.” (EA, page 186).

Again, as discussed on page 63 of the EA, based on the site-specific sage-grouse habitat analysis, it was determined that the sage-grouse occupied habitat in the analysis area overall is of less than average quality relative to sage-grouse habitat throughout the Gunnison Basin; particularly for nesting and early brood-rearing, and during winter. The presence of sage-grouse birds and sign on the area indicates fairly regular use, but it is presumed that the density of sage-grouse on the area is low compared to higher quality habitats elsewhere in the Gunnison Basin.

Highly Controversial Effects: The effects of the plan amendment are not highly controversial. The BLM NEPA Handbook explains, “Controversy in this context means disagreement about the nature of the effects, not expressions of opposition to the proposed action or preference among the alternatives. There will always be some disagreement about the nature of the effects for land management actions and the decision-maker must exercise some judgment in evaluating the degree to which the effects are likely to be highly controversial” (EA, page 71). The EA discusses the effects of the plan amendment on sage-grouse and its habitat (EA, pages 63-67). Substantial dispute does not exist within the scientific community about the effects of the proposed action. The FWS has stated that a portion of the Gunnison Basin population will likely be adversely affected by geothermal development, but it does not consider such development to be a threat to sage-grouse at this time (EA, page 64).

Highly Uncertain Effects: The effects of the proposed action are not highly uncertain. The

FONSI explains that geothermal development has been occurring in other areas of the western United States for decades, while oil and gas development has been occurring in other areas of Colorado (FONSI, page 3). As with controversy, there will always be some uncertainty about the effects of land management actions, and the decision-maker must exercise some judgment in evaluating the degree to which the effects are likely to be highly uncertain (BLM NEPA Handbook, H-1790-1, page 72). The EA describes the likely effects of the proposed action and alternatives on Gunnison sage-grouse and its habitat (EA, pages 63-67).

Gunnison Sage Grouse

Issue Number: PP-CO-Gunnison-11-01-53

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The lease stipulation prohibiting surface occupancy within 0.6 miles of a lek will not prevent significant adverse impacts to Gunnison sage-grouse. The BLM EA states that the purpose of the 0.6 mile NSO buffer is to protect grouse courtship sites from disturbances that would force strutting sage-grouse onto less desirable sites, interfere with mating processes, or result in lek site destruction (EA pgs. 31- 32). This 0.6 mile buffer distance is based on the following information from the Rangewide Conservation Plan. The RCP defines 'lek habitat' as an area within 0.6 miles of an active lek, based on several studies of daytime movements of adult male Greater sage-grouse during the breeding season (no similar data is available for Gunnison sage-grouse) (GSG RCP). In addition, the RCP cites one study that found that, 23% of Gunnison sage-grouse nests (GSG RCP, App. J. Fig. 1), and 27.5% of seasonal habitat locations occurred within 0.6 miles of the lek of capture in the Gunnison Basin (Gunnison Sage-Grouse Rangewide Conservation Plan 2005). The 0.6 mile NSO stipulation may prevent geothermal development from resulting in direct loss of 27.5% of the habitat used by a population from a given lek and 23% of the nests of birds from a given lek in a given breeding season. However, it allows geothermal development to result in direct loss of: 1) roughly 77% of the nests of birds from a given lek in a given breeding season, and 2) roughly 73% of the habitat used by a population from a given lek (including nesting, brood rearing, summer-fall, and winter habitat). Thus, even if this lease stipulation achieves its stated intent, it will not prevent significant adverse impacts to Gunnison sage-grouse populations.

Issue Number: PP-CO-Gunnison-11-01-54

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

The impacts of direct loss of nesting habitat in these areas will have significant adverse impacts on the Gunnison Basin population. A recent landscape-scale spatial model predicting Gunnison sage-grouse nesting probability in the Gunnison Basin shows that a significant amount of high quality nesting habitat exists on or near the lease application parcels, and in the much larger area surrounding the lease parcels that could experience indirect and cumulative impacts associated with the proposed geothermal development. (Aldridge et al. 2010/2011). Loss of substantial amounts of this nesting habitat due to geothermal development will have significant negative impacts on the Gunnison Basin population, and the protection of a small proportion of this nesting habitat afforded by the 0.6 mile buffer does not mitigate these impacts to insignificance.

Issue Number: PP-CO-Gunnison-11-01-57

Organization: Center for Native Ecosystems

Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

Significant impacts are also highly likely to result from the potential direct loss of up to 73% of the habitat used by a population from a given lek, including not only nesting habitat, but also brood rearing, summer-fall, and winter habitat. Gunnison sage-grouse require all of these seasonal habitats to survive. Gunnison sage-grouse populations in the Gunnison Basin may be limited by the availability of sufficient high quality brood rearing and winter habitat. Direct loss of brood rearing habitat may

reduce survival of young. Direct loss of winter habitat may result in reduced overwinter survival. A stipulation that protects only 'lek habitat' while allowing for direct loss of a substantial proportion of all other seasonal habitat types, will not prevent significant adverse impacts to the population. The 0.6 mile buffer will not mitigate these impacts to insignificance, nor will any of the other stipulations attached to the lease.

Issue Number: PP-CO-Gunnison-11-01-6
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

c. The decision is inconsistent with BLM IM 2009-071 and BLM CO IM 2010-028:
BLM is not adhering to the policies announced in BLM IM 2009-071 and BLM CO IM 2010-028. BLM IM 2009-071 directs that when necessary to maintain sustainable sage-grouse populations across the broader landscape within the state, field managers will implement an appropriate combination of the following actions in "priority habitat". BLM IM 2009-071 declares that within "priority habitat", BLM should "Withhold from sale or defer the sale of parcels, in whole or in part, that industry has proposed for oil and gas or geothermal leasing in priority habitat as supported by analysis under the National Environmental Policy Act (NEPA) of the impacts of leasing on sage-grouse, and in RMP revisions and amendments, analyze one or more alternatives that would exclude priority habitat from energy development and transmission projects." BLM CO IM 2010-028 explains "For the purposes of this IM, "core habitat" refers to those areas of highest conservation value as identified by BLM Colorado and CDOW and may include previously identified core, key or priority habitat designations. For [Gunnison sage-grouse], "core" habitat will be areas of currently *occupied habitat* supporting Gunnison Sage-grouse populations, including those smaller populations that are vulnerable to localized extirpation but necessary to maintain range-wide connectivity and genetic diversity." (*emphasis added*) BLM CO IM 2010-028 recognized that the Gunnison sage-grouse populations have declined to the point where all occupied habitat is considered "core" habitat and they acknowledge that this includes "priority habitat". BLM has failed to properly implement the mandates of these IMs throughout the environmental analysis of the currently proposed leasing.

Issue Number: PP-CO-Gunnison-11-01-62
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

In addition, the likelihood that the lease stipulations will mitigate impacts to significance is further reduced by the fact that they are subject to waiver, modification and exception, (WEM) and that the criteria for WEM are unlikely to ensure that WEM of stipulations do not result in significant adverse impacts. For example, the 'No Surface Occupancy' stipulation (NSO) that prevents development in mapped Gunnison sage-grouse habitat within 0.6 miles of Gunnison sage-grouse leks will be subject to Waiver, Exception, and Modification criteria (WEMs). "An exception may also be granted by the authorized officer if the proponent, BLM, State wildlife agency, and where necessary, other affected interests, develop non-monetary compensation or mitigation that satisfactorily offsets anticipated impacts to Gunnison sage-grouse habitats and/or breeding activities." There is no discussion of what types of compensation or mitigation would be considered to satisfactorily offset impacts.

Issue Number: PP-CO-Gunnison-11-01-66
Organization: Center for Native Ecosystems
Protesters: Matthew Sandler & Megan Mueller

Issue Excerpt Text:

Though application the proposed lease stipulations may prevent direct loss of a small proportion of the Gunnison sage-grouse habitat likely to be impacted by the geothermal footprint, there is no reason to believe that these stipulations will prevent significant impacts on Gunnison sage-grouse due to direct loss of 73% of the habitat associated with each lek (including nesting, brood rearing, and wintering habitat), impacts on leks and breeding populations associated with the placement of energy development structures within 3.9 miles of active leks, declines in lek attendance associated with traffic exceeding 1 vehicle per day within 1.9 miles of leks, impacts of cumulative increases in road density and the overall human footprint, and the direct and indirect impacts associated with construction of 5 miles of new transmission line and improvement of existing lines. The BLM provides no rationale describing how the lease stipulations will minimize these likely impacts to insignificance.

Summary

The proposed plan amendment should be rejected because:

- The 0.6-mile No Surface Occupancy (NSO) lease stipulation will not prevent significant impacts to Gunnison sage grouse.
- The decision is inconsistent with BLM IM 2010-071 and BLM CO IM 2010-028 by failing to implement mandates of the IMs in the environmental analysis of the currently proposed amendment.
- The lease stipulations are subject to Waiver, Exception and Modification (WEM) and are unlikely to ensure the WEM of stipulations do not result in significant adverse impacts.

Response

Effectiveness of NSO Lease Stipulation: The protesting party's statement that the 0.6-mile NSO stipulation allows geothermal development to result in direct loss of 77% of nests of birds from a given lek and 73% of the habitat used by a population from a given lek is misleading. The 0.6-mile NSO stipulation around Gunnison sage-grouse leks is not intended to protect nesting habitat, but rather the integrity of existing lek habitat; providing roosting and cover for GUSG during the breeding period. The protesting party's statement also assumes that all nests and habitat used by a given population that is outside the 0.6-mile buffer would be destroyed as a result of the plan amendment. However, during subsequent site-specific NEPA analysis, additional COAs and BMPs will be identified to minimize the footprint of proposed development and fragmentation within nesting habitat.

Specifically, the protesting party's statement ignores several factors associated with the plan amendment. First, the RFDS projects less than 122 acres of surface disturbance associated with the proposed action (EA, pages 4-5). Second, additional NSO stipulations for other factors such as water and riparian resources, steep slopes and erosive soils, big game winter range, gullies and other areas of chronic erosion, and geologic hazards would provide additional incidental protection (EA, page 63). The detailed maps of the alternatives in Appendix D of the EA display the extent of the lands in the analysis area where surface disturbance would be prohibited or controlled (EA, pages 164-166). Lastly, the lease notice related to sage-grouse habitat specifies additional resource protection concerns that would be addressed in subsequent permitting of surface disturbing activities in sage-grouse habitat (page 63).

This lease notice addresses nesting sage grouse within a 4-mile buffer of active leks, critical winter habitat, and fragmentation of habitat (EA, page 33). As stated in the EA, "With the wildlife stipulations in place, the already lower quality sage-grouse habitat, and lower bird occurrence than other areas in the Gunnison Basin, the proposed action to lease geothermal mineral rights is unlikely to cause adverse impacts to the overall grouse population" (EA, page 63).

Exceptions, waivers, and modifications provide an effective means of applying adaptive management to leases and associated permitting activities to meet changing circumstances (see section 2.2.1 of the EA for a discussion of how exceptions, waivers, and modifications to lease

stipulations are reviewed for approval or denial). As discussed in the response to comments, the EA was edited to reflect that under the Proposed Action and Alternatives 2, 3, and 4, any waivers, exemptions, or modifications to lease stipulations would be subject to public notice (see section 2.3 of the EA). For the Proposed Action and Alternatives 1, 3, and 4, additional criteria for applying waivers, exceptions, or modifications to stipulations designed to protect Gunnison sage-grouse and habitat were developed in coordination with the Colorado DOW and other Cooperating Agencies (see Criteria Specific to Gunnison Sage-grouse Lease Stipulations under section 2.2.1 of the EA).

Sage-Grouse Instruction Memoranda: BLM IM 2009-071 directs the BLM, when undertaking a land use planning effort, to analyze one or more alternatives that would exclude priority habitat from energy development and transmission projects. The BLM complied with this direction in the EA. Alternative 5 would have closed the analysis area to geothermal leasing. (EA, page 53).

BLM CO IM 2010-028 directs the BLM, when amending a land use plan to: (1) coordinate and seek technical assistance from the USFWS on sage-grouse habitats and planned land uses; (2) include language in the RMP that gives the BLM discretion to add mitigation measures that modify surface operations supported by site-specific NEPA analysis; and (3) analyze one or more alternatives that exclude fluid mineral leasing in sage-grouse habitat.

The BLM complied with these directives in the preparation of this plan amendment shown as follows:

1. At the start of the EA process, the BLM in conjunction with the FWS and the CDOW determined that a population viability assessment would not be necessary to further inform the effects analysis for this EA (EA, page 50). The BLM also sent the FWS a scoping letter on February 24, 2010 (EA, page 97). As discussed in the Purpose and Need for the Proposed Action (EA, pg. 6), the EA was prepared largely to determine the appropriateness of geothermal leasing in the area, particularly as it relates to Gunnison sage-grouse to develop additional lease stipulations necessary for the protection of Gunnison sage-grouse and its habitat, and to better address the analysis of potential effects on Gunnison sage-grouse. Given that concern, the BLM worked closely with the FWS and the CDOW (within Colorado Department of Natural Resources) as cooperating agencies with the BLM in the preparation of the environmental analysis and development of appropriate lease stipulations (EA, pg. 8).

Lease stipulations for protection of Gunnison sage-grouse and habitat were developed from the Gunnison RMP and the Gunnison Sage-grouse Rangewide Conservation Plan (RCP), in accordance with BLM policy (EA, pages 51-54). Based on coordination with the CDOW, the FWS, and other cooperating agencies, the BLM developed additional lease stipulations and lease notices to address protection of inactive leks, winter habitat, and mapped summer-fall habitat, as well as to minimize noise impacts (Sept. 9, 2010 meeting notes in Administrative Record). The various lease stipulations and lease notices developed for Gunnison sage-grouse and habitat protections were incorporated in the Proposed Action and in Alternatives 3, 4, and 5. Refer also to response to issue 6.3 regarding the BLM's coordination with the FWS and CDOW to determine the appropriate level of analysis.

2. The EA states: “Additional mitigation measures will be incorporated into the operations plan and into the conditions of approval or project stipulations. The operations plan will include site plans, location of facilities, wells, pipelines, transmission lines, roads, and other infrastructure (BLM, 2008b). The BLM has the discretion to modify surface operations to change or add specific mitigation measures when supported by scientific analysis. All mitigation/conservation measures not already required as stipulations would be analyzed in a site-specific NEPA document, and be incorporated, as appropriate, into conditions of approval of the permit, plan of development, and/or other use authorizations” (EA, page 37).
3. As referenced above, Alternative 5 would have closed the analysis area to geothermal leasing.