



**US Department of the Interior
Bureau of Land Management
San Luis Valley Public Lands Center,
Colorado**

San Luis Valley Geothermal Leasing Analysis
Environmental Assessment and
Resource Management Plan Amendment

**FINAL SCOPING REPORT
NOVEMBER 2010**



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ACRONYMS AND ABBREVIATIONS

Full Phrase

BLM	Bureau of Land Management
CFR	Code of Federal Regulations
DR	Decision Record
EA	Environmental Assessment
EIS	Environmental Impact Statement
FONSI	Finding of No Significant Impact
NEPA	National Environmental Policy Act
NOI	Notice of Intent
RMP	Resource Management Plan
ROW	Right-of-Way
SLRA	San Luis Resource Area
US	United States
USC	United States Code

EXECUTIVE SUMMARY

Public involvement is a vital component of the National Environmental Policy Act of 1969 (NEPA) for vesting the public in the decision-making process and allowing for full environmental disclosure. Guidance for implementing public involvement is codified in 40 Code of Federal Regulations (CFR) 1506.6, thereby ensuring that federal agencies make a diligent effort to involve the public in preparing NEPA documents.

Scoping is a process designed to allow public participation in determining the range of issues and alternatives to be addressed in a NEPA document. Scoping helps ensure that real problems are identified early, that they are properly studied, that issues of no concern do not consume time and effort, and that the proposed action and alternatives are balanced, thorough, and able to be implemented.

PUBLIC SCOPING ACTIVITIES

The San Luis Valley Public Lands Center (SLVPLC) is preparing an Environmental Assessment (EA) to consider whether, and under what terms and conditions, to issue geothermal leases. The EA includes an amendment to the San Luis Resource Area Resource Management Plan (SLRA RMP) which is necessary as SLRA RMP and its associated environmental analyses did not adequately address geothermal resources; this amendment is required before geothermal leases can be issued. Review and amendment of the SLRA RMP is also necessary due to new information concerning sensitive species and cultural resources. The amendment will include identification of appropriate stipulations, best management practices, and mitigation measures. Additional site specific NEPA analysis would be required prior to development for geothermal projects.

The scoping process for the proposed amendment and associated NEPA analysis began in June, 2010 with the formal scoping comment period starting on September 13, 2010, with the publication of a notice of intent (NOI) in the *Federal Register*. The NOI notified the public that the SLVPLC was soliciting information and feedback from the public, federal, state, tribal and local government agencies, and organizations to help inform the issues, impacts and

potential alternatives that the EA addresses. The public comment period ended on October 13, 2010.

A San Luis Valley Geothermal Leasing EA Web site was launched to serve as a clearinghouse for project information during the planning effort. The Web site (<http://www.blm.gov/co/st/en/fo/slvplc.html>) provided contact information for site visitors to submit comments about the project.

PUBLIC SCOPING RESULTS

Comment submissions were received by US mail, e-mail, and in person at the scoping meetings. Most submissions contained multiple comments on various topics. A total of 86 comments were submitted. All information gathered during and after the scoping period will be evaluated, verified, and incorporated into the EA, as appropriate.

Most of the written submissions were from individuals and non-profit organizations. The majority of the comments focused on issues related to fish and wildlife, water resources, renewable energy development, and the NEPA process for this project.

ADVERTISEMENT AND ANNOUNCEMENTS

Information about the public scoping period was advertised through the following means:

- Press releases were published with information about the public scoping meetings on June 17, 2010, and with details about the formal scoping comment period on September 13, 2010.
- A project newsletter was published and sent to the project mailing list in June 2010, with information about the project and public involvement opportunities.
- The NOI was published in the *Federal Register* (Volume 75, Number 176, Page 55602-55603) on September 13, 2010, which directed readers to the project website.
- A notification for each public meeting and other project announcements were published on the BLM Web site:

http://www.blm.gov/pgdata/etc/medialib/blm/co/field_offices/slvplc/Uplod_Files.Par.30165.File.dat/SLVPLC_Geothermal_Leasing_Newsletter_June_2010.pdf

COMMENT SUMMARY

The official close of the scoping period was October 13, 2010. Comments will continue be accepted throughout the EA/RMP amendment process as time allows. While a variety of issues were raised in the comments, several common themes were present. The main issues and concerns raised are summarized below.

Summary of Commenters

The BLM received 12 written submissions including a total of 86 separate comments during the public scoping period. Comments were categorized, coded, entered into a database, tallied, and analyzed. Categories included process categories, planning issues, and commenter affiliation.

Of the 12 submissions received, 4 were received from the general public, 6 from non-profit organizations, 1 from a state government agency, and 1 from a federal government agency.

Summary of Main Issues and Concerns

The main issues and concerns expressed in the comment letters are described below.

A total of 5 comments were received related to the NEPA process. Commenters requested additional comment periods throughout the writing of the EA/RMP amendment, suggested general guidelines and best management practices to include, and requested that the BLM come up with alternatives that would mitigate harm to public lands.

Eleven (11) comments were received on issues of the implementation of geothermal development. Concerns included the following:

- Concern about the impacts of drilling, which included groundwater contamination, hydraulic fracturing, and waste byproducts.
- Requests that the BLM ensure that there is no disturbance of hot springs, wildlife, and other resources.
- Requests that the BLM perform site-specific analyses, both in low-sensitivity and high-sensitivity areas.

Fifty-two (52) comments were received related to specific resource planning issues, including the following:

- A total of 16 comments related to fish and wildlife. Concerns included the overall potential impacts on fish and wildlife, specifically sensitive habitat areas, wetlands, the protection of waterfowl, fish production units, and sage grouse;
- A total of 10 comments related to water resources. Concerns included the protection of private wells, local waterways, and hot springs as well as the protection from groundwater contamination;
- A total of 7 comments related to Renewable Energy Development. Issues included impacts from renewable energy development, including the impacts of transmission lines on the landscape and cumulative impacts of large-scale renewable projects;

- A total of 3 comments related to Cultural and Heritage Resources. Concerns included the impacts that alternatives would have on rock art sites with the suggestion that rock art sites should receive protection and the concern that development in the San Luis Valley would compromise cultural resources, including the degradation of the lands which were once valued by Native tribes, Hispanic settlers, and Anglo ranchers.
- A total of 3 comments related to Special Designation Areas. Concerns included the protection of State Wildlife Areas and State Trust Lands from fluid mineral exploration and development, protection of conservation easements and adjacent lands from geothermal development, as well as the protection of National Heritage Areas from mineral extraction.
- A total of 3 comments related to Visual Resources. Concerns included the protection of view corridors in the San Luis Valley, specifically requesting protection for view corridors along National Historic Trails and within Land Trusts.
- There were a total of 2 comments that related to Livestock Grazing. Commenters advocated the protection of ranches and grazing areas from geothermal energy development.
- One (1) comment related to Special Status Species. The comment suggests that species classified as Colorado State Species of Concern receive greater protection by the heightening of their status to Special Status Species.
- One (1) comment related to Minerals and Energy. The commenter was concerned with split-estate issues,
- One (1) comment related to Recreation. The commenter desired the retention of open space

CHAPTER I

INTRODUCTION

In accordance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] 4321), the United States (US) Department of Interior, Bureau of Land Management (BLM) is preparing an environmental assessment (EA) for geothermal leasing within the San Luis Valley Public Lands Center. The EA will include an amendment to the BLM's San Luis Resource Area (SLRA) Resource Management Plan (RMP) of September 1991. As required under NEPA, the BLM conducted public outreach (scoping) activities for the EA and RMP amendment. Scoping activities began with public outreach and scoping meetings in June and July 2010, and continued with the publishing of the NOI in September 2010 and the formal comment period from September 13, 2010 through October 13, 2010. This report summarizes the scoping activities conducted, and the results of those outreach efforts.

I.1 GOAL OF THE EA/RMP AMENDMENT

The goal of the EA is to evaluate the impacts on the natural and human environment from the potential of geothermal energy development in the San Luis Valley. The EA will include an amendment to the SLRA-RMP of September 1991 and will address geothermal resources as well as incorporate new information concerning sensitive species and cultural resources. Analysis will specifically address development of adequate protective measures and stipulations for the following:

- Protection of sensitive species and wildlife;
- Protection of important cultural resources;
- Impacts to water resources;
- Geothermal resources and existing uses;
- Access to and across private lands;
- Visual impacts from potential development;
- Demand for renewable energy and local economic impacts; and
- Cumulative impacts associated with geothermal leasing, including the potential for exploration and development.

I.2 OVERVIEW OF THE SCOPING PROCESS AND SCOPING REPORT

Public involvement is being conducted throughout the course of the EA/RMP Amendment process, and the public will have opportunity to comment specifically on multiple phases of the project. This Scoping Report covers the first of these stages of public involvement, herein referred to as *scoping*.

Scoping is a public participation process designed to help the public agency with the responsibility for carrying out or approving a project, referred to as the “lead agency,” to determine the scope of issues and alternatives to be addressed in the EA/RMP Amendment. Public scoping began with solicitation of public input and public scoping meetings in June and July 2010. A project Web site was launched prior to the beginning of the scoping period. Public scoping meetings were held on July 7th and 8th in Saguache and Alamosa Colorado respectively. These meetings provided an opportunity for members of the public, local government, Native American tribes, and other interest groups to learn about the EA/RMP Amendment, to provide input into the development of the EA/RMP Amendment, and to voice their concerns related to potential environmental impacts so that they may be addressed in the EA/RMP Amendment.

Public comments were accepted starting in June 2010. The formal public scoping comment period as required by NEPA began on September 13, 2010, with the publication of the Notice of Intent (NOI) in the *Federal Register* and continued through October 13, 2010.

This report documents the results of the public scoping phase of this project and will be used by the BLM to identify the key issues, data, and other information provided by the public in developing the EA/RMP Amendment.

I.3 SCOPING ACTIVITIES CONDUCTED

Efforts were undertaken to inform and involve target audiences during the scoping period. Scoping activities conducted included the following:

- NOI published in *Federal Register*;
- Two scoping meetings;
- Two press releases;
- A project newsletter; and
- Launching of a project website.

Scoping efforts were designed to communicate project details to, and solicit input from, various stakeholders in the EA/RMP Amendment process. Details for each component are included below.

I.3.1 Notice of Intent in the *Federal Register*

As defined under NEPA, the scoping period began with the publication of the NOI in the *Federal Register* on September 13, 2010. The NOI published was entitled “Notice of Intent To Prepare an Environmental Assessment To Amend

the Resource Management Plan for the San Luis Resource Area for Geothermal Leasing in Colorado's San Luis Valley." The NOI:

- Noted that the scoping period would continue through October 13, 2010;
- Indicated that the scoping meetings were announced at least 15 days in advance in local media, newspaper, and on the BLM website;
- Provided the project Web site;
- Provided information on how to submit comments;
- Noted that the SLRA-RMP was not amended in the 2008 Programmatic Environmental Impact Statement (EIS) for Geothermal Leasing in the Western US due to administrative oversight;
- Noted that the amendment to the SLRA-RMP is also necessary due to new information concerning sensitive species that are not analyzed in the existing RMP;
- Noted the number of acres in the SLRA available to geothermal leasing, and listed relevant nondiscretionary closures;
- Stated that currently, there are no federal geothermal leases in effect in the planning area; and
- Stated the purpose of the public scoping process.

A copy of the NOI is included in **Appendix A**, Notice of Intent.

1.3.2 Scoping Meetings

Two public scoping meetings were held to discuss the San Luis Geothermal EA/RMP amendment. The first was held at the Community Center in Saguache, Colorado, on July 7, 2010. The second was held at Porter Hall at Adams State College in Alamosa, Colorado, on July 8, 2010. At each scoping meeting, a project information sheet and a preliminary project map were made available to attendees.

Attendees were encouraged to submit written comments so that their concerns could be accurately conveyed and formally addressed in the EA/RMP Amendment. Comment forms were available at the meetings for attendees to fill out and submit at the meeting or mail in later.

All materials used at the scoping meeting are available online at the following Web site: http://www.blm.gov/co/st/en/fo/slvplc/Geothermal_Leasing.html.

I.3.3 Project Web Site

The project Web site was established on the publication date of the NOI in the *Federal Register*. The Web site can be found at http://www.blm.gov/co/st/en/fo/slvplc/Geothermal_Leasing.html. The project Web site contained the following information and continued to be developed throughout the scoping period:

- Geothermal Leasing Newsletter (June 2010);
- Project News Release detailing the time and location of scoping meetings (June 2010);
- Links to multiple PowerPoint presentations that give background and relevance to the project;
- A map showing tentative heat flow zones in the resource area as well as a map detailing sensitive biological resources;
- A link to the Geothermal Programmatic EIS website;
- Other useful links to information geothermal energy; and
- Contact information for the BLM.

I.3.4 Media Outreach

Two press releases were published on the BLM website and distributed to local news agencies. The first on June 17th, 2010 described the launch of the project, the project Web site, and the date, time, and location of the local scoping meetings. A second press release was published on September 13, 2010, soliciting public comment and announcing the dates of the formal public scoping comment period. Copies of the press releases are included in **Appendix C**, Press Releases.

I.3.5 Project Newsletter

A newsletter was released in June 2010 that briefly described the purpose of the EA/RMP amendment. The newsletter gave background information on the Programmatic EIS for Geothermal Leasing in the Western US, and gave tentative dates for the public scoping period and the expected release of the EA/ RMP amendment for public review. The project newsletter also listed the dates, times, and locations for public scoping meetings. A copy of the project newsletter is included in **Appendix B**, Project Newsletter.

I.4 STAKEHOLDER INVOLVEMENT

The BLM is closely coordinating with local agencies that may be impacted by this project, including the Colorado Division of Wildlife, the National Park Service, and other interested agencies. No official cooperating status has been assigned to any agency. No tribes have requested cooperator status.

Input from interested organizations has been received during the scoping process and will be incorporated as appropriate into the EA/RMP amendment.

CHAPTER 2

SCOPING RESULTS

2.1 ATTENDANCE AT SCOPING MEETINGS

In total, 22 members of the public and representatives of government agencies and special interest groups attended scoping meetings held in July 2010. Details of attendance are provided in **Table 2-1**, Scoping Meeting Attendance, below.

Table 2-1
Scoping Meeting Attendance

Meeting	Number of Attendees
Community Center Saguache, Colorado July 7, 2010, 6:30-9:00 pm	6
Porter Hall at Adams State College Alamosa, Colorado July 8, 2010, 6:30-9:00 pm	16

2.2 COMMENT TRACKING

A total of 12 written submissions, resulting in 86 separate comments, were received during the public scoping period. The most common format used for submissions was e-mail. Submissions were also mailed via US Mail, or faxed or completed at a public scoping meeting. One comment submission was made at a scoping meeting, five received via mail and six letters were received by e-mail.

All public scoping comments were coded and entered into an electronic database for tracking and analysis. The BLM will continue to accept comments throughout the NEPA process. The comments received and evaluated in this Scoping Report will be considered when formulating alternatives and during initial impact evaluations.

2.3 WRITTEN COMMENTS

Twelve comment letters were received during and after the Scoping Period by mail, e-mail, and scoping comment card. Most submissions contained multiple comments on various topics. A total of 86 substantive comments were made in the submissions received.

Of the 12 submissions received, 4 were received from the general public, 6 from non-profit organizations, 1 from a state government agency, and 1 from a federal government agency. A list of commenters and their associated organization, if applicable, is provided in **Table 2-2, Commenters**.

**Table 2-2
Commenters**

Name	Affiliation
John Brink	Citizen
Christine Canaly Alex Daue (Wilderness Society) and several others from different organizations	San Luis Valley Ecosystem Council The Wilderness Society; Center for Native Ecosystems; Arkansas Valley Audubon Society; Wild Connections; Colorado Environmental Coalition; Defenders of Wildlife; Quiet Use Coalition; Rocky Mountain Recreation Initiative
Stephen Glover	Citizen
Mark Henderson	Old Spanish Trail Association Stewardship Committee
Dan Jones	Orient Land Trust
Julie Sharp	National Park Service
David Kezerle	Citizen
Ceal Smith	San Luis Valley Renewable Communities Alliance
Tom Spezze	Colorado Division of Wildlife
Linea Sundstrom	American Rock Art Research Association
Michael Wisdom	Citizen

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CHAPTER 3

COMMENT SUMMARY

3.1 METHOD OF COMMENT COLLECTION AND ANALYSIS

All written submissions received on or before October 13, 2010, were evaluated and are documented in this Scoping Report. All comments received during the EA/RMP amendment process will be considered in alternative formulation and project planning. All original public comment letters are included as **Appendix D**, Submitted Public Comments.

To ensure that public comments were properly registered and that none were overlooked a multi-phase management and tracking system was used. Each written submission was logged and numbered. Once all comments were received and documented, the BLM assigned to each comment a process category and resource category, as appropriate. These classifications detail which issues raised will be resolved through the current planning effort. Process Categories are discussed in **Section 3.2**, Summary of Public Comments by Process Category, below.

To assist with the analysis, the BLM entered comments into the Public Input and Comment Tracking database and organized comments by planning issue categories and affiliation of the commenter. Finally, these identifiers were queried and tallied to provide information on planning and other issue categories. Through categorizing and organizing the scoping comments, the BLM was able to provide a basic analysis of the scoping comments, and determine which issues appear to be of relevance to public concern. The Public Input and Comment Tracking database will be used throughout the EA/RMP process to track comments and responses.

3.2 SUMMARY OF PUBLIC COMMENTS BY PROCESS CATEGORY

All public comments received were classified into process categories for analysis. Process categories and the corresponding number of comments received for each category are included in **Table 3-1, Comments by Process Category**, below. Process categories for which comments include the following:

Issues to be addressed in the EA/RMP Amendment

1. Resource Planning issues
2. General Comments related to the project
3. Comments on the NEPA process for the project
4. Comments related to implementation and development of geothermal resources as a result of the project.

Issues outside of the scope of the EA/RMP Amendment

- 1: Non-relevant Implementation level issues
2. Issues to be addressed by national policy or administrative action
General Issues that are beyond the scope of this project.

**Table 3-1
Comments by Process Category**

Process Category Code	Percent of Comments	Number of Comments
Issues to Be Addressed in the EA/RMP Amendment	93	80
Resource Planning issue	60.4	52
Comment Related to Geothermal Development	15.1	13
General Comment Related to Project	11.6	10
Comment on NEPA process for project	5.8	5
Issues Outside the Scope of the EA/RMP Amendment	7.0	6
General Issue Beyond the Scope of this Project	5.8	5
Non-relevant Implementation Level Decisions	1.2	1
Issues to be addressed by BLM national policy or administrative action	0	0
Total	100	86

3.3 ISSUES TO BE ADDRESSED IN THE RMP AMENDMENT

Of the 86 comments received, 80 were related to issues that will be addressed in the EA/RMP amendment. Of these comments, 52 (60.4 percent of total comments) were related to a resource issue that will be addressed in the

EA/RMP amendment. Details of the comments by resource are included in **Section 3.3.4, Summary of Comments by Planning Resource Category**, below. Ten (10) comments (8.6 percent) were general comments related to the project. General comments on the NEPA process for this project accounted for 5 total comments (5.8 percent), and comments related to geothermal development accounted for 13 total comments (15.1 percent of total comments). Details for each category are included below.

3.3.1 General Comments Related to the Project

There were 10 total General Comments relating to the project. Comments included the following topics:

- Commenters pointed out that geothermal energy is an appropriate way to empower communities to utilize alternative energy sources; development would help cut back the nation's addiction to fossil fuels and slow the threat of climate change.
- Commenters acknowledged that there are other benefits to the community associated with geothermal development such as increased employment, a reliable local energy source, and a small environmental footprint.
- Commenters want the BLM to prioritize leasing and development sites in areas characterized as low sensitivity, and to take measures to avoid and mitigate impacts in these areas.

3.3.2 Comments Related to the NEPA Process

A total of 5 comments related to the NEPA process for this project.

- Commenters suggested that specific guidelines be incorporated into the EA/RMP amendment which will protect State Wildlife Areas, wildlife resources, historic trails, and other valued resources.
- Commenters wanted the BLM to consider a no leasing alternative for public lands as well as a range of reasonable alternatives to preserve sensitive resources and mitigate harm to public lands.
- Commenters requested an additional comment period after the Draft EA and RMP Amendment are released.

3.3.3 Comments Related to Geothermal Development for this Project

The EA will analyze the reasonably foreseeable development of geothermal resources and determine stipulations and best management practices needed during development. As such, geothermal implementation comments were considered in scope for the project. A total of 11 comments concerned project specific geothermal development as a result of leasing activity, including the following issues:

- Commenters expressed concerns about the potential for contamination of groundwater and surface water as a result of

geothermal drilling and requested that there be pre- and post-construction monitoring to minimize and track disturbances.

- Commenters want to minimize any disturbance of hot springs in the area and prevent changes in temperature of existing springs.
- Commenters suggested that geothermal leases be placed in areas that are already disturbed to mitigate impacts on wildlife.
- Commenters provided a list of best management practices and stipulations that would protect wildlife and reduce impact on the landscape and its natural resources.
- Commenters want the BLM to examine all potential impacts from the process involved in drilling geothermal wells, specifically hydraulic fracturing of underground formations, chemical usage, and toxic wastes.
- Commenters want the BLM to perform site-specific analyses, both in low-sensitivity and high-sensitivity areas.

3.3.4 Summary of Comments by Planning Resource Category

While some comments addressed multiple resource categories, one primary category was selected for analyzing each comment. Of comments related to resource issues, the number of comments is as follows: 16 comments relating to Fish and Wildlife; 10 comments relating to Water Resources; 7 comments relating to Renewable Energy Development; 4 comments on Special Designation Areas; 3 comments on Visual Resources; 3 comments relating to Cultural and Heritage resources; 2 Editorial comments; 2 comments relating to Livestock Grazing; and 1 comment each for Special Status Species, Energy and Minerals and Recreation. A summary of comments for each resource issue is included below.

Comments Related to Fish and Wildlife

- Commenters wanted to know the effect of this project on wildlife habitat, specifically sensitive habitat areas.
- Commenters were concerned about how the Orient Mine, Colorado's largest bat colony, would be affected as it is home to nearly a quarter-million Mexican free-tailed bats.
- Commenters were concerned that the BLM would not offer lease protections to state lands that use geothermal resources to benefit wildlife, including state fish production units.
- Commenters want a variety of big game, small game, waterfowl, and other species to be considered for protection.
- Commenters were concerned that geothermal development could disturb sensitive wetland areas and the waterfowl that inhabit them.

- Commenters wanted to ensure that geothermal leasing would be consistent with the Gunnison Sage-Grouse Rangewide Conservation Plan and take into account new peer-reviewed literature that outlines suggested guidelines for sage-grouse protection.

Comments Related to Water Resources

- Commenters requested that their water wells be protected from degradation or from the lowering of the water table.
- Commenters requested that lands adjacent to the San Luis Creek not be developed to maintain the integrity of the San Luis Creek watershed and protect the riparian habitat.
- Commenters were concerned about the sensitivity of Valley View Hot Springs and how geothermal development could impact the temperature and quality of the hot springs.
- Commenters want the geothermal leasing areas to minimize groundwater contamination.
- Commenters suggested that all impacts on water resources be considered, including how surface and sub-surface water rights could change the socioeconomic and cultural values of the area.

Comments Related to Renewable Energy Development

- Commenters suggested that efforts to conserve energy, increase efficiency, and reduce demand for energy should be pursued before new renewable energy infrastructure is developed.
- Commenters suggested that new renewable energy projects be sited as close to the energy source as possible, so as to mitigate the costs and environmental impacts of new transmission lines.
- Commenters were concerned about the cumulative impacts that solar, hydro, and geothermal power projects would have on the San Luis Valley.
- Commenters urged the importance of transitioning from fossil fuels to renewable forms of energy while cautioning that construction of new transmission lines should be limited and regulated carefully to mitigate environmental impacts.
- Commenters want development in the San Luis Valley to be located in the lowest-conflict areas. Commenters pointed out that the Geothermal Programmatic EIS neglects to prioritize potential development sites by considering which sites would be of lowest impact.

Comments Related to Special Designation Areas

- Commenters stressed that State Wildlife Areas are created specifically to prohibit commercial activities and to protect wildlife,

and that although State Trust Lands are acquired by Colorado Department of Wildlife for the same reason, they are subject to leasing. Colorado Division of Wildlife suggests that the BLM be conscious of this when deliberating on the planning area for the EA and RMP amendment, which contain approximately 10,221 acres of State Wildlife Areas that contain federal minerals subject to potential geothermal leasing and development.

- Commenters suggested that the BLM be conscious of the fact that State Wildlife Areas and State Trust Lands were created to protect wildlife when facilitating geothermal leases.
- Commenters were highly concerned that the following special management areas would be protected: areas in the National Landscape Conservation System, including National Heritage Areas, as well as scenic byways. Commenters stressed that these areas were created to be protected and preserved, and geothermal development defeats these purposes.
- Commenters requested that BLM lands adjacent to areas of conservation (i.e., land trusts) not be made available for geothermal energy development.

Comments Related to Visual Resources

- Commenters stressed the importance of protecting key visual resources, specifically lands which are currently maintained under land trusts and historic trails.

Comments Related to Cultural and Heritage Resources

- Commenters requested that the EA address the impact of various management alternatives on rock art sites in the area, both known and unrecorded sites; specifically, consultation with a rock art site management specialist was suggested.
- Commenters stressed the importance of the San Luis Valley as a culturally significant area, highlighting the following points: Native American settlement over 12,000 years ago; Historical use of water resources in the area; San Luis Valley boasts the oldest town, the oldest parish, and the oldest water rights in Colorado; various tribes consider Mount Blanca to be sacred.

Comments related to Livestock Grazing

- Commenters want to ensure that geothermal energy development in the San Luis Valley does not lead to the loss of grazing lands.

Comments Related to Special Status Species

- Commenters requested that the BLM include Colorado State Species of Concern and Threatened and Endangered species as “other special status species.”

Comment related to Minerals and Energy

- Commenters pointed out that there are split-estate issues in the area, and they want these to be handled with diligence.

Comment Related to Recreation

- Commenters want the BLM to take precautions in order to prevent the loss of open space lands

3.4 COMMENTS OUTSIDE OF THE SCOPE OF THE EA/RMP AMENDMENT

General issues beyond the scope of this project accounted for 5 comments (5.8 percent of total comments); and one comment was related to an implementation-level decision (1.2 percent)

Comments beyond the scope of this plan discussed communication flaws of other agencies, suggested updates of other management plans, identified acreages of lands with certain protection classifications and suggested stipulations for those protected areas, and suggested incorporating issues into the EA/RMP amendment that are outside of its current scope.

One comment is outside the scope of the EA/RMP Amendment because it is an implementation-level issue. The comment requested that the BLM create a mechanism for public notice and tracking of geothermal leases and incorporate it into a Web site.

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CHAPTER 4

PLANNING ISSUE SUMMARY

Based on internal (within the BLM) and external (public) scoping, planning decision issues have been identified. A planning decision guides future land management actions and subsequent site-specific implementation decisions; in this case, the planning decision is to determine where geothermal leasing will be open or closed on BLM-administered lands. Issues are points of disagreement, debate or dispute with the planning decisions; issues point to environmental effects and can help shape the proposal, alternatives, and mitigation measures. The BLM will use the planning issues to guide the development of a reasonable range of alternatives for the RMP Amendment. Based on the analysis of public scoping comments, the following planning issues were identified:

- What are the water resource impacts that could result from geothermal leasing? What are the best management practices that can be applied to minimize these impacts?
- How could threatened, endangered, or sensitive species be affected by leasing decisions? What stipulations will be needed in order to conserve suitable sensitive habitat to ensure and maintain healthy local populations of listed and sensitive plant and animal species?
- What impacts on critical big game winter range, wetlands, sage-grouse leks, and other wildlife habitats can be expected as a result of geothermal leasing decisions? What stipulations would be needed to lessen any impacts?
- What cultural resource impacts can be anticipated from geothermal leasing, and what stipulations or conditions of approval are needed to prevent impacts on eligible sites?
- Will leasing decisions impact areas of Native American concern or sensitivity?
- To what extent could geothermal resources and features in and near the lease area(s) be affected if lands are open to leasing? What

stipulations should be included in order to lessen impacts on the geothermal resources and features?

- What are the cumulative impacts from renewable energy projects in the project area?
- How should other land uses and special designation areas be addressed, and what areas should be automatically closed to geothermal leasing? Specific concerns included, but were not limited to: State Wildlife Areas, State trust lands, Special Recreation Management Areas, Areas of Critical Environmental Concern, Wilderness and Wilderness Study Areas, National Historic and National Scenic Trail Corridors, National Landscape conservation System units, Wild & Scenic Rivers, Scenic Byways and Backcountry Byways, National Historic landmarks, Interpretive Sites, VRM Class I or 2 lands.

The EA/RMP Amendment will also analyze the reasonably foreseeable on-the-ground actions of geothermal implementation, including exploration, drilling, utilization, or reclamation and abandonment. Issues identified included:

- How much demand is there for renewable energy and specifically geothermal energy? How would local economies be affected?
- How will BLM address access to and across private lands?
- How would potential development of the leases impact visual resources? Are there ways to mitigate visual impacts?
- How would the EA/RMP amendment address issues related to water quantity and quality change during development including, but not limited to: aquifer depletion, subsidence, contamination of ground and surface water, decrease in temperature at hot springs, and induced seismicity,
- How can geothermal development be sited to limit impacts on sensitive resources and utilize existing infrastructure and transmission lines?

The BLM will refine these planning issues as the process continues, and utilize the ideas presented here to develop a reasonable range of alternatives and address BLM and public concerns.

CHAPTER 5

FUTURE STEPS

5.1 SUMMARY OF FUTURE STEPS AND PUBLIC PARTICIPATION OPPORTUNITIES

The next phase of the NEPA process will be to identify alternatives to the projects or components of the projects. These alternatives will address resource issues identified during scoping and will meet the Purpose and Need of the project. In compliance with NEPA and with BLM policy and regulations alternatives should be reasonable and capable of implementation. The BLM will also continue to dialogue with agencies, tribes, and community groups and individuals with an interest in the project. A detailed analysis of the proposed action and alternatives including the no action alternative will be completed, and the BLM's preferred alternative will then be identified.

The EA with final alternatives and the unsigned Finding of No Significant Impact (FONSI) will be released with a Notice of Availability published in the *Federal Register*. The EA and FONSI will be available for a 30-day protest period and 60-day Governor's Consistency Review period. At the conclusion of the review periods, the BLM will resolve all protests and any inconsistencies; once resolved, and if there are no significant effects, the FONSI will be signed and released with a signed Decision Record (DR) approving the RMP amendment.

All publications, including this report, newsletters, the EA with draft and final alternatives, and the DR will be published on the official project Web site. In addition, pertinent dates regarding solicitation of public comments or other public involvement opportunities will be published on the Web site.

5.2 CONTACT INFORMATION

The public is invited and encouraged to participate throughout the development of the EA. Some ways to participate include the following:

- Reviewing the progress of the EA/RMP Amendment at the official project Web site, which will be updated with information,

documents, and announcements throughout the preparation of the EA; and

- Requesting to be added to or to remain on the official project mailing list in order to receive future mailings and information.

Anyone wishing to be added to or removed from the distribution list or requesting further information may e-mail slvplc_comments@blm.gov.

Appendix A

Notice of Intent

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DEPARTMENT OF INTERIOR**Bureau of Land Management**

[LLCOF0000 L14300000.FX0000]

Notice of Intent To Prepare an Environmental Assessment To Amend the Resource Management Plan for the San Luis Resource Area for Geothermal Leasing in Colorado's San Luis Valley**AGENCY:** Bureau of Land Management, Interior.**ACTION:** Notice of Intent.

SUMMARY: In compliance with the National Environmental Policy Act of 1969 (NEPA), as amended, and the Federal Land Policy and Management Act (FLPMA) of 1976, as amended, the Bureau of Land Management (BLM) San Luis Valley Public Lands Center, Monte Vista, Colorado, intends to prepare an Environmental Assessment (EA) and by this notice is announcing the beginning of the scoping process to solicit public comments and identify issues.

The EA will analyze the BLM proposal to amend the San Luis Resource Area (SLRA) Resource Management Plan (RMP) of September 1991, to allocate lands as closed and open to consideration for geothermal leasing and under what conditions.

DATES: This notice initiates the public scoping process for the EA and RMP amendment. Comments on issues may be submitted in writing by October 13, 2010. The date(s) and location(s) of any scoping meetings will be announced at least 15 calendar days in advance, through local media, newspaper, and the BLM Web site at: http://www.blm.gov/co/st/en/fo/slvplc/Geothermal_Leasing.html. In order to be included in the EA and RMP amendment, all comments must be received prior to the close of the scoping period or 30 days after the last public meeting, whichever is later. We will provide additional opportunities for public participation upon publication of the EA and RMP amendment.

ADDRESSES: You may submit comments related to the EA and proposed RMP amendment for Geothermal Leasing in the BLM SLRA in Colorado's San Luis Valley by any of the following methods.

- *Web site:* http://www.blm.gov/co/st/en/fo/slvplc/Geothermal_Leasing.html.
- *E-mail:* slvplc_comments@blm.gov.
- *Fax:* (719) 852-6250.
- *Mail:* BLM, San Luis Valley Public Lands Center, 1803 West Highway 160, Monte Vista, Colorado 81144.

Documents pertinent to this proposal may be examined at the San Luis Valley Public Lands Center.

FOR FURTHER INFORMATION CONTACT:

Joseph Vieira, Renewable Energy Team Project Manager, telephone (719) 852-6213; address BLM, San Luis Valley Public Lands Center, 1803 West Highway 160, Monte Vista, Colorado 81144; e-mail slvplc_comments@blm.gov.

SUPPLEMENTARY INFORMATION: The Programmatic Environmental Impact Statement (EIS) for Geothermal Leasing in the Western United States analyzed geothermal potential, leasing alternatives, and leasing stipulations for subsurface mineral estate administered by the BLM in Colorado, including lands within the SLRA RMP. The Record of Decision (ROD) for Geothermal Leasing in the Western United States amended 14 RMPs in Colorado, but did not amend the SLRA RMP due to an administrative oversight. The ROD for the Programmatic EIS can be found at the following Web site: http://www.blm.gov/wo/st/en/frog/energy/geothermal/geothermal_nationwide. The BLM proposes to amend the SLRA RMP using the NEPA analysis in the Programmatic EIS to support its decision. Review and amendment of the SLRA RMP is also necessary due to new information concerning sensitive species that are not analyzed in the existing RMP. This EA will inform the BLM SLRA RMP amendment decisions to establish resource management consistency, including stipulations and Best Management Practices, in future geothermal leasing in the SLRA.

While there is a history of geothermal leasing on lands administered by the BLM in the SLRA, the San Luis Valley Public Lands Center has not received any new nominations for competitive geothermal leasing to date.

Under the 1991 SLRA RMP, 617,380 acres of the mineral estate within the SLRA were identified as having potential for geothermal resources and allocated as open to consideration for geothermal leasing. Additionally, under the 1991 SLRA RMP the BLM established the following nondiscretionary closures, denying the development of fluid minerals, including geothermal resources:

- 320 acres within the town of Del Norte.
- 40 acres within the town of South Fork.
- 360 acres under the Recreation and Public Purpose lease to the City of Monte Vista for a city park.
- 840 acres within the Pike Stockade Historic Site.
- 3,300 acres designated as BLM wilderness.

- 16,794 acres within BLM wilderness study areas.

There are no Federal geothermal leases in effect in the planning area at this time. The issuance of a geothermal lease does not authorize any land disturbance, development, or use of the surface of the leased lands without further application, environmental review, and approval by the BLM at each stage. Rather, a lease provides a non-exclusive right to future exploration and an exclusive right to produce and use the geothermal resources within the lease area, subject to existing laws, regulations, formal orders, terms, conditions, and stipulations in or attached to the lease form, or included as conditions of approval to permits.

The purpose of this public scoping process is to determine relevant issues that will influence the scope of the environmental analysis, including alternatives, and guide the process for amending the RMP to adopt new stipulations and other conservation measures, and deciding whether, and under what conditions, to issue geothermal leases in the SLRA. This EA and RMP amendment will also serve to correct an administrative error in which the BLM SLRA was not included in the 2008 ROD document associated with the Programmatic EIS for geothermal leasing in the Western United States. This EA and RMP amendment will specifically address development of adequate protective measures and stipulations for the following:

- Geothermal resources and existing uses.
 - Water resources.
 - Cultural resources.
 - Federally listed threatened and endangered species as well as candidate species for Federal listing.
 - Species included in the BLM Colorado sensitive species list (which includes the State of Colorado, Department of Natural Resources threatened and endangered species).
 - Other species of concern.
- Currently, the BLM has identified the following preliminary issues:
- Impacts to water resources.
 - Impacts to private and commercial geothermal uses.
 - Necessary conservation measures for listed and sensitive plant and animal species and habitats.
 - Necessary stipulations and potential impacts to cultural resources.
 - Impacts to known geothermal resources and features in and near the potential lease areas.
 - Demand for renewable energy and local economic impacts.
 - Access to and across private lands.
 - Impacts to critical big game winter range and other wildlife habitat.

- Visual impacts from potential development.
- Cumulative impacts associated with geothermal leasing, including the potential for exploration and development operation.

The BLM will use a combination of scoping periods, public meetings, and the NEPA process to satisfy the public involvement process required by Section 106 of the National Historic Preservation Act (16 U.S.C. 470(f)) as provided for in 36 CFR 800.2(d)(3). Native American Tribal consultations will be conducted in accordance with policy, and Tribal concerns will be given due consideration, including impacts on Indian trust assets. Federal, state, and local agencies, along with other stakeholders that may be interested or affected by the BLM's decision on this project, are invited to participate in the scoping process and, if eligible, may request or be contacted by the BLM to participate as a cooperating agency. Agencies or organizations with technical expertise or jurisdictional authority will be invited to participate as cooperating agencies during the NEPA analysis and environmental review.

The BLM will use an interdisciplinary approach to develop the plan amendment in order to consider the resource issues and concerns identified during public scoping. The planning process will include specialists with expertise in rangeland management, minerals and geology, forestry, outdoor recreation, law enforcement, archaeology, botany, wildlife, fisheries, lands and realty, hydrology, soils, vegetation, and fire. Notification of the planning process will be sent to the Governor of Colorado, county commissioners, local tribes and potentially affected members of the public. The public is encouraged to help identify questions and concerns during the scoping phase.

By this notice, the BLM is complying with requirements in 43 CFR 1610.2(c) to notify the public of potential amendments to the existing SLRA RMP. The BLM land use planning regulations require the BLM to publish, and provide for public review of, the proposed planning criteria that will guide the RMP amendment process. Planning criteria are the constraints, standards, and guidelines that determine what the BLM will or will not consider during its planning process. As such, they establish parameters and help focus analysis of the issues identified in scoping and structure the preparation of the EA and proposed RMP amendment. The BLM welcomes public comment on

the following proposed planning criteria,

1. The BLM will continue to manage the SLRA in accordance with FLPMA (43 U.S.C. 1701. *et seq.*), other applicable laws and regulations, and all existing public land laws.

2. The BLM will use a collaborative, multi-jurisdictional approach with local, state, tribal, and Federal agencies to jointly determine the desired future condition of public lands and provide consistency with their existing plans and policies, to the extent that those plans and policies are consistent with Federal law governing the administration of public land.

3. The BLM will limit its amendment of the RMP to geothermal resource leasing and development issues and will not address management of other resources. The BLM will consider and analyze the impacts from this increased use on other BLM-managed resource values.

4. The BLM will address the socioeconomic impacts of the alternatives.

5. The amendment process will follow the FLPMA planning process and include an EA that will comply with NEPA standards, and an EIS, if a Finding of No Significant Impact cannot be reached.

6. The BLM will consider environmental protection and energy production as both are desirable and necessary objectives of sound land management practices and not to be considered mutually exclusive priorities.

7. The BLM will prepare the EA in compliance with the Geothermal Steam Act, as amended, and the legislative directives set forth in the Energy Policy Act of 2005.

Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority: 40 CFR 1501.7 and 43 CFR 1610.2.

John Mehlhoff,

Acting State Director.

[FR Doc. 2010-22737 Filed 9-10-10; 8:45 am]

BILLING CODE 4310-JB-P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[LLCAD01000 L12200000.AL 0000]

Meeting of the California Desert District Advisory Council

SUMMARY: Notice is hereby given, in accordance with Public Laws 92-463 and 94-579, that the California Desert District Advisory Council to the Bureau of Land Management, U.S. Department of the Interior, will participate in a field tour of BLM-administered public lands on Friday, October 1, 2010, from 8 a.m. to 4:30 p.m. and will meet in formal session on Saturday, October 2, 2010, from 8 a.m. to 4:30 p.m. at the BLM Needles Field Office, 1303 S Highway 95, Needles, CA 92363.

Agenda topics will include updates by Council members and reports from the BLM District Manager and five field office managers. Final agenda items, including details of the field tour, will be posted on the BLM California state Web site at <http://www.blm.gov/ca/st/en/info/rac/dac.html>.

SUPPLEMENTARY INFORMATION: All Desert District Advisory Council meetings are open to the public. Public comment for items not on the agenda will be scheduled at the beginning of the meeting Saturday morning. Time for public comment may be made available by the Council Chairman during the presentation of various agenda items, and is scheduled at the end of the meeting for topics not on the agenda.

While the Saturday meeting is tentatively scheduled from 8 a.m. to 4:30 p.m., the meeting could conclude prior to 4:30 p.m. should the Council conclude its presentations and discussions. Therefore, members of the public interested in a particular agenda item or discussion should schedule their arrival accordingly.

Written comments may be filed in advance of the meeting for the California Desert District Advisory Council, c/o Bureau of Land Management, External Affairs, 22835 Calle San Juan de Los Lagos, Moreno Valley, CA 92553. Written comments also are accepted at the time of the meeting and, if copies are provided to the recorder, will be incorporated into the minutes.

FOR FURTHER INFORMATION CONTACT: David Briery, BLM California Desert District External Affairs (951) 697-5220.

Dated: August 31, 2010.

Teresa A. Raml,
District Manager.

[FR Doc. 2010-22678 Filed 9-10-10; 8:45 am]

BILLING CODE 4310-40-P

Appendix B

Project Newsletter

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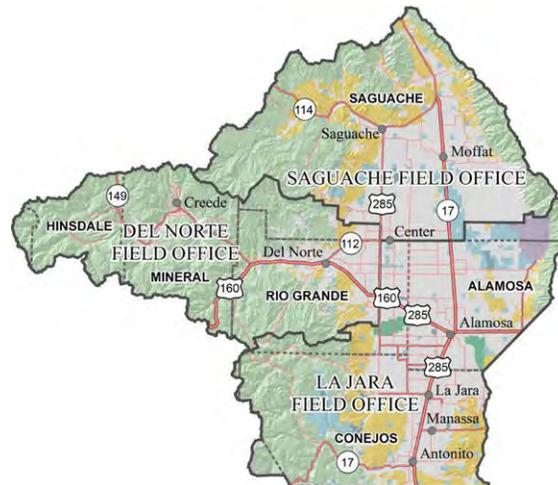
Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment

June 2010

San Luis Valley Public Lands Center

Monte Vista, CO

[San Luis Valley Public Lands Center](#) intends to prepare an Environmental Assessment (EA) to consider which lands to make available for geothermal leasing, and under what conditions. The EA will include an amendment to the Bureau of Land Management's (BLM) [San Luis Resource Area Resource Management Plan \(SLRA-RMP\) of September, 1991](#) and will address the protection of sensitive species and important cultural resources. The BLM is announcing the beginning of the scoping process to solicit public comments and identify issues to analyze in the EA.



Background

The [Programmatic Environmental Impact Statement \(PEIS\) for Geothermal Leasing in the Western United States](#) analyzed geothermal potential, leasing alternatives, and leasing stipulations for the subsurface mineral estate administered by BLM in Colorado, including the SLRA-RMP. The Record of Decision for the PEIS amended 14 RMPs in Colorado, but did not include the SLRA-RMP. The BLM proposes to amend the SLRA-RMP using this environmental analysis. [Click here](#) to learn more about RMPs. Decisions made in this project will apply to all BLM managed lands, U.S. Forest Service lands, and [split-estate lands](#) covered within the analysis area. The map above shows BLM-managed lands as yellow, U.S. Forest Service lands as green, and private lands as grey.

Public Meetings on July 7th and 8th

The BLM will be holding two public meetings to present information on the project and to solicit public input. The public input will help to define areas to be open or closed to geothermal leasing and to help define the scope of the environmental analysis in the EA. Everyone is welcome. Written comments will be accepted at the meetings and comment forms will be available. Comments may also be submitted by email to slvplc_comments@blm.gov or by mail to Joe Vieira, San Luis Valley Public Lands Center, 1803 West Hwy 160, Monte Vista, CO 81144. The meetings will start with an open house format from 6:30 p.m., with a presentation at 7 p.m., a question and answer period at 7:30 p.m., and followed by a continued open house until 9 p.m..

Meeting dates and locations are as follows:

Wednesday July 7

Saguache Community Center
525 7th St
Saguache, CO

Thursday July 8

Room 130, [Porter Hall, Adams State College](#)
(2nd building north of Main Street, parking lot out front)
208 Edgemont Boulevard
Alamosa, CO

Project Schedule

Public Scoping: June - August 2010

EA and RMP Amendment: March 2011

A project website will be established soon to serve as an ongoing source of information throughout this project.



Dear Readers

This is the first in a series of newsletters from the San Luis Valley Public Lands Center about their *Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment*. This newsletter provides an introduction to the project, notice of upcoming public meetings, and instructions on how to submit comments.

In This Issue:

Introduction

Project Background

Announcement of Scoping Meetings

How to Submit Comments

If you did not also receive this newsletter by e-mail, please submit your e-mail address to slvplc_comments@blm.gov to be added to the electronic mailing list.

For Further Information:

San Luis Valley Public Lands Center
1803 West Hwy 169
Monte Vista, CO 81144
Phone: 719-852-5941
Fax: 719-852-5941

Project Manager: Joseph Vieira
Phone: 719-852-6213

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*Acting as contracted agent for the Bureau of Land Management

US Department of the Interior
Bureau of Land Management
c/o EMPSI*
182 Howard Street, Suite 110
San Francisco, CA 94105-1611

Appendix C

Press Releases

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San Luis Valley
Bureau of Land Management



San Luis Valley Public Lands



Rio Grande
National Forest



Contact: Joseph Vieira, (719) 852-6213

News Release

--FOR IMMEDIATE RELEASE--

June 17, 2010

Public Lands Center Seeks Input on Geothermal Leasing Resource Management Plan Amendment Project

MONTE VISTA – The San Luis Valley Public Lands Center (SLV-PLC) will hold public meetings in Alamosa and Saguache concerning the amendment of the San Luis Resource Area Resource Management Plan (SLRA-RMP) to identify which lands to make available for geothermal leasing, and under what conditions. The SLV-PLC is preparing an Environmental Assessment (EA) to analyze the effects of amending the RMP and seeks public input to solicit public comment and identify issues to be analyzed in the EA. Meetings will be held as follows:

Wednesday July 7th, Saguache Community Center, 525 7th St, Saguache, CO

Thursday July 8th, Room 130, Porter Hall, Adams State College, (2nd building north of Main Street, parking lot out front), 208 Edgemont Boulevard, Alamosa, CO

The meetings will start with an open house format from 6:30 p.m., with a presentation at 7 p.m., a question and answer period at 7:30 p.m., and followed by a continued open house until 9 p.m. Information regarding the project will be posted as it becomes available on the SLV-PLC website at www.blm.gov/co/st/en/fo/slvplc.html, or please contact Joseph Vieira at the SLV-PLC at 719-852-6213 for more information.

###

San Luis Valley
Bureau of Land Management



San Luis Valley Public Lands



Rio Grande
National Forest



Contact: Michael Blakeman, (719) 852-6212

News Release

--FOR IMMEDIATE RELEASE--

September 13, 2010

Input Sought for Geothermal Leasing Analysis

MONTE VISTA – The San Luis Valley Public Lands Center (SLV-PLC) is seeking public comment to guide a geothermal land use analysis. Ultimately, the environmental assessment will form the basis to amend the Bureau of Land Management’s 1991 San Luis Resource Area Resource Management Plan.

The analysis will identify which public lands and subsurface mineral estates to make available for geothermal leasing. The analysis will also determine under what conditions these lands will be made available for geothermal leasing. Comments will help identify issues and be used to develop alternatives to be analyzed.

Written comments may be submitted by mail to SLV-PLC Attn: BLM Geothermal, 1803 W. Hwy 160, Monte Vista, CO, 81144 or via email to slvplc_comments@blm.gov. Comments are requested by the end of the formal public scoping period Oct 13, 2010. All public comments received to date will be considered in the analysis.

Information regarding the project is posted on the BLM website at www.blm.gov/co/st/en/fo/slvplc.html, or contact Joseph Vieira at 719-852-6213 for more information.

###

Appendix D

Submitted Public Comments

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Commenters Letters Received

Date	Name	Affiliation
7/7/2010	Stephen Glover	Citizen
7/7/2010	Mark Henderson	Old Spanish Trail Association Stewardship Committee
7/8/2010	Michael Wisdom	Citizen
7/10/2010	John Brink	Citizen
7/28/2010	David Kezerle	Citizen
8/13/2010	Dan Jones	Orient Land Trust
9/11/2010	Linea Sundstrom	American Rock Art Research Association
10/12/2010	Tom Spezze	Colorado Division of Wildlife
10/13/2010	Alex Daue (Wilderness Society) and several others from different organizations	The Wilderness Society; Center for Native Ecosystems; Arkansas Valley Audubon Society; Wild Connections; Colorado Environmental Coalition; Defenders of Wildlife; Quiet Use Coalition; Rocky Mountain Recreation Initiative
10/13/2010	Christine Canaly	San Luis Valley Ecosystem Council
10/13/2010	Ceal Smith	San Luis Valley Renewable Communities Alliance
10/13/2010	Julie Sharp	National Park Service

Note: Appendices and attachments to comment letters are not included in this document. Complete public comments will be included in the project administrative record and can be viewed at the San Luis Public Lands Center.

"Stephen Glover" <stephen_C_glover@hotmail.com>

To "Joe Vieira" <joseph_vieira@blm.gov>

07/07/2010 06:40 PM

Subject July 7 and 8 geothermal meetings

Dear Mr. Vieira:

I just received an email noting your geothermal public meetings for the 7th and 8th. I see that notice of these was placed somewhere in June, but I was not aware of them. Unfortunately, on such short notice, those of us in the Chalk Creek area of Chaffee County who have grave concerns about a project in our valley would have liked to have attended.

There are many concerns specific to our area, including ground water contamination due to our particular geology, split-estate issues, and the economic downside risks to our local economy. Whether those, in part or in total, would be of concern to your area is something the citizens of your area need to investigate. These issues were not presented to our community by the Governor's Energy Office last summer prior to our lease coming up for auction - it has taken great effort to get the lease taken "back to the drawing board" for either the 3rd or 4th time to attempt to rectify deficiencies in just the original lease. We have yet to deal with the real issues if and when the lease may be auctioned and any development attempted.

You should also know that we have a retired local geologist (who has published work on the subject of geothermal energy in refereed journals) who shares our concerns as well. At some point it would be important for your folks to hear both sides of this story. I'm all in favor of geothermal energy development but it is truly site-specific in it's desirability and the risks and rewards it may pose. It certainly works well, for the most part, in Nevada!

Perhaps a more balanced forum would be useful - it certainly was here. So feel free to call me and we can discuss this further. You can reach me at 719-395-5653 most any time.

Yours truly,
Stephen Glover
Nathrop, CO

"Mark Henderson" <markscotthenderson@netzero.net>
To slvplc_comments@blm.gov 07/07/2010 05:33 PM
cc manager@oldspanishtrail.org,
rgrandrud@cox.net,
Urracapro@aol.com,
akrall@fs.fed.us,
patsjoy6@yahoo.com

Subject Scoping - Geothermal Leasing EA & RMP Amendment

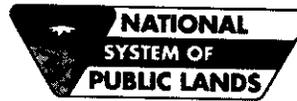
Dear Mr. Vieira - I have received notice through Don Mimms, Executive Director of the Old Spanish Trail Association of the public Scoping Meeting tonight in Saguache and tomorrow night in Alamosa regarding the proposed Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment for the San Luis Valley. Please add me to future electronic notifications regarding this project and other EAs or RMP Amendments in the San Luis Valley.

As Chairperson for the recently established Old Spanish Trail Association (OSTA) Stewardship Committee I would like to assure that OSTA assists you in collecting data regarding any impacts that Geothermal Leasing in the San Luis Valley Planning Area might have on the Old Spanish National Historic Trail, trail setting, trail corridor, trail landscape and related sites and trail segments. There are sections of the OSNHT in the San Luis Valley that because of the few modern intrusions of modern sights and sounds remain evocative of the period of trail use between 1829-1848. We encourage you to use every reasonable means to protect these relatively undisturbed "viewsheds" in any decisions to lease tracts of federal surface or subsurface for geothermal exploration or development or the indirect impacts that could occur from these actions.

As your analysis proceeds we would like to assist you in finding subject matter experts from the ranks of OSTA and elsewhere that would be available to help identify areas of specific concern and consult with you on proposed actions that might affect the trail in the spirit of the National Historic Preservation Act and the National Trail System Act. Unfortunately, I will be unable to attend the scoping meetings in person, but I am hoping to find a member of OSTA in your area that may be willing to serve on the OSTA Stewardship Committee designated to be the point of contact for this project as your analysis proceeds. In the meantime please contact me if I can assist in your collection of information regarding potential impacts of this project on the OSNHT. Thank you. - Mark

Mark Henderson
(575-758-3192 or cell 702-250-6512)
Chairman, Old Spanish Trail Association Stewardship Committee El Prado,
New Mexico

BUREAU OF LAND MANAGEMENT
GEOTHERMAL LEASING
SAN LUIS VALLEY PUBLIC LANDS CENTER



ALAMOSA, CO JULY 8, 2010

COMMENT CARD

Please check your affiliation below:

<input checked="" type="checkbox"/>	Individual (no affiliation)
<input type="checkbox"/>	Private Organization
<input type="checkbox"/>	Federal, State, or Local Government
<input type="checkbox"/>	Citizen's Group
<input type="checkbox"/>	Elected Representative
<input type="checkbox"/>	Regulatory Agency

Name: MICHAEL WISDOM
Organization (if applicable): _____
Street Address (optional): 2543 COUNTY ROAD 33
City/State/Zip (optional): DEL NORTE COLORADO 81132
Phone # (optional): 719 580 6099

If you wish to provide written comments, please write your comments below (use back if needed). Thank you.

Comments:

SHAW'S WARM SPRING
HAS BEEN MISLABELED AS
SHAW'S HOT SPRING

IT HAS BEEN LABELED AS "WARM"
SINCE 1850'S

IT FLOWS 38 GALLONS A MINUTE @ 87°
DOCUMENTED SINCE 1859.

TO LABEL IT "HOT" WHEN IT IS NOT
IS TO ATTRACT FALSE INTEREST IN
A PRIVATE RESOURCE

Thanks Joe

Please submit tonight or mail/fax by August 15, 2010 to:

Joe Vieira, San Luis Valley Public Lands Center,
1803 West Hwy 160, Monte Vista CO 81144

Fax: 1-719-852-6250 E-mail: slvplc_comments@blm.gov

John Brink <jbrink@onthebrinkproductions.com>
To slvplc_comments@blm.gov
Subject Geothermal leases and water table

07/10/2010 10:43 AM

Dear Government:

Regarding leasing geothermal natural resources, those of us on the western edge of the SLV request that our water wells be protected from degradation or lowering of the water table.

John Brink
jbrink@onthebrinkproductions.com
Colorado Springs and San Luis Valley, Colorado

P.O. Box 302
Antonito, CO 81120-0302
(719) 480-3723

Greetings:

I contact you in response to your request for input about plans to lease public lands for geothermal development.

As an amateur balneologist and one with a lifelong interest in geohydrology, I recommend that further studies be performed before leasing any public lands for the purpose of creating power generation infrastructure.

If one uses Nevada as a model, it is apparent that power generating facilities, even those that employ re-injection techniques, have had a tremendously adverse impact on the surface features (i.e.: hot springs, fumaroles) from which this nation's K.G.R.A.'s (Known Geothermal Resource Areas) were originally identified. In Nevada, power generating facilities have been responsible for the nearly-complete destruction of these surface features once found in that state's K.G.R.A.'s.

Wells drilled for the purpose of creating recreational facilities (i.e.: Splashland, the Sand Dunes Pool, the private indoor swimming pool at Shaw's Hot Springs) appear to me to have much less impact on nearby surface thermal features, possibly because the volume of water extracted is far less than that required for power generation, and I have no concerns about Federal lands leased for that purpose.

Thank you for your time.

Sincerely,
David J. Kezerle



ORIENT LAND TRUST

Valley View Hot Springs

PO Box 65, Villa Grove, CO 81155-0065

Tel: 719-256-4886

Email: suzanne@olt.org

Web: www.olt.org

A Colorado 501(c)(3) Corporation

August 13, 2010

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Amy Trainer
Land Conservation Specialist

Joseph Vieira, Project Manager
BLM Geothermal Leasing EA
San Luis Valley Public Lands Center
1803 West Hwy 160
Monte Vista, CO 81144

Dear Mr. Vieira,

Orient Land Trust (OLT), a 501(c)(3) land conservation organization dedicated to preserving the natural and biological resources, wildlife habitat, open space, agricultural lands, and historic and geologic features of the northern San Luis Valley, offers the following comments on the BLM's Geothermal Leasing Environmental Assessment (EA) and amendments to the San Luis Resource Area Resource Management Plan (Plan Amendments). OLT takes comments from the nation-wide programmatic environmental impact statement record of decision (ROD).

OLT owns approximately 1780 acres in fee mostly along County Road GG and much of which is surrounded by BLM land. Please see attached map. Of OLT's fee-owned lands, 1270 acres are protected in a conservation easement held by The Nature Conservancy; 350 acres are soon to be protected in a conservation easement held by the Colorado Division of Wildlife. OLT manages an additional 480 acres of State Land Board lands within its mission of conservation, preservation and protection. Provided and protected by these easements and other agreements is miles of wildlife corridor, open space and scenic view corridor. Additionally, OLT is actively conserving and creating habitat to preserve several listed and endangered species of plants and animals with Federal, State and local governmental oversight and assistance. OLT needs to be sure that the BLM lands adjacent to OLT's conservation easement lands are not available for geothermal energy development.

OLT seeks to further ensure that the Everson Ranch and VVHS Grazing Allotment are never impacted by geothermal energy development. OLT is a model landowner in the northern San Luis Valley (Valley). This spring OLT was awarded the "Conservationist of the Year Award" by the Center Conservation District for the restoration work it has initiated on the Everson Ranch. OLT's Everson Ranch has the rights to a 1/2 share of the Valley View Hot Springs (VVHS) BLM Grazing Allotment. The Everson Ranch is adjacent to BLM lands on its northwest and east

sides. In addition to the preservation of renovated natural habitats for listed and endangered species of fish and contiguous corridor for wildlife, OLT will house its Board of Directors Office at the Everson Ranch, as well as creating a headquarters for research, education and outreach. Expanding protection from geothermal energy development to the surrounding BLM lands is critical to OLT's mission.

OLT echoes the EPA concerns expressed in the ROD regarding the potential for contamination by after-use geothermal fluids from re-injection with surface or groundwater by connection through the underground fault system and hope this concern is adequately addressed in this EA. OLT's geothermal waters are warm, non-sulfurous hot springs waters, flowing out of the mountainside at 100 degrees Fahrenheit. These waters feed eight resort pools as well as provide drinking and living water to the resort and three local households. From the Valley View Hot Springs village, the waters continue downhill to provide water for local wildlife. With these waters, OLT also operates a hydroelectric generator, powering the village completely off grid, thus serving as a model landowner practicing energy sustainability. Exiting the hydroelectric power plant, this same water feeds into a recreated meandering spring which provides natural habitat for endangered and listed species of fish and feeds into a large recently created reservoir for the same purpose. From there, the water is used for irrigation of the Everson Ranch. Clearly, OLT needs to ensure that any future geothermal energy development injection wells do not negatively impact the temperature or quality of OLT's geothermal waters.

As you are no doubt aware, the BLM's Saguache Field Office has been an active participant and enthusiastic supporter of the Northern San Luis Valley Conservation Roundtable that OLT initiated in November, 2009. This May, the Roundtable participants agreed to work collaboratively to protect the San Luis Creek corridor which flows from Poncha Pass to the San Luis Lakes. OLT plans to continue working with the BLM and other land management agencies and professionals to protect the San Luis Creek watershed. Thus, OLT would like to ensure that that BLM lands adjacent to San Luis Creek are not available for future geothermal energy development.

OLT understands that the purpose of this EA is to determine which BLM lands in the Valley will remain open and which lands will become closed to potential geothermal leasing. We understand that geothermal energy development uses approximately 10% of the amount of land over a 30-year period when compared to solar and photovoltaic fields. Geothermal energy development also does not require a consumptive water use, an important factor in the Valley where available water rights are exceedingly limited.

OLT supports geothermal energy development in the Valley so long as adequate precautions are taken to prevent the loss of open space, prevent the loss of grazing lands, prevent destruction and negative impacts to wildlife habitat, and prevent obstruction to the view corridors that OLT has worked so hard to create and conserve. OLT sees geothermal energy as a viable alternative energy that can empower local communities to utilize alternative energy sources, and, as such, is a key component to cutting this nation's addiction to fossil fuels and slowing the potentially devastating impacts of global climate change. OLT supports geothermal development in the Valley due the multiple public benefits that such energy development could bring. We understand these benefits to include local employment,

development of a reliable, sustainable energy source and a relatively small plant footprint of approximately five acres.

Based on the ROD, OLT understands that the BLM has the discretion to impose stipulations, including “no surface occupancy” if public lands include water bodies, riparian areas, wetlands and endangered species habitat. The Endangered Species Act stipulation includes “other special status species” per the ROD. OLT strongly urges the BLM to include Colorado State Species of Concern, Threatened and Endangered Species as “other special status species” and to work with the Colorado Division of Wildlife to address wildlife habitat areas that would be sensitive to, and incompatible with, geothermal energy development.

Orient Land Trust respectfully makes the following requests with respect to the EA and Plan Amendment:

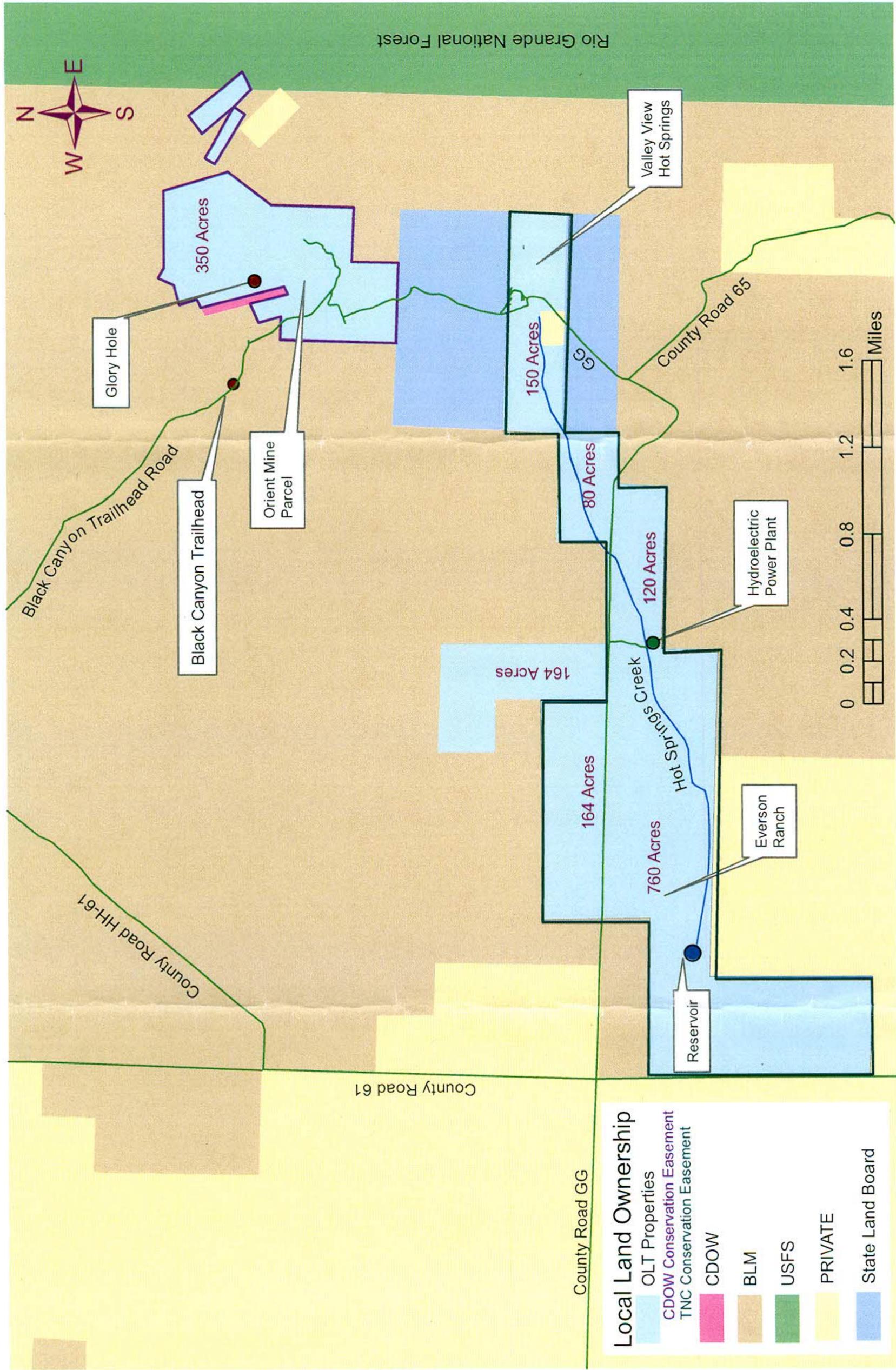
1. Removal from consideration for geothermal leasing the BLM lands adjacent to OLT property along CR GG: OLT requests that there be no impact to the view shed that OLT has worked so hard to protect.
2. Removal from consideration for geothermal leasing the BLM lands adjacent to OLT’s Orient Mine property: OLT requests that there be no impact to the Orient Mine, the summer roost to Colorado’s largest bat colony, including a population of nearly one quarter million Mexican free-tailed bats.
3. Removal from consideration for geothermal leasing the BLM lands near the fault lines in the foothills of the west facing slope of the Sangre de Cristo Mountains to ensure that the temperature and quality of the Valley View Hot Springs geothermal waters are not impacted.
4. Removal from consideration for geothermal leasing the BLM lands adjacent to San Luis Creek or, at a minimum, that appropriate stipulations are put in place to ensure this critical riparian corridor will receive the conservation protection it deserves in the future.
5. BLM keep all geothermal plant locations close to the highways, screen them with natural vegetation, and ensure that the plant would not harm wildlife.
6. Public notification of, and the opportunity to review, the draft EA and Plan Amendment with an opportunity to submit additional comments prior to the final documents being released in March 2011.
7. BLM create a mechanism for public notice and tracking of all geothermal development lease applications within the San Luis Resource Area similar to the NEPA tracking tool currently on the BLM’s San Luis Valley Public Lands Center’s website.

OLT’s core concerns with future geothermal energy development in the Valley include negative impacts to wildlife, loss of open space, maintaining the view corridors OLT and its members have worked so hard to preserve, protecting the Valley View Hot Springs geothermal waters, and ensuring that BLM lands remain available for cattle grazing.

We thank you very much for your consideration of our concerns and look forward to commenting on the draft EA and Plan Amendment when they are available.

Please do not hesitate to call me!

Orient Land Trust



Map by D. Fazekas
July 2010

Linea Sundstrom <linea.sundstrom@gmail.com>

To slvplc_comments@blm.gov

09/11/2010 01:27 PM

cc

Subject : San Luis Geothermal

On behalf of the American Rock Art Research Association, I would like to request that the forthcoming San Luis Valley Geothermal Leasing EA address specifically the impact of various management alternatives on rock art sites, including both known and unrecorded sites. Because these sites are especially fragile and difficult to protect, we would ask that you consult with a rock art site management specialist in preparing your plans. This area is known to contain many significant rock art sites, which will require special protection as plans for alternative energy projects go forward.

For more information about this organization please visit www.arara.org.

Thank you.

Linea Sundstrom, Chair

Conservation Committee

American Rock Art Research Association

linea.sundstrom@gmail.com

STATE OF COLORADO

Bill Ritter, Jr., Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE

AN EQUAL OPPORTUNITY EMPLOYER

Thomas E. Remington, Director
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wildlife.state.co.us



*For Wildlife-
For People*

October 12, 2010

Bureau of Land Management
San Luis Valley Public Lands Center
1803 West Highway 160
Monte Vista, Colorado 81144
www.blm.gov/co/st/en/fo/slvplc_comments@blm.gov

RE: Public Scoping for the Notice of Intent to Prepare an Environmental Assessment to Amend the Resource Management Plan for the San Luis Resource Area for Geothermal Leasing in the San Luis Valley (Federal Register / Vol. 75, No. 176 / Monday, September 13, 2010 / Notices)

To Whom It May Concern:

The Colorado Division of Wildlife (CDOW) has reviewed the scoping notice published by the Bureau of Land Management (BLM) in the Federal Register. CDOW appreciates the opportunity to provide BLM comments regarding wildlife issues that should be evaluated in the BLM's EA and RMP amendment for geothermal leasing in the San Luis Valley. We also appreciate your local energy team's effort to meet with our staff during the scoping period to review maps of the planning area and share our issues of concern.

We understand that the issuance of a geothermal lease does not authorize any specific development or land disturbance without further environmental review and approval by BLM, and that the BLM is currently seeking input on issues relevant to leasing alternatives, lease stipulations, and other conservation or protective measures that need to be addressed during the leasing process. Our comments will be limited to the wildlife resources that occur within the planning area that need to be evaluated in the EA, the potential impacts to those resources from geothermal development, and recommendations regarding leasing decisions and lease stipulations.

State Wildlife Areas Concerns

In order to further its mission to preserve, protect, and enhance wildlife and wildlife habitats for the people of Colorado, CDOW purchases and holds property interests in land specifically to provide wildlife habitat and wildlife-related recreation opportunities. CDOW manages the vast majority of the properties it owns as State Wildlife Areas.

Since CDOW is not a "multiple-use" agency, its sole purpose for acquiring property interests in land is to provide habitat for wildlife and wildlife-related recreation opportunities for the public. CDOW promulgates regulations for the management of the properties it owns and manages. Chapter 9 of CDOW's regulations addresses prohibited activities on SWAs:

“Chapter 9 –Division Properties

Article 1 - General Provisions

#900 – Regulations applicable to all Division Properties, except State Trust Lands

C. Prohibited Activities

. . . the following activities are prohibited on all lands, waters, the frozen surface of waters, rights-of-way, buildings, and other structures or devices owned, operated, or under the administrative control of the Division of Wildlife:

- 2. To enter, use or occupy any area for any commercial purpose or to conduct land, water, oil, gas or mineral investigations, surveys, or explorations of any kind. . . .”*

CDOW regulations prohibit commercial activities, including fluid mineral exploration and development, within SWAs because these types of developments conflict with the sole purpose for which these properties were acquired. Although leases on State Trust Lands are also acquired by CDOW specifically to provide wildlife habitat and wildlife-related recreation opportunities, CDOW’s prohibition on commercial activities at SWAs does not extend to leased State Trust Lands.

The BLM’s planning area for the EA and RMP amendment contains approximately 10,221 acres of State Wildlife Areas that contain Federal minerals subject to potential geothermal leasing and development (see Table 1 below).

TABLE 1 – STATE WILDLIFE AREAS WITH FEDERAL MINERALS WITHIN THE PLANNING AREA

CDOW Property	Acres w/Fed Minerals
Blanca SWA	40
Hot Creek SWA - Poso Tract	8178
La Jara SWA	1652
Russell Lakes SWA	321
Terrace Reservoir SWA	30

TOTAL 10,221

CDOW encourages the BLM to evaluate SWAs similar to how BLM might evaluate its own Special Recreation Management Areas established for specific purposes that are incompatible with mineral development. In this case, the surface use rights of these areas have been acquired by CDOW specifically for wildlife habitat and wildlife recreation purposes that are not compatible with commercial development of the mineral estate.

With this in mind, we request that BLM consider administratively withdrawing the minerals underlying SWAs within the planning area from leasing, so that they will not be considered for geothermal lease and development in the future. We will submit under separate cover an electronic shape file identifying the SWA boundaries within the planning area.

Fish Hatchery Concerns

CDOW realizes that the BLM extends protection from mineral lease and development to statutorily closed Federal land, including National Wildlife Refuges and Federal Fish Hatcheries; however, we are concerned that the BLM does not recognize and offer similar lease protections on and near State-owned properties and State facilities that utilize geothermal sources for the benefit of wildlife.

The John W. Mumma Native Aquatic Species Restoration Facility near Alamosa, Colorado, was acquired exclusively for recovery of Federal listed T/E species. Although this property is not associated with Federal minerals, CDOW recommends the expansion of protection measures that currently protect the integrity of geothermal resource features on National Park System lands to lease areas around natural geothermal sources that provide benefits to wildlife, including State fish production units.

Specific Wildlife Concerns

The BLM's planning area contains habitat for a variety of big game, small game, waterfowl, and other species of concern to CDOW. The following individual species and their habitats should be evaluated by BLM in the EA and RMP amendment for geothermal leasing:

Elk
Mule Deer
Pronghorn
Bighorn Sheep
Gunnison sage grouse
Gunnison's prairie dog
Canada lynx
Townsend's big-eared bat
Brazilian free-tailed bat
New Mexico jumping mouse
ferruginous hawk
western burrowing owl
peregrine falcon
bald eagle
golden eagle
prairie falcon
mountain plover
Southwestern willow flycatcher
Western yellow-billed cuckoo
Boreal toad
Northern leopard frog
milk snake

CDOW has records of occurrence and seasonal habitats mapped for many of these species. Under separate cover CDOW will provide shape files identifying the records of occurrence and seasonal habitats for these species in the planning area. In addition, CDOW has developed recommended lease stipulations and additional Best Management Practices (BMPs) for select habitats associated with these species to minimize the impacts from mineral development when leasing does occur (see Attached Lease Stipulation Recommendations and Wildlife BMPs). These recommended lease stipulations and BMPs were originally developed for oil and gas development, but they are also applicable to geothermal development.

Waterfowl

The San Luis Valley in Colorado is a significant national resource for waterfowl. The San Luis Valley contains the largest complex of wetlands for breeding waterfowl in Colorado, and these wetlands support large populations of both resident and migratory waterfowl. In spring, tens of thousands of northern pintails, sandhill cranes, Canada geese, and other species of migratory waterfowl can be seen throughout the valley refueling for their journey to northern breeding grounds. In spring and fall, 95% of the Rocky Mountain population of sandhill cranes migrates through the San Luis Valley. The San Luis Valley is home to the largest colony of nesting water birds in Colorado, and portions of the San Luis Valley have some of the highest duck nesting densities in the country.

Waterfowl in the San Luis Valley may be affected by any change in the surface water characteristics of wetlands in the San Luis Valley, including water temperature. For example, if cooling of surface water were to result from the removal of a geothermal resource, premature freezing of historically open wetlands could have a negative impact on water birds of all types. We request that BLM's EA and RMP amendment address potential impacts to wetland complexes and waterfowl from leasing and potential subsequent geothermal development of leased areas. Where appropriate, CDOW recommends that the EA and RMP amendment incorporate standards and guidelines that require preconstruction baseline surveys to document wetlands, water resources, and waterfowl use within leased areas, as well as post-construction monitoring to document, report, and mitigate specific impacts to these resources.

Conclusion

CDOW appreciates BLM's efforts to solicit public input on the EA and RMP amendment to consider leasing geothermal resources in the San Luis Valley. Further, the CDOW appreciates the BLM's consideration of CDOW comments as those coming from a collaborative, fellow natural resource agency. In that same light, please feel free to contact CDOW early in the process when requesting comments on projects of this magnitude. CDOW appreciates any opportunity that the BLM can provide to expand the comment timeline for CDOW during future comment opportunities.

As the BLM develops the EA to further evaluate leasing alternatives, we encourage you to consider the potential impacts to the SWAs and wildlife resources we have highlighted above. Since subsequent environmental impact studies for specific geothermal development projects would "tier" to the EA and RMP amendment, we encourage you to incorporate specific standards and guidelines to steer development in those areas in a manner that is protective of the wildlife resources that we have identified.

Thank you!



Tom Spezze
SW Regional Manager

Cc: Dan Dallas, Monte Vista BLM/FS Manager
R. Basagoitia, AWM, Monte Vista
J. Holst, SW Region Energy Liaison
Nancy Warren, Acting Assistant Director of Field Operations, DOW

October 13, 2010

Delivered via electronic mail (slyplc_comments@blm.gov) and U.S. mail.

Joe Vieira
San Luis Valley Public Lands Center
1803 West Hwy 160
Monte Vista, CO 81144

Re: Comments on Proposed Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment for the San Luis Resource Area

Dear Mr. Vieira:

Please accept and fully consider these scoping comments on proposed geothermal leasing Environmental Assessment and Resource Management Plan Amendment (Amendment) on behalf of The Wilderness Society, Center for Native Ecosystems, Arkansas Valley Audubon Society, Wild Connections, Colorado Environmental Coalition, Defenders of Wildlife, Quiet Use Coalition, and Rocky Mountain Recreation Initiative. We appreciate the opportunity to comment.

Clearly, our nation's growing addiction to fossil fuels, coupled with the unprecedented threats brought about by global warming, imperil the integrity of our wildlands as never before. To sustain both our wildlands and our human communities, the undersigned believe the nation must transition away from fossil fuels as quickly as possible. To do this, we must eliminate energy waste, moderate demand through energy efficiency, conservation, and demand-side management practices, and rapidly develop and deploy clean, renewable energy technologies, including at utility-scale. Renewable energy and associated transmission development is not appropriate everywhere, however, and thorough review under the National Environmental Policy Act (NEPA) is an essential part of determining which proposed utility-scale projects should be permitted to go forward.

We strongly believe that the long-term, environmentally responsible success of the Bureau of Land Management's (BLM) renewable energy program depends on the development of policies and guidelines that guide projects to the most appropriate locations, thus limiting environmental impacts and reducing obstacles to construction of the most appropriate projects. While the BLM's Programmatic Environmental Impact Statement (PEIS) for geothermal leasing and development did identify lands as open or closed for leasing, it did not prioritize development in least-conflict areas that are most appropriate for development. The San Luis Valley Public Lands Center can and should take this opportunity to refine the previous designations, which will ultimately decrease conflict and increase chances for success for future projects that are directed to the most appropriate locations.

Further, the BLM is adopting a prioritization approach with its PEIS for solar development by identifying Solar Energy Study Areas (SESAs) – areas with excellent solar resources, close to existing transmission and other infrastructure, and with limited conflicts with other resources, values and uses. We fully support this approach and are actively engaged with the BLM to refine the SESAs and ensure that development truly is directed to these areas. We have recommended to the BLM that they refine the PEIS for geothermal leasing to incorporate such a “guided development” approach. While it remains unclear whether the BLM will take such steps for the

PEIS, the development of this Amendment is the perfect opportunity for the BLM to do just that for the San Luis Valley. The excellent geothermal resources and many other resources, values and uses of the public lands in the area would all benefit from such an approach.

We are submitting these comments with the intent that in collaboration with the public and interested stakeholders, the BLM can guide responsible geothermal leasing and development to appropriate locations without unacceptable impacts to the wildlands, water and wildlife of our public lands.

This letter contains two main sections. The first section includes general recommendations, including but not limited to recommendations on issues for further analysis, areas to avoid and prioritize for leasing and development, best management practices to minimize impacts and maximize benefits from geothermal development, and appropriate level of NEPA analysis. The second section includes specific information on areas of low, medium and high potential conflict for geothermal leasing and development in the San Luis Valley. We have also included a map and GIS data to help the BLM guide its decision making about both areas that are open or closed to leasing, as well as areas to prioritize for development and protective stipulations needed in areas with sensitive resources.

I. General Recommendations, Including but not Limited to Issues for Further Analysis, Areas to Avoid and Prioritize for Geothermal Leasing and Development, Recommended Best Management Practices to Minimize Impacts, Appropriate Level of NEPA Analysis

As noted above, the BLM should ensure that geothermal leasing and development on public lands is prioritized in the most appropriate areas and that impacts from any development are minimized through the use of best management practices and mitigation measures.¹ Our detailed recommendations on these and other general issues are included as **Appendix 1**.

BLM should fully examine all potential impacts from the process involved in drilling geothermal wells. Construction of geothermal wells may involve hydraulic fracturing of underground formations, similar to the process used in oil and gas production. Hydraulic fracturing operations related to geothermal production are currently exempt from underground injection control regulations under the federal Safe Drinking Water Act. Strong protections must be in place to guard underground sources of drinking water from contamination during the fracturing process.

Drilling or associated activities at the site can threaten the environment and human health in other ways as well. For example, chemical additives may be stored on site and used in geothermal production. In addition, the drilling process generates considerable amounts of waste that can be toxic. While geothermal power is one of the few energy resources that can provide continuous clean

¹ We also note that the Resource Management Plan (RMP) for the San Luis Resource Area is in need of a full revision, having last been revised in 1991. This RMP is in fact listed as scheduled for revision beginning in 2009 on BLM's Resource Management Planning Schedule (*available at: http://www.blm.gov/pgdata/etc/medialib/blm/co/programs/land_use_planning.Par.98476.File.dat/NewPlanningPage.pdf*). Given that this RMP is scheduled for a full revision, and the development of geothermal resources may not have been specifically considered in the 1991 RMP, it is especially important that BLM ensure that impacts to all resources from potential leasing and development be analyzed in this Amendment and/or a full RMP revision be conducted prior to leasing and development.

energy with a very small land-surface footprint and almost zero carbon emissions, the BLM must fully assess all environmental impacts to ensure that any geothermal development is conducted in the safest way possible and that all potential negative impacts are considered and mitigated.

II. Specific Recommendations on Areas to Prioritize and Avoid for Leasing and Development and Designation of Geothermal Leasing and Development Zones

Center for Native Ecosystems (CNE) has performed a GIS analysis of the lands in the San Luis Valley to identify areas that may be more appropriate for geothermal leasing and development as well as potential conflicts with sensitive resources. CNE has developed a three-level ranking system of “low sensitivity”, “sensitive”, and “extremely sensitive” for their database of natural resources (including wildlife habitat, wilderness quality lands, wetlands and many others). CNE’s ranking system is based on the expert opinions of their biologists and has benefited from input from numerous other conservation organizations as well.

We recommend that the BLM prioritize leasing and development in areas characterized as low-sensitivity. Areas with sensitive resources may be appropriate for leasing and development, but would require additional protective measures to avoid and mitigate impacts. Areas with extremely sensitive resources should be avoided or excluded from leasing and development because of likely unacceptable impacts, high levels of controversy and extensive mitigation requirements.

CNE’s analysis and these recommendations are intended to inform the BLM’s decisions as part of this Amendment. We recommend that the BLM designate areas that are appropriate for leasing and development as “geothermal leasing and development zones”. These zones should specifically exclude extremely sensitive resources. Within the zones, the BLM should also prioritize areas with high geothermal resource potential and low-sensitivity, as well as identifying areas that contain sensitive resources that would likely require additional protections if leasing and development occurs (and the appropriate stipulations and best management practices necessary to protect those resources).

CNE’s analysis and these recommendations have been made using the best data that is currently available. However, site specific analysis will be necessary for all proposed leasing and development, and it is possible that areas identified as low-sensitivity may in fact include resources that will make leasing and development difficult, costly or inappropriate because of the level of impacts. It is also possible, depending on the size and scope of proposed leasing and development, that site-specific analysis could reveal that areas identified as sensitive may have few sensitive resources and leasing and development could occur with few additional protections.

Our recommendation is that the BLM use CNE’s analysis and these recommendations to help guide its decision making, with the goal of prioritizing leasing and development in areas likely to have the least impacts and conflicts, and thus the best chance of successful, environmentally responsible development. The BLM should also use CNE’s analysis and these recommendations to avoid areas that are likely to have high levels of impacts and conflicts. Such an approach will allow the BLM to guide leasing and development to the most appropriate areas, rather than risking unacceptable impacts and costly and time-consuming conflicts that would be caused by leasing and development in inappropriate areas.

The results of CNE's analysis, including maps, tables and GIS data, are included in **Appendix 2**.² Some data could not be shared because of confidentiality agreements, but the presence is noted in the table in Appendix 2 and the BLM should be able to acquire these data by requesting them from the agencies that produced them.

For off-site mitigation, we also direct BLM's attention to IM 2008-204, which describes the broad type of actions that may be taken to address both direct impacts of a project and greater cumulative effects that development is having on a landscape. IM 2008-204 identifies and elaborates on the types of off-site mitigation that can be used, stating:

- Offsite mitigation may include, as appropriate:
 - **In-kind**: Replacement or substitution of resources that are of the same type and kind as those being impacted.
 - Example: For every acre of new, long-term surface disturbance in important sage-grouse nesting/early brood-rearing habitat in Area (A), (X) acres of unsuitable habitat in Area (B) is reclaimed, treated, or planted to create new or suitable nesting/early brood-rearing sage-grouse habitat.
 - **Out-of-kind**: Replacement or substitute resources that, while related, are of equal or greater overall value to public lands.
 - Example: For every acre of new, long-term surface disturbance in important sage-grouse nesting/early brood-rearing habitat in Area (A), the project proponent agrees to bury (Y) miles of existing power lines and remove the power poles used as hunting perches by raptors in Area (B).
 - **In-lieu-fee**: Payment of funds to the BLM or a natural resource management agency, foundation, or other appropriate organization for performance of mitigation that addresses impacts of a project.
 - Example: The applicant may make payment to the BLM or a conservation group based on the amount of acres that will be disturbed in exchange for commitment from the recipient to apply the funds toward local sage-grouse core habitat protection/restoration projects.

In the context of geothermal development, there may be additional conservation priorities that can be pursued to mitigate the impacts of individual projects and BLM could hold discussions with interested stakeholders to identify these potential targets for off-site mitigation efforts or funding.

Overall Recommendations: The BLM should identify zones for geothermal leasing and development that prioritize high geothermal potential, contain degraded lands and are in close proximity to existing or new transmission lines, while excluding sensitive conservation lands, such as citizen-proposed wilderness areas and Areas of Critical Environmental Concern. The Amendment should also specifically preclude development outside the designated zones. Within the zones, the Amendment should also set out prioritization criteria, which direct leasing and development to degraded lands and identify other areas that should be lower priority because development is more likely to lead to conflict, as well as setting out protective stipulations to safeguard sensitive resources. For off-site mitigation, BLM should provide for addressing a wide range of options to address the cumulative, far-reaching impact of renewable energy development

² In this GIS data, low-sensitivity areas are categorized as "Rank 3", sensitive resources are categorized as "Rank 2" and extremely sensitive resources are categorized as "Rank 1".

(as set out in IM 2008-204) and should design a process to reach out to stakeholders and develop a set of conservation priorities to target in connection with off-site mitigation.

Thank you for your thorough consideration of these comments. Please let us know if you have any questions or would like additional information.

Sincerely,

Alex Daue, Renewable Energy Coordinator
The Wilderness Society
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Denver, CO 80202

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Defenders of Wildlife
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Denver, CO 80202

Tom Sobal, Director
Quiet Use Coalition
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Salida, CO 81201

Roz McClellan
Rocky Mountain Recreation Initiative
1567 Twin Sisters Rd.
Nederland, CO 80466

List of Attachments

1. Appendix 1
 - a. General Recommendations
2. Appendix 2
 - a. CD – Center for Native Ecosystems GIS analysis of San Luis Valley Geothermal Leasing EA, including spreadsheet with results of resource screens
 - b. Map – Center for Native Ecosystems Sensitive Species & Special Places Screen on BLM Lands for the San Luis Valley Geothermal EA Analysis
3. Attachment A: Socioeconomic Framework for Public Land Management Planning: Indicators for the West's Economy (2006)
4. Attachment B: Thomson, J. L., Schaub, T. S., Culver, N. W. Aengst, P.C. 2005. Wildlife at a Crossroads: Energy Development in Western Wyoming. The Wilderness Society: Washington, DC. 40 p.
5. Attachment C: Weller, C., Thomson, J., Morton, P., Aplet, G. 2002. Fragmenting Our Lands: The Ecological Footprint from Oil and Gas Development. The Wilderness Society: Washington, DC. 24 p.

October 13, 2010



Mr. Joseph Vieira
Geothermal Comments Coordinator
San Luis Valley BLM Public Lands Center
1803 West Hwy 160
Monte Vista, CO 81101

RE: San Luis Valley BLM Geothermal Environmental Assessment (EA) Scoping Comments to consider which lands, and under what conditions, to make available for geothermal leasing.

Dear Mr. Vieira;

Thanks for your patience and time regarding review of these geothermal lease scoping comments. Preparation for these comments has provided the opportunity for us to review the Record of Decision and Resource Management Plan Amendments for Geothermal Leasing in the Western United States (December 2008) and the BLM San Luis Valley Resource Area Management Plan (1991).

A few key issues immediately stand out in the Management Plan.

Locatable Minerals & Fluid Minerals Management

Approximately 601,000 acres (97%) of the planning area are open to mineral entry and development. This leaves approximately 17,000 acres (3%) of the planning area withdrawn from mineral entry and development. In terms of fluid minerals management, approximately 259,000 acres (41 %) of the planning area is open to leasing.

Our first recommendation is to update the Resource Area Management Plan (RAMP) and conduct another NEPA analysis through your office regarding locatable and fluid minerals management to bring the SLV BLM office into compliance regarding the present market conditions of minerals development. This RAMP is 20 years old and so much has changed regarding minerals extraction in the Rocky Mountains.

To give an example of conflicting designations that might occur, there are approx. 142,000 acres identified in the RAMP for Special Management Areas or Areas of Critical and Environmental Concern (ACEC's). They are: Sand Castle, San Luis Hills Area, Blanca, Trickle Mtn, Rio Grande River Corridor, Elephant Rocks Area, Combres and Toltec Scenic Railroad, Los Magotes Area and Ra Jadero Canyon. These ACEC's are not protected by "No Surface Occupancy"(NSO) stipulations. Only 3% (17,000 acres) of the planning area open to leasing contain NSO stipulations. This analysis of the RAMP must be reopened to another NEPA process and revised for the sake of these "Special Use Areas".

Another potential NSO conflict which needs to be redefined is the split estate issue. SLVEC has been working closely with BLM oil and gas mineral leases on privately held land in sensitive wildlife migration areas, San Francisco Creek for example, which need to be addressed with future RAMP planning as well.

BLM Multiple Use Criteria-Amend Land Use Plan

It is our understanding that geothermal development will generally require the BLM to amend the land use plan, which is governed by "Multiple Use" policies to make an "exclusive use" determination of these proposed geothermal areas. We are concerned about the precedence this will set on other BLM lands located in the general vicinity and strongly encourage the agency to consider a no action alternative, and leave the option open for siting on degraded private lands instead. In any case, local field offices should have the final say regarding the siting of these proposed geothermal facilities and the determination decision of what the land base and water supply is purported to support.

Areas for Exclusion Consideration: National Historic and National Scenic Areas Special Management Areas-Sangre de Cristo National Heritage Area

The Notice of Availability identified a number of different types of special management areas where geothermal development is not appropriate. Areas in the National Landscape Conservation System including National Heritage Areas are governed by other laws requiring protection as a priority to protect objects of historic or scientific interest, and must be managed to protect those values as a priority over other uses. NHA Legislation was passed in March of 2009 containing the counties of Conejos, Costilla and Alamosa counties. These areas also include the scenic by-way.

The mission of the *Sangre de Cristo National Heritage Area (NHA)* is to promote, preserve, protect and interpret the profound historical, religious, environmental, geographic, geologic, cultural and linguistic resources. These efforts will contribute to the overall national story, engender a spirit of pride and self-reliance, and create a legacy in the Colorado counties of Alamosa, Conejos, and Costilla.

The geologic resources found in the NHA are directly associated with human habitation.

The layered water systems first brought in game that attracted many Native tribes to the area, going back 12,000 years. Hispanic settlers from the south were enticed by the water to raise crops and sheep. As BLM knows, this area boasts the oldest town in Colorado (San Luis), the oldest parish in Colorado (Our Lady of Guadalupe), and the oldest water rights in Colorado. Anglo ranchers and farmers raised cattle and wheat, and present-day crops of alfalfa, potatoes, and lettuce. **The geographic isolation of the area has essentially preserved cultural identity of these groups.**

Historically, the SLV area was a crossroads of culture. Mt. Blanca, southeast of the Great Sand Dunes, marks the eastern boundary of the Navajo. Mt. Blanca is considered one of four mountain peaks in the four corner area to be sacred among various tribes who inhabited and traded in this area. All these issues need to be considered if siting is to take place on public lands.

SLVEC has reviewed many documents over the past few weeks to prepare for these comments. It is our intention to highlight what we believe are the most poignant aspects to geothermal leasing and summarize them here. We wish to deliver a succinct overview that can contribute to your decision making process. Different authors have contributed to this compilation. They are listed with the summary.

Surface and Groundwater Resources and Geothermal Integrity

Water is the most significant aspect to geothermal and will receive the largest impact regarding SLV resources. BLM will be able to proceed only if the processes summarized below by Matt Reed, Megan Mueller and MIT are institutionalized.

GIS

It is essential to compile all data layers, but especially water supply and water quality data in GIS geo-space shape files. The Rio Grande Decision Support System (RGDSS) <http://cdss.state.co.us/DNN/default.aspx> may prove to be very helpful. We are also officially submitting our SLV Sensitive Resources map with these comments to support the building of this BLM database. The easiest way to access this map is to download it from our website: www.slvec.org, go to Projects- Renewable Energy and there are two maps displayed which can be easily downloaded depending on which version (size) of the map is more suitable for these comments.

The SLV Sensitive Resource map was created because of all the energy issues that are impacting the San Luis Valley at the present time. SLVEC realized we had to look at the SLV as a whole, on a landscape level, in order to understand how the dynamics of decision making around energy development would impact this entire region. We encourage BLM to look at these various land use aspects as well.

BLM is mandated, through the NEPA process to develop and consider a range of “reasonable alternatives.” It is imperative that the BLM review the SLV Sensitive Resources map and consider what is happening around the entire valley in terms of where the transmission lines are coming in, where the sub-stations are and where renewables are most likely to develop. BLM needs to maintain a larger scope than just the RAMP. Please do not make the excuse that BLM has “no jurisdiction”, to review these other areas, the Council on Environmental Quality makes it perfectly clear.

(Summarized by Matt Reed, Public Lands Director, High Country Citizens’ Alliance)

Geothermal development has the potential to impact water quantity, quality, temperature, and wetlands and riparian areas. The EA needs to evaluate the direct, indirect, connected and cumulative impacts of geothermal leasing and development on surface and subsurface water resources and geothermal resources. It should include a comprehensive review of the water requirements associated with all phases of geothermal exploration and development. Ground disturbance from geothermal development also has the potential to cause topographic changes in and around the lease area, which could alter surface and groundwater flow patterns, groundwater infiltration and surface runoff. These changes could adversely impact downstream water rights and water users and needs to be addressed in the EA. The acquisition of subsurface water rights from existing users might lead to impacts on the hydrological system, as well as the socioeconomic and cultural values of this unique area. Because geothermal production is relatively new to Colorado, the EA must anticipate and analyze all potential impacts to water resources.

Construction and maintenance of a geothermal plant could cause significant impacts to fragile streambeds. Roads and vehicles can cause erosion and sedimentation of streams. We recommend that all geothermal and spring locations in the area be identified and the possible effects on these fresh water sources be analyzed. Mitigation measures in these locations as well as pre- and post-construction monitoring are also recommended. The EA needs to identify all uses of ground and surface waters within the potentially affected area, and analyze the potential effects to water resources and water uses from possible project activities. The EA should also ascertain site-specific BMPs that would be employed to control runoff and sedimentation caused by construction and/or operations of a geothermal plant.

As a baseline decision, the BLM must determine that geothermal operations would not result in a significant adverse effect to the geothermal resources in the area. If they would, then the lease cannot be issued. Private interests, the public and wildlife are dependent on the continued integrity of these geothermal resources.

**Gunnison Sage-Grouse: Threats (Center for Native Ecosystems-Megan Mueller)
Impacts of Energy Development on Gunnison Sage-Grouse (Comparing oil and gas with geothermal)**

In determining whether to lease occupied habitat for geothermal development, and in deciding what protective measures should be applied if the parcels are leased, it is essential that BLM consider the significant body of new peer-reviewed research on the impacts of energy development on greater sage-grouse that has been published since the publication of the Gunnison Sage-Grouse Rangewide Conservation Plan in 2005. It is our understanding that the BLM will use the the Gunnison Sage-Grouse Rangewide Conservation Plan (GUSGRCP 2005) as its guiding document in the leasing process. The goal of the rangewide plan is to maintain, and increase where possible, the current abundance and viability of Gunnison sage-grouse populations and habitats. The BLM should ensure that their management of Gunnison sage-grouse is consistent with this goal. It is also appropriate for the BLM to consider the information available in this plan and in the conservation plans prepared by local working groups. However, the significant body of new research on the impacts of energy development on sage-grouse, suggests that the recommendations outlined in the rangewide conservation plan may not be adequate to conserve Gunnison sage-grouse in the face of energy development, and BLM must take this new information into account.

As a consequence of the small size of Gunnison sage-grouse populations, there is very little research on the impacts of energy development on this species. Thus, the rangewide conservation plan relies heavily on research on greater sage-grouse in developing recommendations regarding how the impacts of energy development on Gunnison sage-grouse should be avoided, minimized and mitigated. These recommendations need to be updated to take into account a significant body of new research on the impacts of oil and gas development on greater sage-grouse that is likely applicable to the closely related Gunnison sage-grouse.

The emerging scientific consensus on the impacts of oil and gas development on greater sage-grouse suggests that:

- Once the number of energy development structures on the landscape exceeds a threshold of 1 structure per 640 acres, the landscape becomes unsuitable for sage-grouse, resulting in lek loss and population declines.
- Similarly, research suggest that sage-grouse require unfragmented landscapes and that there may be a threshold of cumulative surface disturbance beyond which the landscape becomes unsuitable for sage-grouse, resulting in lek loss and population declines (see citations listed above). Wildlife biologists and managers have recommended that it may be necessary to set a threshold of surface disturbance at as low as 1% and at a minimum below 5% (e.g. see recent WY BLM IM regarding management of sage-grouse core areas and Colorado Division of Wildlife comments on the Little Snake Resource Management Plan), though it is unclear exactly what amount of cumulative surface disturbance sage-grouse can tolerate.
- The protective measures typically used by public land management agencies (no surface occupancy buffers around leks and seasonal timing limitations on disturbance in certain seasonal habitats) are not sufficient to prevent loss of leks and population declines. (see citations listed above)

- Siting energy development facilities within 3.9 miles of a lek has been shown to result in measureable impacts on sage-grouse leks and breeding habitat. (see citations listed above)
- Even if adequate restrictions on density of structures, cumulative surface disturbance and adequate no surface occupancy buffers are in place, it is necessary to prevent disturbance due to human activity in each seasonal habitat during the time of use.
- Lek abandonment (and presumably population declines), increase with increases in the cumulative measure of human influence on the landscape (<http://sagemap.wr.usgs.gov/monograph.aspx>, Chapter 14). Multiple human features on the landscape may act in synergy to cause impacts that exceed a threshold, resulting in population loss (<http://sagemap.wr.usgs.gov/monograph.aspx>, Chapter 14). Public land management agencies do not adequately address cumulative impacts at the appropriate scale, and thus have regularly failed to anticipate population declines in response to the cumulative impacts of energy development and other threats (<http://sagemap.wr.usgs.gov/monograph.aspx>).

The impacts of geothermal development are likely to be similar to the impacts of oil and gas development. Both types of development involve the construction of facilities and road networks that result in habitat loss and fragmentation; as well as increased traffic, noise and human disturbance; increased potential for the spread of noxious weeds and west Nile virus; construction of structures that are avoided by sage-grouse and increase the potential for predation, etc. Thus, it is appropriate to look to recent peer reviewed research on the impacts of energy development on greater sage-grouse in determining the likely impacts of geothermal development on Gunnison sage-grouse. In addition, greater and Gunnison sage-grouse are closely related, and are likely to have similar responses to the various impacts associated with energy development. Anecdotal evidence suggests that Gunnison sage-grouse may be even more sensitive to disturbance than greater sage-grouse.

Though it is appropriate to look to recent peer reviewed research on the impacts of energy development on greater sage-grouse in gaining a general understanding of the impacts of geothermal development and the measures that will be necessary to protect Gunnison sage-grouse from unacceptable impacts associated with geothermal development, it may be necessary to afford Gunnison sage-grouse habitat an even greater level of protection from the impacts of geothermal development than that recommended for greater sage-grouse in the context of oil and gas development.

The greater sage-grouse has undergone significant declines across its range and is now a candidate for listing under the Endangered Species Act. The Gunnison sage-grouse is at an even higher risk of extinction in the foreseeable future than the greater sage-grouse. In 2007, 88,816 male greater sage grouse were counted on leks across the species' range (<http://sagemap.wr.usgs.gov/monograph.aspx>, Chapter 16). In contrast, only 1,117 male Gunnison sage-grouse were counted on leks across the much smaller range of the Gunnison sage-grouse in the same year (<http://www.western.edu/faculty/jyoung/gunnison-sage-grouse>).

Thus, the BLM should be applying much more stringent restrictions on energy development in Gunnison sage-grouse habitat than those recommended for greater sage-grouse.

In addition, geothermal energy development may pose a greater threat to Gunnison sage-grouse populations than oil and gas development due to the fact that the life of a geothermal facility is typically much longer than the life of an oil and gas well. Habitat loss and fragmentation, and human disturbance associated with geothermal development will be more permanent than that associated with oil and gas development. The rangewide conservation plan does not include guidelines specific to geothermal development. The guidelines to avoid, minimize and mitigate the impacts of oil and gas development make not be sufficient when applied in the context of geothermal energy development given its more permanent nature. In a number of instances in the Gunnison Basin, permanent developments have likely resulted in permanent loss of leks and population declines, including the construction of the Gunnison landfill, the construction of the Last Chance Gulch UMTRA site, and the construction of Cuercanti Reservoir. Rather than being displaced to other leks, birds often continue to use these areas even when the original lek habitat is completely gone, with serious consequences for survival and reproduction. For example, male greater sage-grouse went to the lek that had been covered by Cuercanti Reservoir for years and performed their courtship dances on the ice covering the reservoir, even though females did not return to the lek. They were extremely vulnerable to avian predators, and obviously did not successfully breed. Breeding success among females who had traditionally bred at this lek was also likely lower. This makes it particularly important to consider research suggesting that construction of an oil and gas well within 3.9 miles of a lek results in measurable impacts to the lek. Geothermal development within this distance of a lek could result in permanent loss of the lek and the associated breeding habitat and thus a permanent decline in the population in this area, and in the overall carrying capacity of habitat in the Gunnison Basin. The BLM and FS need to carefully consider whether it is appropriate to site a permanent geothermal facility within 3.9 miles of a lek.

The BLM should carefully consider the best available science, including recently published research on greater sage-grouse, in determining whether or not to lease the area in question for geothermal energy development, and what protective measures to apply if the area is leased for geothermal development.

Given all of the above information, we feel that BLM should set aside all occupied Gunnison sage-grouse habitat as a reserve where management is focused on maintaining and increasing the size of Gunnison sage-grouse populations, and where energy development and other human activities that might negatively impact Gunnison sage-grouse are prohibited. The BLM should not consider leasing occupied habitat for geothermal energy development.

This next comment portion is not meant to be a painful engineering exercise but more precisely, SLVEC wanted to share with BLM this available document which helped us understand what the geothermal process looks like in production. This is not intended for BLM to get caught up in the

detail, but rather, to picture the current available options for geothermal, which will most likely be deep wells. In our opinion, the SLV, because of the comparatively lower temperatures (please see Jim McCalpin memo), if geothermal is developed, is likely to be of the “Enhanced Geothermal” nature.

The Future of Geothermal Energy (Chapter numbers have been maintained)

Impact of Enhanced Geothermal (EGS) on the United States in the 21st Century

An assessment by an MIT (Massachusetts Institute of Technology) -led interdisciplinary panel
If BLM would like this entire document, we would be glad to forward it to the office.

Excerpts

Today, with nearly 10,000 MWe of electricity generated by geothermal worldwide, there are several energy conversion technologies commercially available at various stages of maturity. These include direct steam expansion, single- and multistage steam flashing, organic binary Rankine cycles, and two-phase flow expanders. Direct-use and heat pump applications are also having an increasing impact, with a combined, estimated market penetration of about 100,000 MWt worldwide.

There are inherent limitations on converting geothermal energy to electricity, because of the lower temperature of geothermal fluids in comparison to much higher combustion temperatures for fossil fuels. Lower energy source temperatures result in lower maximum work-producing potential in terms of the fluid’s availability or exergy; and in lower heat-to-power efficiencies as a consequence of the Second Law of thermodynamics. The value of the availability determines the maximum amount of electrical power that could be produced for a given flow rate of produced geofluid, given a specified temperature and density or pressure.

The availability of the geofluid (taken as pure water) varies as a function of temperature and pressure. Increasing pressure and increasing temperature have a nonlinear effect on the maximum work-producing potential. For example, an aqueous geofluid at supercritical conditions with a temperature of 400°C and pressure of 250 bar has more than five times the power-producing potential than a hydrothermal liquid water geofluid at 225°C. Ultimately, this performance enhancement provides an incentive for developing supercritical EGS reservoirs.

The large capital investment that is contained in the well-field/reservoir portion of the system places a premium on achieving as high an efficiency as possible for a given geothermal resource, so it is worth putting considerable effort into mitigating these thermodynamic limitations. A utilization efficiency, defined as the ratio of actual net power to maximum possible power, provides a measure of how close the conversion system comes to ideal, reversible operation. Current practice for geothermal conversion systems shows utilization efficiencies typically range from 25% to 50%.

Future engineering practice would like to increase these to 60% or more, which requires further investments in R&D to improve heat-transfer steps by minimizing temperature differences and increasing heat-transfer coefficients, and by improving mechanical efficiencies of converters such as turbines, turbo-expanders, and pumps.

Keeping these issues in mind, the panel considered specific cases for a range of EGS resource types and applications:

1. Electricity generation using EGS geofluids from sedimentary and basement rock formations and similar reservoirs, ranging in temperature from 100°C to 400°C, including one case at supercritical conditions;
2. Electricity generation from coproduced oil and gas operations using organic binary power plant designs over resource temperatures ranging from 100°C to 180°C;
3. Combined heat and power – cogeneration of electricity and thermal energy where the conditions at the MIT COGEN plant (nominally 20 MWe and 140,000 lb/h steam) were used as a model system.

Each case in (1)-(3) involved the following steps, using standard methods of engineering design and analysis:

- a) identification of the most appropriate conversion system;
- b) calculation of the net power per unit mass flow of geofluid;
- c) calculation of mass flow required for 1, 10, and 50 MW plants;
- d) estimation of capital and installed plant costs

Our analysis of surface-conversion systems shows the following:

- Practical, commercial-scale energy conversion systems exist for all EGS geofluid types from low-temperature liquid water at 100°C to supercritical water at 400°C.
- 6,000 to 11,000 MWe of generating capacity exists in coproduced hot waters associated with land-based domestic oil and gas production operations.
- Installed capital costs for surface conversion plants ranged from \$2,300/kWe for 100°C resource temperatures to \$1,500/kWe for 400°C resource temperature.

General EGS system properties were treated in one part of the analysis to provide design equations and costs, while several near-term targets of opportunity were also evaluated in somewhat more detail.

When examining the full life cycle of geothermal energy developments, their overall environmental impacts are markedly lower than conventional fossil-fired and nuclear power plants. In addition, they may have lower impacts in comparison to other renewables such as solar, biomass, and wind on an equivalent energy-output basis. This is primarily because a geothermal energy source is contained underground, and the surface energy conversion equipment is relatively compact, making the overall footprint of the entire system small.

EGS geothermal power plants operating with closed-loop circulation also provide environmental benefits by having minimal greenhouse gas and other emissions. Being an indigenous resource, geothermal – like other renewable resources – can reduce our dependence on imported fossil fuels. As it provides dispatchable base-load capacity, geothermal –even at high levels of penetration – would have no storage or backup-power requirements.

With geothermal energy, there is no need to physically mine materials from a subsurface resource, or to modify the earth's surface to a significant degree as, for example, in strip mining of coal or uranium. Unlike fossil and biomass fuels, geothermal energy is not processed and

transported over great distances (an energy-consuming and potentially environmentally damaging process), there are minimal discharges of nitrogen or sulfur oxides or particulate matter resulting from its use, and there is no need to dispose of radioactive materials.

However, there still are impacts that must be considered and managed if this energy resource is to be developed as part of a more environmentally sound, sustainable energy portfolio for the future.

The major environmental issues for EGS are associated with ground-water use and contamination, with related concerns about induced seismicity or subsidence as a result of water injection and production. Issues of noise, safety, visual impacts, and land use associated with drilling and production operations are also important but fully manageable.

As geothermal technology moves away from hydrothermal and more toward larger EGS developments, it is likely that environmental impacts and risks will be further reduced relative to those associated with hydrothermal systems. For example, EGS plants should only rarely have a need for abatement of hydrogen sulfide (H₂S), ammonia (NH₃), and other chemical emissions.

(Their analysis of) Southern Rocky Mountains

25% of the 100 km x 300 km area is at temperatures > 200°C.

Geology is variable. Area includes the northern Rio Grande Rift and the Valles Caldera. Can have sediments over basement, generally thermal conditions in basement are unknown. Both high crustal radioactivity and high mantle heat flow contribute to surface heat flow. Probably highest basement EGS potential on a large scale.

Chapter 5.1 EGS vs. Hydrothermal reservoirs

Geothermal electric power and heat production from hydrothermal resources has been commercialized since 1904, leading to a large body of experience on what constitutes a good hotwater resource. In terms of thermal energy, a kilogram of hot water at temperatures of 150°C to 300°C has a low energy content compared to a kilogram of hydrocarbon liquid. This occurs because only the sensible and latent enthalpy of the geofluid can be used, rather than the stored chemical energy released during combustion of a hydrocarbon fuel. Therefore, for a producing geothermal well to be comparable in energy content to an oil well, high mass flow rates of hot water are needed.

Typically, 50 to 150 kg/s or more per production well, depending on its temperature, are required to make a geothermal project economical. Resource temperature and flow per well are the primary factors in defining the economics of a geothermal resource. The increasing cost of drilling deeper wells trades off against the increased thermodynamic efficiency of higher temperature.

Eventually, an Enhanced Geothermal System (EGS) will reach an optimum depth after which drilling deeper wells will not be more economical. However, studies by Tester and Herzog (1991) have shown that the optimal depth for minimum costs is on a fairly flat cost-versus-depth surface for most geothermal gradients. The insensitivity of project cost to depth, in the neighborhood of the optimal point, permits a range of economically acceptable depths.

Hydrothermal projects are based on resources with naturally high well productivity and high temperatures. They rely on having high flow per well to compensate for the capital cost of drilling and completing the system at depth, and they need very high permeability to meet required production and injection flow rates. Typically, in a successful hydrothermal reservoir, wells produce 5 MW or more of net electric power through a combination of temperature and flow rate.

For instance, a well in a shallow hydrothermal reservoir producing water at 150°C would need to flow at about 125 kg/s (2,000 gpm) to generate about 4.7 MW of net electric power to the grid. Thus, as a starting target for EGS, we assume that the fluid temperature and production flow-rate ranges will need to emulate those in existing hydrothermal systems.

5.6 Water Availability

Creation and operation of an EGS require that water be available at the site for a reasonable cost. In the absence of a nearby river, major lake, or the sea as a cooling source, the most efficient powergeneration systems require evaporative cooling, which means that an average of about 15% of the water requirements for the cooling system are lost to evaporation and need to be replaced. During creation of an extensive and connected fractured system, large quantities of water are needed for stimulation and growth of the reservoir. While most systems probably can be maintained without adding much water through management of pressure in the reservoir, some water will need to be replaced in the reservoir. The size of the reservoir may need to be expanded periodically to maintain the heat-exchange area, requiring the addition of more water. A site with water available in large quantities, in close proximity, will improve project economics.

5.7 Susceptibility to Induced Seismicity

One of the other aspects of project economics and of project feasibility is the potential of the site for induced acoustic emissions (Batchelor et al., 1983). At the best potential EGS sites, rocks are critically stressed for shear failure, so there is always the potential for induced seismicity that may be sufficiently intense to be felt on the surface.

With current technology, it appears feasible that the number and magnitude of these induced events can be managed. In fact, based on substantial evidence collected so far, the probability of a damaging seismic event is low, and the issue – though real – is often one more of public perception. Nonetheless, there is some risk that, particularly in seismically quiet areas, operation of an EGS reservoir under pressure for sustained periods may trigger a felt earthquake. As a result, the potential for seismicity becomes an environmental factor for determining the economics of EGS project development.

5.9 Approach for targeting EGS Reservoirs

Structural information. Because EGS reservoir depths are likely to exceed 3,000 m (10,000 ft), structural information on the target formations is likely to be limited. Geophysical techniques should be considered with a view to identifying fault zones, major fractures, and possible convection cells.

6.2 Current EGS Drilling Technology

High-temperature instrumentation and seals. Geothermal wells expose drilling fluid and downhole equipment to higher temperatures than are common in oil and gas drilling. However, as hydrocarbon reserves are depleted, the oil and gas industry is continually being forced to drill to greater depths, exposing equipment to temperatures comparable with those in geothermal wells.

High-temperature problems are most frequently associated with the instrumentation used to measure and control the drilling direction and with logging equipment. Until recently, electronics have had temperature limitations of about 150°C (300°F). Heat-shielded instruments, which have been in use successfully for a number of years, are used to protect downhole instrumentation for a period of time.

However, even when heat shields are used, internal temperatures will continue to increase until the threshold for operation of the electronic components is breached. Batteries are affected in a similar manner when used in electronic instruments. Recent success with “bare” high-temperature electronics has been very promising, but more improvements are needed.

Temperature effects on downhole drilling tools and muds have been largely overcome by refinement of seals and thermal-expansion processes. Fluid temperatures in excess of 190°C (370°F) may damage components such as seals and elastomeric insulators. Bit-bearing seals, cable insulations, surface well-control equipment, and sealing elements are some of the items that must be designed and manufactured with these temperatures in mind. Elastomeric seals are very common in the tools and fixtures that are exposed to the downhole temperatures.

Directional drilling. Directionally drilled wells reach out in different directions and permit production from multiple zones that cover a greater portion of the resource and intersect more fractures through a single casing. An EGS power plant typically requires more than one production well.

In terms of the plant design, and to reduce the overall plant “footprint,” it is preferable to have the wellheads close to each other. Directional drilling permits this while allowing production well bottom-spacings of 3,000 ft. (900 m) or more. Selective bottom-hole location of production and injection wells will be critical to EGS development..

The tools and technology of directional drilling were developed by the oil and gas industry and adapted for geothermal use. Since the 1960s, the ability to directionally drill to a target has improved immensely but still contains some inherent limitations and risks for geothermal applications.

In the 1970s, directional equipment was not well-suited to the high-temperature downhole environment. High temperatures, especially during air drilling, caused problems with directional steering tools and mud motors, both of which were new to oil and gas directional drilling. However, multilateral completions using directional drilling are now common practice for both oil and gas and geothermal applications.

8.2.4 Noise Pollution

Noise from geothermal operations is typical of many industrial activities (DiPippo, 1991a). The highest noise levels are usually produced during the well drilling, stimulation, and testing phases when noise levels ranging from about 80 to 115 decibels A-weighted (dBA) may occur at the plant fence boundary. During normal operations of a geothermal power plant, noise levels are in the 71 to 83 decibel range at a distance of 900 m (DiPippo, 2005). Noise levels drop rapidly with distance from the source, so that if a plant is sited within a large geothermal reservoir area, boundary noise should not be objectionable. If necessary, noise levels could be reduced further by the addition of mufflers or other soundproofing means but at added cost. For comparison, congested urban areas typically have noise levels of about 70 to 85 decibels, and noise levels next to a major freeway are around 90 decibels. A jet plane just after takeoff produces noise levels of about 120 to 130 decibels.

8.4 Environmental Criteria for Project Feasibility

In determining the feasibility of an EGS project at a particular location, there are a number of technical criteria that carry direct or indirect environmental implications:

- Electricity and/or heat demand in the region
- **Proximity to transmission and distribution infrastructure**
- Volume and surface expression of a high-quality EGS reservoir
- Reservoir life and replacement wells
- Circulating fluid chemistry
- Flash vs. binary technology
- Cost/installed MWe and cost/MWh delivered to a local or regional market
- Load-following vs. base-load capability
- Plant reliability and safety.

In addition, as with any energy supply system, there are environmental criteria that need to be considered before moving forward with a commercial EGS project. These include:

- Geologic formations that are not prone to large seismic events, devastating landslides, or excessive subsidence
- **Compatible land use**
- **Drinking water and aquatic life protection**
- **Air quality standards**
- **Noise standards**
- GHG emissions/MWh
- Solid waste disposal standards
- Reuse of spent fluid and waste heat

Reviewing the above material from MIT helped us understand how to picture the geothermal system, its process and potential overall impacts. We felt compelled to keep certain elements intact in the over-arching subject matter presented, even though we were not quite sure what the engineering calculations were actually implying. This is not intended to complicate BLM's comment process, but rather, to present a brief excerpt from a study compiled by a group of expert partners that may be supportive of your decision making process. We understand that

BLM has a far greater understanding of geothermal development, but figured that a plethora of information might not be useless.

San Luis Valley Ecosystem Council (SLVEC)

The mission of SLVEC is to protect and restore—through research, education, and advocacy—the biological diversity, ecosystems, and natural resources of the Upper Rio Grande bioregion, balancing ecological values and human needs. SLVEC works as the only local public lands advocacy organization that is concerned about protecting and restoring intact ecosystems and wildlife corridors, from the mountain peaks to the rivers along the valley floor, and into New Mexico.

Since 1995 SLVEC has been serving the San Luis Valley, which is surrounded by 3.1 million acres of public lands that includes the Great Sand Dunes National Park, the Rio Grande National Forest, three National Wildlife Refuges, numerous State Wildlife Areas, 230,000 acres of wetlands- the most extensive system in the Southern Rocky Mountains, and some of Colorado's most remote wilderness. SLVEC originally formed to offer input for the Revised Management Plan of the Rio Grande National Forest (RGNF). Today it stands as a voice for citizens concerned about threats from increased motorized recreation, destructive timber sales, unbridled development, oil and gas development, and most recently, utility scale solar power facilities and transmission lines. SLVEC has established a reputation for bringing a strong environmental voice that finds workable solutions to the rural, conservative, public arena. SLVEC has approx. 500 members and a mailing list of 4,000 supporters.

In closing, we would like the opportunity to visit the BLM renewable energy office in Denver and encourage prioritizing the revision of the SLV BLM 1991 RAMP, which we believe is long overdue, and emphasize staying open to reviewing a wide range of alternatives that contain a landscape level perspective on renewable energy. I will be contacting the local BLM office to get this visitation information. Thank you for your time and consideration with these comments.

Sincerely,



Christine Canaly
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www.slvec.org



San Luis Valley Renewable Communities Alliance

October 13, 2010

Delivered via electronic mail (slvplc_comments@blm.gov) and U.S. mail.

Joe Vieira
San Luis Valley Public Lands Center
1803 West Hwy 160
Monte Vista, CO 81144

Re: Proposed Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment

Dear Mr. Vieira:

Thank you for the opportunity to comment on the Proposed Geothermal Leasing Environmental Assessment and Resource Management Plan Amendment. As a newly formed San Luis Valley grassroots organization, limited resources and staff prevent us from preparing a more complete review of the EA and Amendment. However, we hope you will fully consider this brief comment offered on behalf of the San Luis Valley Renewable Community Alliance (SLVRCA).

We agree that a rapid and cost-effective transition away from fossil fuels is imperative. In keeping with the need to preserve the multiple-use values of our public lands and protect the vital natural resources that they contain, we support energy conservation, efficiency and demand-side management practices first. Only after all efforts have been exhausted to reduce energy demand should the carefully planned and vetted development of clean, renewable energy technologies proceed (see <http://solardoneright.org>).

The ubiquitous nature of renewable energy (RE) resources makes it most efficient and cost-effective to develop these resources at or near the point of use. Siting renewable energy resources far from the point of use where they require costly and environmentally damaging new transmission infrastructure is not the best way to develop our nations RE resources.

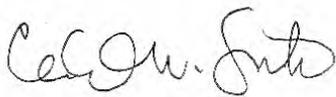
The BLM's Programmatic Environmental Impact Statement (PEIS) for geothermal leasing needs to consider point of use distributed generation (DG) alternatives and a comprehensive cost comparison of remote centralized RE versus DG in its analysis. A full cost assessment (including new transmission) is essential to ensure the best geographic mix of RE resources at the most reasonable cost to the consumer and taxpayer.

The San Luis Valley possesses a rich portfolio of renewable energy resources that should be developed, first, to meet local energy needs and then for limited export purposes in context to preserving the full range of the Valley's rural, agricultural and resource values.

Renewable energy development, particularly solar, is already proceeding at a rapid pace on private lands. We are very concerned that cumulative impacts from solar, geothermal and hydro energy development will lead to the disproportionate, unregulated renewable energy industrialization of the San Luis Valley. It is essential for federal, state and county governments and a full range of stakeholder/community groups to engage in a cooperative planning process to avoid this outcome.

We would like to be part of that planning process as it moves forward. Please keep us informed.

Sincerely,

A handwritten signature in black ink, appearing to read "Ceal Smith". The signature is written in a cursive, flowing style.

Ceal Smith, Chair

Zoe Ghali

From: Andrew Gentile
Sent: Thursday, October 14, 2010 12:21 PM
To: Zoe Ghali; Drew Vankat (drew.vankat@empfi.com)
Cc: Carol-Anne Murray; David Batts (david.batts@empfi.com)
Subject: FW: DEC-10/0027 -- San Luis Resource Area Geothermal Leasing in Colorado's Ans Luis Valley (RMP Amendment) -- NO COMMENT

Follow Up Flag: Follow up
Flag Status: Flagged

For SLV Scoping Report, comment analysis

-----Original Message-----

From: Nancy_Keohane@blm.gov [mailto:Nancy_Keohane@blm.gov]
Sent: Thursday, October 14, 2010 8:55 AM
To: Andrew Gentile
Subject: Fw: DEC-10/0027 -- San Luis Resource Area Geothermal Leasing in Colorado's Ans Luis Valley (RMP Amendment) -- NO COMMENT

For the scoping report

Nancy Keohane, NEPA Specialist
BLM Renewable Energy Team
San Luis Valley Public Land Center
1803 West Hwy 160
Monte Vista, Colorado 81144
719-852-6227 719-852-6250 FAX
nancy_keohane@blm.gov

----- Forwarded by Nancy Keohane/MVFO/CO/BLM/DOI on 10/14/2010 09:53 AM

Harold
Dyer/MVFO/CO/BLM/
DOI
10/14/2010 09:25
AM

To
Nancy Keohane/MVFO/CO/BLM/DOI@BLM
cc

Subject
Fw: DEC-10/0027 -- San Luis
Resource Area Geothermal Leasing in
Colorado's Ans Luis Valley (RMP
Amendment) -- NO COMMENT

----- Forwarded by Harold Dyer/MVFO/CO/BLM/DOI on 10/14/2010 09:25 AM -----

Julie_Sharp@nps.gov

ov

To

10/07/2010 10:53

Slvplc_comments@blm.gov

AM

cc

WASO_EQD_ExtRev@nps.gov,

robert_stewart@ios.doi.gov

Subject

DEC-10/0027 -- San Luis Resource
Area Geothermal Leasing in
Colorado's San Luis Valley (RMP
Amendment) -- NO COMMENT

The National Park Service has reviewed this project, and determined that no parks will be affected; therefore, we have no comments.

Thank you!

Julie

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Julie Sharp

Planning Tech/Environmental Protection Assistant National Park Service - Intermountain Regional Office Denver, CO ph 303.987.6705