



United States Department of Agriculture

---

# Record of Decision

## Santa Fe National Forest Geothermal Leasing



Forest Service, Santa Fe National Forest  
Coyote, Cuba, Espanola, Jemez Ranger Districts

Publication Number MB-R3-10-27  
June 2018

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

USDA is an equal opportunity provider, employer and lender.

## Table of Contents

<b>Acronyms and Abbreviations</b> .....		<b>iii</b>
<b>Cooperating Agencies</b> .....		<b>1</b>
<b>1.0 Introduction</b> .....		<b>1</b>
1.1 Introduction to the Record of Decision .....		1
<b>2.0 Background of the Project</b> .....		<b>1</b>
2.1 Project History.....		1
2.2 Purpose and Need for Action .....		1
2.3 Issues .....		2
2.3.1 Tribal Interests.....		2
2.3.2 Areas with High Concentrations of Important Archaeological and Cultural Sites		2
2.3.3 Unique Scenic and Landscape Values on the SFNF and the Adjoining Valles Caldera National Preserve and Bandelier National Monument.....		2
2.3.4 Land Use, Recreation, and Special Designations.....		3
2.3.5 Changes in Groundwater Flow and Temperature.....		3
2.3.6 Increased Sediment and Turbidity in Surface Water.....		3
2.3.7 Increased Risk of Natural and Induced Seismic Activity.....		3
2.3.8 Increased Risk of Wildfire .....		3
2.3.9 Fish and Wildlife Habitat Alteration .....		3
2.3.10 Disturbance to Livestock Grazing.....		3
<b>3.0 My Decision</b> .....		<b>3</b>
3.1 Decision for the Santa Fe National Forest Geothermal Leasing Project.....		4
3.1.1 Decision Rationale for the Selected Action .....		4
3.1.2 Decision Space for the Selected Action .....		5
3.1.3 Responsiveness to the Purpose and Need for the Selected Action.....		7
3.1.4 Responsiveness to the Issues and Resources Analyzed for the Selected Action....		7
3.1.5 Decision Conclusion for the Selected Action.....		8
3.2 Decision to Amend the 1987 Forest Plan .....		8
3.2.1 Amend Consistent with Forest Service NEPA Procedures (Subpart 219.13[b][3]) .....		9
3.2.2 How the 2012 Planning Rule Applied to the Plan Amendment.....		9
3.2.3 Purpose of the Amendment (36 CFR, Subpart 219.13[b][1]) .....		9
3.2.4 Compliance with the Rule’s Procedural Provisions .....		9
3.2.5 Documenting Compliance with the Rule’s Applicable Substantive Provisions...12		12
3.2.6 Project and Activity Consistency with the Plan .....		13
3.3 Bureau of Land Management Concurrence.....		13
<b>4.0 Selected Action</b> .....		<b>14</b>
4.1 Description of the Selected Action (Environmentally Preferable Alternative).....		14
<b>5.0 Other Alternatives</b> .....		<b>14</b>
5.1 Other Alternatives Considered .....		14
5.1.1 Alternative 1—No Action .....		14
5.1.2 Alternative 2—The Proposed Action .....		14
5.1.3 Alternative 4—Development Alternative .....		18
5.2 Alternatives Considered but Eliminated from Detailed Study .....		20

<b>6.0</b>	<b>Public Involvement and Agency Collaboration.....</b>	<b>21</b>
6.1	Public Scoping .....	21
6.2	Tribal Consultation .....	22
6.3	Cooperating Agency Consultation.....	23
<b>7.0</b>	<b>Findings Required by Laws, Regulations, Policy, and Direction .....</b>	<b>24</b>
7.1	Clean Air Act.....	24
7.2	Clean Water Act.....	24
7.3	Endangered Species Act .....	24
7.4	Energy Policy Act.....	25
7.5	Federal Land Policy and Management Act.....	25
7.6	Geothermal Steam Act.....	25
7.7	Geothermal Resource Leasing, 43 CFR, Part 3200 .....	26
7.8	Geothermal Resource Unit Agreements, 43 CFR, Part 3280 .....	26
7.9	Migratory Bird Treaty Act.....	26
7.10	Mining and Mineral Policy Act .....	26
7.11	National Environmental Policy Act.....	27
7.12	National Forest Management Act.....	27
7.13	National Historic Preservation Act.....	27
7.14	Organic Administration Act.....	27
7.15	Public Rangelands Improvement Act .....	28
7.16	New Mexico Geothermal Resources Development Act .....	28
7.17	New Mexico Administrative Code, Chapter 71, Article 9.....	28
<b>8.0</b>	<b>Best Available Scientific Information .....</b>	<b>28</b>
<b>9.0</b>	<b>Effective Date .....</b>	<b>29</b>
<b>10.0</b>	<b>Project Information .....</b>	<b>29</b>
<b>11.0</b>	<b>Signature and Date .....</b>	<b>30</b>

## Tables

Table 5-1. Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 2.....	17
Table 5-2. Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 4.....	20

## Figures

Figure 1. Lands Closed to Leasing Under the Selected Action .....	11
---	----

---

## Acronyms and Abbreviations

BLM	United States Department of the Interior, Bureau of Land Management
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CSU	controlled surface use
DEIS	draft environmental impact statement
EIS	environmental impact statement
ESA	Endangered Species Act
FEIS	final environmental impact statement
FLPMA	Federal Land Policy and Management Act
Forest Plan	Santa Fe National Forest Plan
FSM	Forest Service Manual
GIS	Geographic Information System
JNRA	Jemez National Recreation Area
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act of 1969
NFS	National Forest System
NHD	National Hydrography Dataset
NHPA	National Historic Preservation Act
NMOSE	New Mexico Office of the State Engineer
NOI	Notice of Intent
NPS	United States Department of the Interior, National Park Service
NRHP	National Register of Historic Places
NSO	no surface occupancy
PEIS	programmatic environmental impact statement
RFDS	reasonably foreseeable development scenario
ROD	record of decision

SFNF	Santa Fe National Forest
TCP	traditional cultural property
TL	timing limitation
USFWS	United States Department of the Interior, Fish and Wildlife Service
USGS	United States Department of the Interior, Geological Survey

---

## Cooperating Agencies

The Bureau of Land Management (BLM) and the National Park Service (NPS) served as cooperating agencies for this project. As cooperating agencies, they participated in the scoping process, reviewed and provided comments on the specialist reports, reviewed the draft environmental impact statement (DEIS) before its public release, and reviewed draft responses to comments received during the comment period. The BLM manages the mineral estate in the project area, which includes geothermal resources underlying the SFNF. The NPS manages the Bandelier National Monument, which is next to the analysis area, and the Valles Caldera National Preserve, which is surrounded on three sides by the analysis area.

## 1.0 Introduction

### 1.1 Introduction to the Record of Decision

This record of decision (ROD) provides documentation for amending the 1987 Santa Fe National Forest Plan, (Forest Plan) by closing the project area to geothermal leasing. An environmental impact statement (EIS) was developed, which documents the National Environmental Policy Act (NEPA) of 1970 analysis for the decision. This ROD documents my decision, along with the rationale for the decision and alternatives considered in reaching the decision. It includes a discussion of preferences among alternatives, based on relevant factors and how those factors were considered in reaching the decision.

## 2.0 Background of the Project

### 2.1 Project History

In 2008, the BLM recommended and the Assistant Secretary of Land and Minerals Management approved the ROD associated with the Programmatic Environmental Impact Statement (PEIS) for Geothermal Leasing in the Western United States. This led to a decision to amend BLM resource area management plans and provided analysis to allow certain National Forests to make decisions on existing lease applications.

Decisions in the 2008 Geothermal ROD identified those lands that are legally open or closed to consideration for geothermal leasing on affected National Forest System (NFS) lands; it provided stipulations, best management practices, and procedures for geothermal leasing and development. The Santa Fe National Forest (SFNF) determined that additional site-specific environmental analysis was needed to supplement the 2008 Geothermal PEIS, before we could make a decision about providing concurrence and consent to the BLM to lease lands in the SFNF.

### 2.2 Purpose and Need for Action

The purpose of the action is to refine the analysis available in the PEIS in order to determine if certain lands in the SFNF may be made available for geothermal leasing and, if so, to identify reasonable and necessary conditions to protect resources.

The need for the action is twofold: (1) to allow the Forest Service to satisfy its respective statutory and policy mandates in responding to requests for the environmentally responsible

development of energy resources and (2) to respond to policy directives calling for clean and renewable energy.

The United States Geological Survey (USGS) has identified approximately 194,000 acres of lands with significant geothermal potential within the boundaries of the SFNF, which includes non-federal lands. The BLM has received expressions of interest in leasing approximately 36,000 acres of this land for geothermal energy production. This action is needed because the 1987 Forest Plan, as amended, does not allocate areas as open or closed to geothermal leasing, does not have adequate stipulations or best management practices to apply to geothermal leases to protect sensitive resources, and does not assess the reasonably foreseeable development scenario (RFDS), as required in the 2008 PEIS.

The current expressed interest in geothermal leasing does not constitute the entire project area; however, 194,910 acres (168,650 acres of which is NFS lands) was considered in the analysis in the event that the SFNF needs to address future interest. By incorporating all lands identified as containing significant geothermal potential under one EIS, the SFNF can address future nominations and applications and provide or withhold consent in a timely manner.

The EIS documents the analysis of three action alternatives to meet this need, and a no action alternative.

## 2.3 Issues

The Forest Service developed a list of significant issues to be addressed in the EIS, using the comments received during the scoping process. It used these issues to help develop the range of alternatives and analyze environmental impacts. A summary of significant issues is provided below; see Section 1.13 of the Final Environmental Impact Statement (FEIS) for a complete discussion of the issues identified during scoping.

### 2.3.1 Tribal Interests

The Forest Service identified the disturbance of landscapes and locations associated with religious beliefs or cultural uses as a potential impact from future geothermal development. Tribes may consider the disturbance of the land or use of geothermal resources as an adverse impact that could not be avoided or minimized.

### 2.3.2 Areas with High Concentrations of Important Archaeological and Cultural Sites

Potential impacts on cultural resources include changing the character of a property's use or physical features in its setting that contribute to its historic significance, such as isolating the property from its setting, and introducing new visual, atmospheric, or audible elements that diminish the integrity of its historic features. There is a potential for undiscovered buried cultural resources and human remains, despite previous archaeological surveys and investigations.

### 2.3.3 Unique Scenic and Landscape Values on the SFNF and the Adjoining Valles Caldera National Preserve and Bandelier National Monument

The Forest Service identified potential impacts on visual resources, including modifying the visual character of the landscape. Geothermal development also could introduce artificial light



sources, which could increase the sky glow in the project area and potentially in adjacent landscapes, such as the Valles Caldera National Preserve.

### **2.3.4 Land Use, Recreation, and Special Designations**

Lands converted to geothermal use during the drilling and use phases—well pad, power plant, pipeline, and transmission line construction and use—could result in long-term indirect impacts on other uses, such as grazing, recreation, hunting, and mining. This is because geothermal use could displace these activities and uses. Another potential impact of future geothermal development is altering the physical, social, and operational character of the recreation setting, thereby changing the public’s experiences.

### **2.3.5 Changes in Groundwater Flow and Temperature**

The Forest Service identified changes in groundwater flow paths, pressurization, and temperature as potential impacts from future geothermal leasing.

### **2.3.6 Increased Sediment and Turbidity in Surface Water**

Geothermal exploration, development, and operation could increase sediment and turbidity in surface water.

### **2.3.7 Increased Risk of Natural and Induced Seismic Activity**

The risk of seismic activity and ground disturbance could increase from future geothermal development, particularly if enhanced geothermal systems were used.

### **2.3.8 Increased Risk of Wildfire**

Future geothermal development could increase the risk of wildfire. Potential sources of ignition would be vehicles, electrical lines, and people smoking.

### **2.3.9 Fish and Wildlife Habitat Alteration**

Fish and wildlife habitat alteration could be impacted by future geothermal development. Wildlife could be impacted by altering, removing, reducing, or fragmenting habitat. Noise from geothermal activities could also have impacts on wildlife. Disturbance during mating, nesting, or rearing could cause wildlife to abandon mating and nesting activities and can strand young, leaving them susceptible to predation and starvation.

### **2.3.10 Disturbance to Livestock Grazing**

Future geothermal development could disturb livestock and livestock grazing operations and reduce livestock grazing forage.

## **3.0 My Decision**

As the Forest Service responsible official for the Santa Fe National Forest Geothermal Leasing Project, I am making two separate and interrelated decisions regarding this project. First, I have decided to select Alternative 3—No Leasing (No Leasing Alternative) for implementation, as described in Section 4.0 of this document. (This is also referred to throughout as the selected action.) My rationale for this decision is provided in Section 3.1. Second, I have decided to amend the 1987 Forest Plan, and the rationale is further described in Section 3.2 of this

document. Forest Service decision authority applies only to NFS lands and does not extend to private, other federal, tribal, or state lands within or adjacent to the SFNF.

### 3.1 Decision for the Santa Fe National Forest Geothermal Leasing Project

This ROD documents my decision and rationale for selecting the No Leasing Alternative. This alternative was not identified during scoping or in the DEIS as the Forest Service's Proposed Action. The No Leasing Alternative, or selected action, is described in Chapter 2 of the FEIS and is described in detail in Section 4.0 of this ROD. My decision prevents geothermal leasing in the analysis area.

My decision to select the No Leasing Alternative for implementation is based on a thorough review of the FEIS, consultation with interested tribes, review of public concerns received on this project, and consultation with cooperating agencies.

#### 3.1.1 Decision Rationale for the Selected Action

The SFNF has outstanding landscapes, with a diversity of resource values and a rich history of human use and visitation. The Jemez Mountains, which is the location of the analysis area, provide a spectrum of ecological conditions. These support wildlife and plant communities, provide for human uses, such as livestock grazing, and are important to a number of Native American tribes for spiritual and cultural values. The area also provides opportunities for a variety of recreational pursuits, such as hiking, dispersed camping, and fishing and big game hunting. I value the resources and recreational opportunities the area provides. Furthermore, the area is home to many rare plants, animals, and a vast array of valuable cultural sites.

With these factors in mind, I do not take the no leasing decision lightly. Although geothermal leasing is recognized as having no environmental impact, the geothermal development that might follow would impact the natural, cultural, and social resource values found on the SFNF and on adjacent lands. Geothermal leasing is a discretionary action by the Forest Service, so I must consider any benefits the potential development of a renewable energy resource would have on air quality and climate change. I also must take into account the potential impacts of geothermal development on forest resources and tribal spiritual and cultural interests.

In reaching my decision, I have considered the purpose of and need for the action and the issues, along with the following:

- 1987 Forest Plan and associated amendments
- Current policies and regulations
- Impacts on natural, biological, and cultural resources
- Tribal, public, and cooperating agency comments received
- The full range of alternatives

I considered the concerns expressed throughout this process.

The following discussion summarizes pertinent aspects of my rationale for selecting the No Leasing Alternative for implementation.

In the FEIS analysis, the Forest Service considered the best available scientific information. Staff reviewed relevant scientific information, both supporting and opposing views. They also identified incomplete or unavailable information, scientific uncertainty, and risk. See Section 8 of this ROD for more information on how the best available scientific information was used throughout the process.

The SFNF consulted with a total of 31 Native American tribal governments during the NEPA process, held two listening sessions with tribal leaders, and met individually with 10 tribes.

Since the SFNF received the lease nominations from the BLM, the tribes have been united and consistent in their strong opposition to any geothermal development in the Jemez Mountains. The All Pueblo Council of Governors passed a resolution against the project, and several pueblos submitted comments during the scoping period.

The SFNF works with the tribes on a government-to-government basis and, in the decision-making process, respectfully considered their position on geothermal leasing. The Jemez Mountains are sacred to Native Americans, serving as both sanctuary and a place of worship. The tribes are committed to preserving their cultural ties to this sacred landscape. They made it clear that they will not sanction man-made disturbances at the scale required for energy production.

The Valles Caldera National Preserve was moved from Forest Service administration to the NPS in December 2014, during the preparation of the EIS for geothermal leasing. In December 2016 (during the preparation of the FEIS), the NPS initiated the process of designating the Valle Caldera National Preserve as a “significant geothermal feature,” under the Geothermal Steam Act. While this designation would not directly impact the Forest Service’s ability to concur with geothermal leasing of NFS lands, it highlights the importance that the NPS places on maintaining the natural values of geothermal features in the Valles Caldera.

### **3.1.2 Decision Space for the Selected Action**

Under the primary authority in the Organic Administration Act of 1897, the role of the Santa Fe National Forest is to ensure that minerals activities are managed to minimize adverse environmental effects on NFS lands and resources and to comply with all applicable laws and regulations.

Forest Service Manual (FSM) 2800 states that the mission of the Forest Service in minerals management is to encourage, facilitate, and administer the orderly exploration, development, and production of mineral and energy resources on NFS lands to help meet the present and future needs of the United States.

The Forest Service’s objectives (FSM 2802) are as follows:

- Encourage and facilitate the orderly exploration, development, and production of mineral and energy resources on NFS lands, to maintain a viable, healthy minerals industry
- Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner and that these activities are integrated with the planning and management of other NFS resources
- Eliminate or prevent occupancy and activities that are not reasonably incident to and required for the mineral operation

- Ensure that mineral-related activities are processed and administered in accordance with laws, regulations, and policy
- Promote the self-sufficiency in mineral and energy resources that is essential for economic growth and the national defense

The primary guidance for geothermal leasing is found in the Geothermal Steam Act of 1970 (30 US Code, Section 1001, et seq.), which governs the leasing of geothermal steam and related resources on federal lands. The act states that geothermal leases may be issued only on NFS lands “with the consent of, and subject to such terms and conditions as may be prescribed by the head of that Department to insure adequate utilization of the lands for the purposes for which they were withdrawn or acquired.” On May 18, 2001, the president signed Executive Order 13212, Actions to Expedite Energy-Related Projects, which states that “the increased production and transmission of energy in a safe and environmentally sound manner is essential.” The Energy Policy Act of 2005 encourages leasing and developing geothermal resources on federal lands by streamlining administrative processes.

The BLM manages the mineral estate, which includes geothermal resources underlying the SFNF. It is subject to the Federal Land Policy and Management Act of 1976 (FLPMA). FLPMA states “The Congress declares that it is the policy of the United States that...the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values.”

Tribal relations and the management of cultural resources are guided by numerous laws, executive orders, and policies. The laws and their implementing regulations include the following:

- Antiquities Act of 1906
- National Historic Preservation Act (NHPA) of 1966
- American Indian Religious Freedom Act of 1978
- Archaeological Resources Protection Act of 1979
- Native American Graves Protection and Repatriation Act of 1990
- 2008 Farm Bill

The Executive Orders are as follows:

- EO 11593—Protection and Enhancement of the Cultural Environment
- EO 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13007—Indian Sacred Sites
- EO 13175—Consultation and Coordination with Indian Tribal Governments
- EO 13647 – Establishing the White House Council on Native American Affairs

Guidance is also provided in the 2016 White House Tribal Nations Conference Progress Report called A Renewed Era of Federal-Tribal Relations. In this report, the White House stresses consultation as an essential element and cites the November 5, 2009, Memorandum on Tribal Consultation to the Heads of Executive Departments and Agencies.

The regulatory guidance and mandates for conducting tribal consultation on the effects of actions by the Federal government on areas and resources of concern stresses the importance of communication and working with tribal communities before making decisions that might affect their traditions and livelihood. The regulatory guidance and mandates for the management of cultural resources stress the importance of the resource and recognize the resource as nonrenewable. They require agencies to account for effects of their actions on significant resources, in addition to stressing the need to protect them.

In addition, Appendix D of the FEIS lists numerous other laws guiding the protection of resources. I recognize that Alternative 2—Proposed Action Alternative and Alternative 4—Development Alternative (hereafter called the Proposed Action and the Development Alternative) might result in significant social impacts. The analysis that is disclosed in the Santa Fe National Forest Geothermal Leasing FEIS concludes that the No Leasing Alternative best achieves the minimization of impacts on NFS surface resources and prevents social impacts associated with geothermal development.

### **3.1.3 Responsiveness to the Purpose and Need for the Selected Action**

The No Lease Alternative fully meets the purpose of and need for action stated in the May 2015 *Federal Register* Notice of Intent (NOI) to Prepare an EIS. Section 1.2 of the FEIS contains the details of the purpose and need for action.

The selected action protects resources from geothermal development impacts, addresses the public's concerns, and is consistent with applicable federal laws and regulations. Refer to Chapter 2 of the FEIS for a description of the components of the No Lease Alternative (also contained in Section 4 of this ROD) and to Chapter 3 of the FEIS for a complete description of the environmental impacts predicted under this alternative.

### **3.1.4 Responsiveness to the Issues and Resources Analyzed for the Selected Action**

The No Lease Alternative is responsive to the issues described in Section 1.13 of the FEIS and summarized in Section 2.3 of this ROD, which were derived from public scoping comments. The selected action was developed to respond to significant issues regarding potential impacts on many resources.

In addition to the scoping issues summarized in Section 2.3 of this document and described in detail in Chapter 1 of the FEIS, the Geothermal Leasing Interdisciplinary Team identified several additional resources. These were included in the analysis of environmental impacts disclosed in Chapter 3 of the FEIS. Determining the impacts on these resources was important in order to fully disclose the impacts of the proposed project and to determine compliance with the Forest Plan and Forest Service policy and direction.

The geothermal leasing process is described in Section 1.5 of the FEIS. Simply put, the Forest Service first determines if an area is available for leasing; if it is available for leasing, the Forest Service then identifies what constraints are necessary to protect the resources.

As it receives lease applications, the Forest Service notifies the BLM of the constraints on each parcel. After completing the NEPA process, the BLM auctions the leases to the highest bidder; therefore, when the BLM determines if an area is available for leasing and when it develops the

leasing stipulations, there is no plan of development or detailed proposal from a specific proponent.

The impacts analysis in the EIS is done by considering an RFDS, which leads to a generalized analysis; therefore, the EIS cannot definitively respond to many of the issues at the site-specific scale. This is because the magnitude, location, and timing of the surface-disturbing activities are unknown.

Under the No Leasing Alternative, none of the resources will be impacted by geothermal development. This prevents the potential changes to the physical and social environment that were identified as issues.

In the proposed action and development alternative, the resource concerns identified in the EIS were addressed by closing specified areas to leasing or by applying no surface occupancy (NSO) stipulations, controlled surface use (CSU) stipulations, and timing limitations (TLs), along with identifying best management practices.

Closures and stipulations under the Proposed Action would result in less than 2 percent of the analysis area (approximately 3,700 acres) available for surface occupancy.

Under the Development Alternative, closures and stipulations would have left about 10 percent of the analysis area (approximately 17,200 acres) available for surface occupancy.

As noted above, there is no proposal for development, so we cannot say whether development of well fields and a geothermal power plant would be technically feasible on the land available for surface occupancy under either of these alternatives. However, mapping the No Lease and NSO areas illustrates that there is no route for the power line from the generating plant to the established electrical distribution system, across NFS lands (FEIS Appendix B, Figures 2-2, and 2-6). This would be the case under either of these alternatives. The surface use restrictions under the Proposed Action and the Development Alternative would make leases for the geothermal resource improbable; however technical feasibility was not analyzed in detail.

### **3.1.5 Decision Conclusion for the Selected Action**

I have determined that the selected action is the best balance of minimizing impacts on NFS resources and on other environmental and social values. This alternative has the fewest impacts, compared with other alternatives. I reached this conclusion after reviewing the analysis and supporting information contained in the FEIS and project record, consulting with cooperating agencies, reviewing public comments on the DEIS, and considering the factors discussed above.

## **3.2 Decision to Amend the 1987 Forest Plan**

Under the National Forest Management Act and its implementing regulations at 36 Code of Federal Regulations (CFR), Part 219 (2012 Planning Rule), a plan may be amended at any time. Plan amendments may be broad or narrow, depending on the need for the change. I have the discretion to determine whether and how to amend the 1987 Forest Plan and to determine the scope and scale of any amendment.

This ROD documents my decision to amend the 1987 Forest Plan concurrently with my decision on geothermal leasing. The Forest Plan does not currently address geothermal leasing.

### **3.2.1 Amend Consistent with Forest Service NEPA Procedures (Subpart 219.13[b][3])**

The effects of the forest plan amendment are the same as the effects of identifying which lands are closed to geothermal leasing under either nondiscretionary or discretionary authorities or open to geothermal leasing, subject to stipulations. This is because the plan amendment itself is the mechanism to implement these discretionary and nondiscretionary leasing closures. This effects analysis is documented in the Santa Fe National Forest Geothermal Leasing FEIS, following Forest Service NEPA procedures at 36 CFR, Part 220. This amendment may create a significant impact and thus required the preparation of an EIS. Because of this, it is considered a significant change in the plan, for the purposes of the National Forest Management Act; therefore, it required a 90-day comment period for the proposed plan amendment and draft EIS (36 CFR, Subparts 219.16[a][2], 219.13[b][3]).

### **3.2.2 How the 2012 Planning Rule Applied to the Plan Amendment**

I prepared this forest plan amendment to the 1987 Santa Fe National Forest Plan under the 2012 Planning Rule.

### **3.2.3 Purpose of the Amendment (36 CFR, Subpart 219.13[b][1])**

The purpose of the amendment is to implement discretionary and nondiscretionary leasing closures for geothermal resources. Pursuant to federal law, the Forest Service may reasonably regulate the use of the surface estate to minimize impacts on Forest Service surface resources. My decision to implement the selected action will prevent impacts on NFS surface resources related to geothermal leasing and development. However, the selected action (and all action alternatives) remained inconsistent with the 1987 Forest Plan, because it does not address geothermal leasing; therefore, amending the 1987 Forest Plan is necessary.

This amendment meets the purpose and need for the Proposed Action, while conforming to the requirements of the Energy Policy Act of 2005 (Public Law 109–580). This is to facilitate timely processing of geothermal lease applications and Forest Service policies intended to minimize impacts on surface resources.

### **3.2.4 Compliance with the Rule's Procedural Provisions**

As explained below, this amendment complies with the procedural provisions of the 2012 Planning Rule (36 CFR, Subpart 219.13[b]).

#### **3.2.4.1 Use of the Best Available Scientific Information to Inform the Planning Process (Subpart 219.4)**

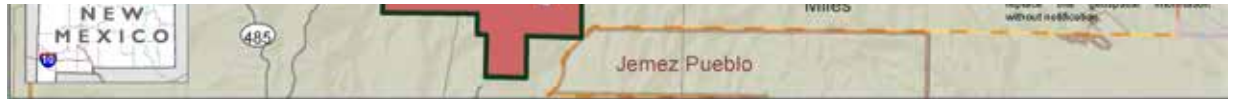
Documentation on how the best available scientific information was used to inform the planning process is provided in Section 8 of this ROD.

#### **3.2.4.2 Providing Opportunities for Public Participation (Subpart 219.4) and Providing Public Notice (Subparts 219.16 and 219.13[b][2])**

Public opportunities for participating in and commenting on the amendment were combined with those for the EIS. See Section 6 of this ROD for a description of public involvement and agency collaboration.

### 3.2.4.3 Format for Plan Components (Subparts 219.13[b][4] and 219.7[e])

One new standard, which conforms to the formatting requirements for plan amendments, would be added to the forest-wide plan components in the minerals section of the Forest Plan. It is as follows:



) are closed to geothermal leasing. Geothermal leasing outside of the Geothermal Analysis Area must undergo site-specific environmental analysis to determine if leases can be authorized and what site-specific stipulations may be required.

### 3.2.4.4 The Plan Amendment Process (Subpart 219.13)

The National Forest Management Act requires that proposed projects be consistent with the forest plan of the administrative unit where the project would occur. When a project is not consistent with the forest plan, the Forest Service has several options. The following describes these options, as well as my choice between these options for resolving inconsistencies with the forest plan:

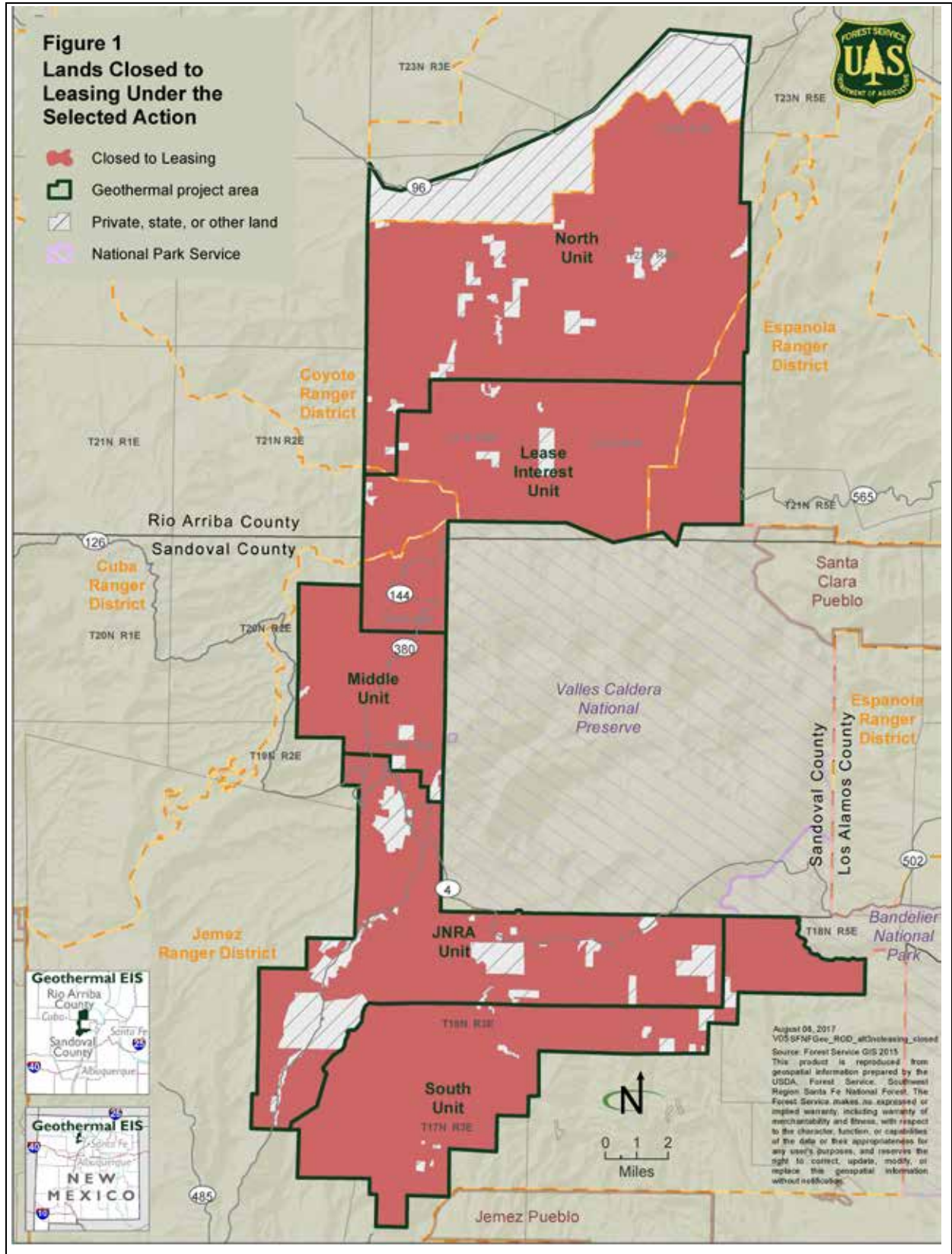
- Modify the proposed project or activity to make it consistent with the applicable plan components—The Proposed Action and each of the action alternatives were determined to be inconsistent with the 1987 Forest Plan, because the plan did not address geothermal leasing.
- Reject the proposal or terminate the project or activity—As discussed earlier, as well as in the DEIS and FEIS, I must determine the availability of lands on the SFNF for geothermal leasing. Compliance with laws and regulations is discussed throughout the FEIS, as well as in Section 7 of this ROD.
- Amend the plan as a separate action so that the project or activity will be consistent with the plan as amended.
- Amend the plan contemporaneously with the approval of the project or activity so that the project or activity will be consistent with the plan as amended—I chose this option and decided to address both the project and the forest plan amendment in a single EIS. This will most effectively involve the public and tribes and most efficiently disclose the impacts of both decisions.

See the *Summary* section of the FEIS for details on the overall amendment process.

### 3.2.4.5 Effective Date (Subpart 219.17[a][2])

Because this plan amendment is associated with an EIS, it is effective 30 days after publication of notice of its approval.





### **3.2.5 Documenting Compliance with the Rule's Applicable Substantive Provisions**

The planning rule requires that those substantive rule provisions at 36 CFR, Subparts 219.87 through 219.11, that are directly related to the amendment are applicable to this amendment. The applicable substantive provisions apply only within the scope and scale of the amendment (36 CFR, Subpart 219.13[b][5]).

As explained in the discussion that follows, both the purpose and the effects of the amendment are such that provisions in Subpart 219.8 (Sustainability) and Subpart 219.10 (Multiple Use) are directly related to the amendment. I have applied those provisions within the scope and scale of the amendment.

#### **3.2.5.1 Scope and Scale of the Amendment**

I determined the scope and scale of the amendment based on the purpose for the amendment (Subpart 219.13[b][5][i]). Overall, the purpose of the amendment is to improve the Forest's ability to manage surface resources by allocating areas as either open or closed to geothermal leasing (FEIS, Section 1.2). The scope of the amendment is the addition of a single forest plan standard to the forest-wide management direction for minerals that closes the analysis area to any geothermal leasing. The scale of the amendment is the geothermal leasing analysis area, 168,650 acres of NFS lands in the Coyote, Cuba, Espanola, and Jemez Ranger Districts.

#### **3.2.5.2 Rule Provisions Directly Related to the Amendment**

The rule requires that substantive rule provisions that are directly related to the amendment must be applied to the amendment, within its scope and scale. The substantive requirements of the rule are in 36 CFR, Subparts 219.8 through 219.11. They concern sustainability, diversity of plant and animal communities, multiple use, and timber management. The rule establishes that one or more of the following criteria determine whether any of its substantive requirements are directly related to the amendment:

- The purpose of the amendment (Subpart 219.13[b][5][i])
- Beneficial effects of the amendment (Subpart 219.13[b][5][i])
- Substantial adverse effects associated with a rule requirement (Subpart 219.13[b][5][ii][A])
- Substantial lessening of protections for a specific resource or use (Subpart 219.13[b][5][ii][A])
- Substantial impacts to a species or substantially lessening protections for a species (36 CFR, Subpart 219.13[b][6])

Application of a substantive rule requirement that is directly related to the amendment may demonstrate that the amendment is compliant and need not be changed, or it may necessitate modification of the amendment to meet the requirements. Applying these criteria, I have made the following determinations.

The NEPA analysis indicated that the amendment to close the area to geothermal leasing in the foreseeable future would have beneficial effects to soil, and water resources as there would be less soil disturbance and less surface disturbance, causing less potential for changes to surface or subsurface water resources. Implementing the amendment would meet the planning rule

requirements to provide for soil and water (Subpart 219.8[a][2]); therefore, no changes were made to the amendment.

The NEPA analysis indicated that the amendment to close the area to geothermal leasing could have an indirect negative effect on climate change if power from conventional fossil fuel sources of electricity were developed in place of the geothermal development. However, any geothermal electricity that might otherwise be developed (up to 1.1 million megawatt hours per year) would make up less than 1 percent of the total electricity produced in New Mexico. For this reason, this effect is non-substantial.

Because the amendment scope focuses only on geothermal energy, the amendment scale focuses only on the geothermal analysis area, and the indirect effects on climate change would be non-substantial (as discussed above), implementation of the amendment would meet the planning rule requirements to provide for system drivers and stressors, like climate change (Subpart 219.8[a][1][iv]); therefore, no changes were made to the amendment.

The NEPA analysis indicated that there would be no impacts on non-geothermal energy and mineral resources. Because the amendment scope focuses only on geothermal energy and the amendment scale focuses only on the geothermal analysis area (168,650 acres, roughly 10 percent of the SFNF), opportunities for other renewable and nonrenewable energy and mineral resources, both within the area and throughout the rest of the forest, are not affected or diminished by the amendment. Having applied those rule provisions within the scope and scale of the amendment, I found that implementing the amendment would meet the planning rule requirements to provide for renewable and nonrenewable energy and mineral resources (Subpart 219.8[a][2]); therefore, no changes were made to the amendment.

The other substantive requirements in Subparts 219.8 through 219.11 are not affected by the amendment.

### **3.2.6 Project and Activity Consistency with the Plan**

All future projects and activities must be consistent with the amended plan. The 2012 Planning Rule consistency provisions, at 36 CFR, Subpart 219.15(d), apply only to the plan component (standard) added under the 2012 Planning Rule. With respect to determinations of project consistency with other plan provisions, the Forest Service's prior interpretations of consistency applies; that is, the consistency requirement applies only to plan standards and guidelines (Forest Service Handbook 1909.12, Ch. 20, Sec. 21.33).

## **3.3 Bureau of Land Management Concurrence**

The BLM has jurisdiction over and expertise on geothermal leasing on National Forests. In an August 7, 2014, letter to the BLM State Director, the Forest Service officially invited the BLM to participate as a cooperating agency. The BLM would provide technical expertise and would review the EIS. The BLM accepted, and personnel from the State Office provided advice and assistance during the preparation of the EIS. The FEIS and ROD will be transmitted to the BLM State Director, with a recommendation that my decision be adopted in its entirety.

As described in the FEIS and as provided for by law and regulation, the BLM will not offer lands that the forest supervisor has determined to be unavailable for geothermal leasing. No lease parcels will be offered for sale without the concurrence of the Forest Service (43 CFR, Subpart 3201.10[a][2]).

## 4.0 Selected Action

### 4.1 Description of the Selected Action (Environmentally Preferable Alternative)

The Council on Environmental Quality (CEQ) regulations (40 CFR, Subpart 1505.2[b]) require that the ROD identify the alternative or alternatives that could be considered environmentally preferable. The environmentally preferable alternative is defined by CEQ as follows:

- The alternative that causes the least damage to the biological and physical environment
- the alternative that best protects, preserves, and enhances historic, cultural, and natural resources

I consider the No Leasing Alternative (Alternative 3) to be the environmentally preferable alternative, because it prohibits any surface resource disturbance for geothermal leasing and development.

Under the selected action, the SFNF will amend the Forest Plan to implement discretionary closures to geothermal leasing on all lands in the project area not already closed to leasing. 194,900 acres will be closed to leasing, including nondiscretionary closed lands in the Jemez Natural Resource Area (JNRA). There will be no NFS lands available for leasing in the project area under the selected action.

## 5.0 Other Alternatives

### 5.1 Other Alternatives Considered

In addition to the selected alternative, I considered three other alternatives, which are discussed below. Alternative 3 was the environmentally preferred alternative. A more detailed comparison of the alternatives can be found in the FEIS, Appendix B, Stipulations and Closures by Alternatives.

#### 5.1.1 Alternative 1—No Action

NEPA regulations require an agency conducting an EIS to “include the alternative of no action” (40 CFR, Subpart 1502.14). Under the no action alternative, the present course of management, based on the current forest plan, would continue. The Forest Plan would not be amended.

Under the no action alternative, the SFNF would not make an availability determination for geothermal leasing on lands in the project area. Geothermal lease applications and nominations would continue to be processed; however, they would be evaluated on a case-by-case basis under separate NEPA analyses, in accordance with the Forest Plan and existing laws and regulations. The JNRA (approximately 28,900 acres) would remain closed to geothermal leasing. This alternative does not meet the purpose and need.

#### 5.1.2 Alternative 2—The Proposed Action

Under Alternative 2, the Forest Plan would be amended. Land in the project area administered by the Forest Service would be identified as being closed to geothermal leasing, under either nondiscretionary or discretionary authorities, or would be identified as open to geothermal

leasing, with possible moderate constraints (TLs and CSU stipulations) or major constraints (NSO stipulations).

The Forest Service has determined that certain lands in the project area are excluded from geothermal leasing on the basis of existing laws, regulations (see 43 CFR, Subpart 3201.11), and executive orders. This would be the case for NFS lands in the JNRA; approximately 28,900 acres.

In addition to making nondiscretionary closures, the Forest Service has the administrative authority to issue discretionary closures to protect special resource values.

The following areas are proposed Forest Service discretionary closures for geothermal leasing:

- Hot springs and a 1-mile radius protection zone around them
- Administrative site withdrawals
  - Seven Springs (7 acres)
  - Encino (184 acres)
  - Encino Point (120 acres)
  - Cerro Pelado Lookout (160 acres)

Approximately 32,000 acres of NFS lands would be closed (by law, regulations, or other authority) to geothermal leasing within the project area.

#### 5.1.2.1 Lands Available for Leasing

Under Alternative 2, approximately 136,650 acres of the NFS lands in the project area would be available for geothermal leasing. This would be subject to existing laws, regulations, formal orders, and stipulations attached to the lease form and its terms and conditions.

#### *No Surface Occupancy*

NSO stipulations would apply to the following:

- Designated or proposed critical habitat for listed species under the Endangered Species Act (ESA) of 1973 (as amended) if it would adversely modify the habitat. For listed or proposed species without designated habitat, NSO would be implemented to the extent necessary to avoid jeopardy.
- Areas with important cultural and archaeological resources, such as
  - Traditional cultural properties (TCPs) and Native American sacred sites, as identified through consultation
  - Properties listed on or eligible for listing on the National Register of Historic Places (NRHP, including National Landmarks and National Register Districts and Sites)
  - Additional lands outside the designated boundaries, to the extent necessary to protect values where the setting and integrity are critical to their designation or eligibility
  - Areas that qualify for cultural resource protection, based on Forest Plan criteria

- The following features and a 500-foot-wide protection zone around them:
  - Water bodies
  - Perennial and intermittent rivers and streams
  - Wetlands, springs, and playas (mapped in the USGS National Hydrography Dataset [NHD])
  - Riparian areas
  - 100-year floodplains surrounding some features
- Acequias are not included in the NHD and will need to be delineated on-site. Acequias with water rights recognized by the New Mexico Office of the State Engineer (NMOSE) would be protected by a 50-foot zone, measured horizontally from the outer edge of the ditch.
- Water sources recognized by the Drinking Water Bureau of the New Mexico Environmental Department and NMOSE. These include drinking water sources, wells, springs, and a 1-mile protection zone around them.
- Slopes in excess of 40 percent.
- Soils with severe erosion potential.
- Developed recreation facilities, special-use permit recreation sites, and areas with significant recreational use, with which geothermal development is deemed incompatible
  - San Antonio Creek Recreation Area
  - Seven Springs Recreation Area
  - Paliza Recreation Area
- NFS lands with a Scenery Management System integrity level of very high.
- Inventoried roadless areas.

Approximately 132,900 acres of NFS lands would be available to leasing under Alternative 2, subject to NSO stipulations.

#### *Controlled Surface Use*

CSU stipulations would apply to the following areas and site conditions:

- Protection of slopes between 30 and 40 percent—This stipulation would be applied to minimize the potential for soil erosion on these slopes.
- Protection of important dispersed recreational areas—This stipulation would be applied to minimize the potential for adverse impacts on recreational values, both motorized and nonmotorized, and the natural settings associated with the recreation.
- Protection of viewsheds with a Scenery Management System integrity level of high.

Under Alternative 2, approximately 80,300 acres of NFS lands would be available to leasing, subject to CSU stipulations. Of these lands, approximately 78,200 acres are also subject to NSO stipulations.

### *Timing Limitation Stipulations*

TLs would apply to the following areas:

- Mexican spotted owl designated protected activity centers—Drilling and construction would be prohibited between March 1 and August 31.
- Northern goshawk designated post-fledging areas—Drilling and construction would be prohibited between March 1 and September 30.
- Peregrine falcon eyrie nesting areas—Drilling and construction would be prohibited between March 1 and August 15.
- Elk calving areas—Drilling and construction would be prohibited between June 1 and July 31.

Approximately 39,500 acres would be available to leasing under Alternative 2, subject to TL stipulations. Of these lands, approximately 23,800 acres are also subject to CSU stipulations, and approximately 39,400 acres are also subject to NSO stipulations.

### *Standard Lease Terms and Conditions*

Under Alternative 2, approximately 1,400 acres would be open to leasing, subject to standard lease terms and conditions; that is, they would not be subject to closures or NSO, CSU, or TL stipulations, as described above.

### *Notice to Lessee*

The notice to lessee of no vegetation clearing between May 15 and July 31 would be applied in migratory bird nesting areas.

### *Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 2, The Proposed Action*

A summary of the acres open and closed to geothermal leasing under Alternative 2, the Proposed Action, is provided below in **Table 5-1**. This information is also found in the FEIS, in Table 2-1.

<b>Table 5-1. Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 2<sup>1,2</sup></b>	
<b>Allocation</b>	<b>Alternative 2 Acres/Percent of Decision Area</b>
Closed to geothermal leasing	32,000/19%
Open to geothermal leasing subject to NSO stipulations	132,900/79%
Open to geothermal leasing subject to CSU stipulations	80,300/48%
Open to geothermal leasing subject to TLs	39,500/23%
Open to geothermal leasing subject to standard lease terms and conditions	1,400/1%
Available for surface occupancy <sup>3</sup>	3,700/2% (largest parcel = 300 acres)

<sup>1</sup>NSO, CSU, and TLs do not overlap areas closed to leasing.

<sup>2</sup>Multiple NSO, CSU, and TLs overlap each other; and all would apply. Exceptions, modifications, or waivers may be applied to some stipulations.

<sup>3</sup>Lands that are neither closed to leasing nor subject to NSO stipulations are considered available for surface occupancy.

### 5.1.3 Alternative 4—Development Alternative

Developed to complete the range of alternatives, Alternative 4 incorporates the BLM’s information on the RFDS of geothermal resources; therefore, it focuses on the Leasing Interest Unit (i.e., Pending Lease Unit) and the Northern Unit. The Forest Plan would be amended.

#### 5.1.3.1 Lands Closed to Leasing

The Forest Service has determined that certain lands in the project area are excluded from geothermal leasing on the basis of existing laws, regulations (43 CFR, Subpart 3201.11), and executive orders. These non-discretionary closures include approximately 28,900 acres in the JNRA. There would be no discretionary closures under Alternative 4. In total, 28,900 acres would be closed to geothermal leasing.

#### 5.1.3.2 Lands Available for Leasing

Under the Proposed Action, approximately 139,800 acres of NFS lands in the project area would be available for geothermal leasing. This would be subject to existing laws, regulations, formal orders, and stipulations attached to the lease form and to the terms and conditions of the standard lease form.

#### *No Surface Occupancy*

NSO stipulations would apply to the following:

- Hot springs, and a 1-mile protection zone around them.
- Designated or proposed critical habitat for listed species under the ESA of 1973 (as amended), if it would adversely modify the habitat. For listed or proposed species without designated habitat, NSO would be implemented to the extent necessary to avoid jeopardy.
- Areas with important cultural and archaeological resources, such as
  - TCPs and Native American sacred sites, as identified through consultation
  - Properties listed on or eligible for listing on the NRHP, including National Landmarks and National Register Districts and Sites
  - Additional lands outside the designated boundaries, to the extent necessary to protect values where the setting and integrity are critical to their designation or eligibility
  - Areas that qualify for cultural resource protection, based on Forest Plan criteria
- The following features and a 500-foot-wide protection zone around them:
  - Water bodies
  - Perennial rivers and streams;
  - Riparian areas, wetlands, and playas mapped in the USGS NHD
  - 100-year floodplains surrounding some features
- Acequias, which are not included in the NHD and will need to be delineated on-site; acequias with NMOSE-recognized water rights would have a protection zone of 50 feet, measured horizontally from the outer edge of the ditch.



- Drinking water sources recognized by the Drinking Water Bureau of the New Mexico Environmental Department and a 1-mile protection zone around them.
- Developed recreation facilities, special-use permit recreation sites, areas with significant recreation where geothermal development is deemed incompatible, and the following administrative sites
  - San Antonio Creek Recreational Area
  - Seven Springs Recreation Area
  - Paliza Recreation Area
  - Seven Springs Administrative Site
  - Encino Administrative Site
  - Encino Point Administrative Site
  - Cerro Pelado Lookout Administrative Site
- Inventoried roadless areas.
- Slopes in excess of 40 percent.

Approximately 122,500 acres of NFS lands would be available to leasing under Alternative 4, subject to NSO stipulations.

#### *Controlled Surface Use*

CSU stipulations would apply to the following areas and site conditions:

- Intermittent streams listed in the NHD and ephemeral drainages delineated by site-specific mapping
- NMOSE-recognized springs and all NMOSE-permitted wells
- Protection of slopes between 30 and 40 percent; this stipulation would be applied to minimize the potential for soil erosion on these slopes
- Soils with severe erosion potential
- Protection of important dispersed recreational areas; this stipulation would be applied to minimize the potential for adverse impacts on recreational values, both motorized and nonmotorized, and the natural settings associated with the recreation
- Viewsheds with a Scenery Management System integrity level of very high and high

Approximately 122,600 acres of NFS lands would be available for leasing under Alternative 4, subject to CSU stipulations. Of these lands, approximately 78,200 acres are subject to NSO stipulations.

#### *Timing Limitations*

TLs would apply as appropriate to the following areas:

- Mexican spotted owl designated protected activity centers—Drilling and construction would be prohibited between March 1 and August 31.
- Northern goshawk designated post-fledging areas—Drilling and construction would be prohibited between March 1 and September 30.

- Peregrine falcon eyrie nesting areas—Drilling and construction would be prohibited between March 1 and August 15.
- Elk calving areas—Drilling and construction would be prohibited between June 1 and July 31.

Approximately 42,200 acres of NFS lands would be available to leasing under Alternative 4, subject to TL stipulations. Of these lands, approximately 36,900 acres are also subject to CSU stipulations, and approximately 41,800 acres are also subject to NSO stipulations.

*Standard Lease Terms and Conditions*

Under Alternative 4, approximately 3,800 acres would be open to leasing, subject to standard lease terms and conditions; that is, they would not be subject to closures or NSO, CSU, or TL stipulations, as described above.

*Notice to Lessee*

The notice to lessee of no vegetation clearing between May 15 and July 31 would be applied in migratory bird nesting areas.

*Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 4, Development Alternative*

A summary of the acres open and closed to geothermal leasing under Alternative 4, the Development Alternative, is provided below in **Table 5-2**. This information is also found in the FEIS, in Table 2-1.

<b>Table 5-2. Summary of Acres Open and Closed to Geothermal Leasing Under Alternative 4<sup>1,2</sup></b>	
<b>Allocation</b>	<b>Alternative 2 Acres/Percent of Decision Area</b>
Closed to geothermal leasing	28,900/17%
Open to geothermal leasing subject to NSO stipulations	122,500/73%
Open to geothermal leasing subject to CSU stipulations	122,600/73%
Open to geothermal leasing subject to TLs	42,200/25%
Open to geothermal leasing subject to standard lease terms and conditions	3,800/2%
Available for surface occupancy <sup>3</sup>	17,200/10% (largest parcel = 1,900 acres)

<sup>1</sup>NSO, CSU, and TLs do not overlap areas closed to leasing.

<sup>2</sup>Multiple NSO, CSU, and TLs overlap each other; and all would apply. Exceptions, modifications, or waivers may be applied to some stipulations.

<sup>3</sup>Lands that are neither closed to leasing nor subject to NSO stipulations are considered available for surface occupancy.

## 5.2 Alternatives Considered but Eliminated from Detailed Study

Some alternatives were considered but eliminated from detailed study. These alternatives included a reduced project area; an enlarged project area; an alternative with stipulations and no exceptions, waivers, or modifications; compensatory off-site mitigation; and an alternative focused on Wilderness protection. A more detailed discussion of these alternatives and rationale

for why they were eliminated from detailed study appears in the FEIS (Section 2.4, Alternatives Considered but Eliminated from Detailed Study).

## 6.0 Public Involvement and Agency Collaboration

### 6.1 Public Scoping

The formal public scoping comment period, as required by NEPA (40 CFR, Subpart 1501.7), began on May 13, 2015, and ended on June 26, 2015. Scoping included the following:

- NOI published in the *Federal Register* on May 13, 2015
- Media outreach, including press releases and project website (<http://www.fs.usda.gov/project/?project=46886>)
- Scoping letter mailed to those on the project mailing list, including federal, state, and local agencies, Native American tribes, special interest groups, and landowners
- Public scoping meetings

The NOI published was entitled Santa Fe National Forest; New Mexico; Geothermal Leasing. It noted that comments concerning the scope of the analysis must be received by June 12, 2015 (on June 8, 2015, the SFNF issued a news release indicating the scoping period was extended to June 26). The NOI also provided an overview of the Proposed Action, purpose and need for the project, and instructions for submitting comments.

The SFNF issued a press release on May 13, 2015, announcing its intent to prepare an EIS. The press release included a link to the NOI, which was published that day. On May 26, 2015, the SFNF issued a second press release that included dates, times, and locations for the two scheduled public scoping meetings, as well as information on how written comments could be submitted. On June 8, 2015, a third press release was issued indicating the SFNF had extended the deadline for public comments on the scope of the environmental analysis from June 12 to June 26, 2015, to give the public more time to submit comments on the proposed project.

On May 22, 2015, the SFNF emailed a scoping letter and scoping document to federal, state, and local agencies, special interest groups, landowners, and other interested individuals. Hard copies of the scoping letter were also mailed to individuals with no email address on file. The scoping letter provided a brief overview of the project and included dates and locations of the two public meetings and instructions for submitting written comments. The scoping document provided a more detailed description of the project: leasing background information, purpose and need for action, decision to be made, preliminary issues, scoping process, analysis process, and figures showing the project area and proposed closures.

Public scoping meetings were held on June 1, in Cuba, New Mexico, and on June 2 in Santa Fe. Forest Service staff were available at the meetings to answer questions from attendees, who were encouraged to submit written comments so that their concerns could be accurately conveyed and formally addressed in the EIS. Comment forms were available at the meetings for attendees to fill out and either submit at the meeting or mail in later.

Results of the public scoping are discussed in detail in the scoping report posted on the project website (<https://www.fs.usda.gov/project/?project=46886>).

The Notice of Availability for the DEIS was published in the *Federal Register* on July 8, 2016 (81 *Federal Register* 44608). The opportunity for providing comments to establish eligibility to object under 36 CFR, Subpart 219.52, was originally scheduled to end August 22, 2016, 45 days following the Notice of Availability. The Forest Service extended the comment period to October 28, 2016, and a *Federal Register* amended notice was published on July 29, 2016 (81 *Federal Register* 49982).

The SFNF received comments by mail, fax, and email and at public meetings. It recognizes that commenters invested considerable time and effort to submit comments on the DEIS; as such, it developed a comment analysis method to ensure that all comments were considered, as directed by NEPA regulations.

The SFNF developed a systematic process for responding to comments to ensure that all were tracked and considered. On receipt, each comment letter was assigned an identification number and logged into a tracking database. This allowed the SFNF to organize, categorize, and respond to comments, which were coded by appropriate categories, based on the content of the comment.

Similar comments were grouped under a topic heading. The SFNF then drafted a statement summarizing the issues contained in each group of comments. The responses were crafted to respond to the comments and to note whether a change to the EIS was warranted. (See Appendix F, Summary of Public Comments, in the FEIS.)

## 6.2 Tribal Consultation

The Forest Service consults on a government-to-government basis with Native American tribes. Consultation and coordination with Native American tribal governments are ongoing.

Federal agencies must consult with Native American tribes to identify TCPs, sacred sites, and properties of religious or cultural significance. The SFNF sent letters to tribal leaders and Tribal Historic Preservation Officers, describing the scope of the project and inviting them to participate as consulting parties, under the Section 106 consultation process.

The SFNF invited the following federally recognized tribes in the region to consult on the EIS:

- Pueblo of Acoma
- Pueblo of Isleta
- Kewa Pueblo (Pueblo of Santa Domingo)
- Pueblo of Nambé
- Pueblo of Cochiti
- Pueblo of Jemez
- Pueblo of Laguna
- Ohkay Owingeh
- Pueblo of Picuris
- Pueblo de San Ildefonso
- Pueblo of Santa Clara
- Pueblo of Pojoaque
- Pueblo of San Felipe
- Pueblo of Santa Ana
- Pueblo of Taos; Pueblo of Tesuque
- Pueblo of Zia
- Pueblo of Zuni
- Jicarilla Apache Nation
- Ojo Encino Navajo Chapter House
- Pueblo Pintado Navajo Chapter House
- Canoncito Navajo Chapter House
- Ramah Navajo Chapter House

- Counselor Navajo Chapter House
- Crownpoint Navajo Chapter House
- Torreon Navajo Chapter House
- Whitehorse Lake Navajo Chapter House
- Mescalero Apache Tribe
- The Hopi Tribe
- The Navajo Nation
- Southern Ute Tribe
- Ute Mountain Ute Tribe

The SFNF began consultation before the formal scoping period by mailing a briefing paper to tribes on October 14, 2014. It provided an overview of the project and its status. Additionally, meetings were held with tribes in October 2014, to present information related to the project and answer questions. The SFNF held meetings with the following tribes:

- Pueblo of Jemez
- Pueblo of Zia
- Pueblo of Cochiti
- Pueblo of Santo Domingo
- Pueblo de San Ildefonso
- Ohkay Owingeh
- Pueblo of Santa Clara
- Jicarilla Apache Nation
- Counselor Navajo Chapter House
- Torreon Navajo Chapter House

Tribal scoping letters were sent to the tribes, describing the project, date, and times of the public meetings and requesting consultation. The SFNF requested information on issues or concerns with the project and historic properties in the project area under Section 106 of the NHPA. The agency held meetings with the Pueblos of San Felipe and Santa Clara in July and September 2015, and it has continued to honor its obligation to consult on a government-to-government basis. The SFNF held listening sessions with tribal leaders and the Forest Supervisor on October 12, 2016, and May 24, 2017. On both occasions, over 30 tribal officials attended to express their unanimous opposition to this project. Many of these officials referenced the All Pueblo Council of Governors Resolution from 2015 (Resolution No. APCG 2015-11) to close the Santa Fe National Forest to energy and mineral exploration and development.

The SFNF also conducted an ethnographic overview and assessed traditional and current land uses by Native Americans and other communities. The SFNF worked with descendants of Native Americans and Hispanic land grant recipients, who had occupied portions of the Jemez Mountains and adjacent areas prehistorically and historically. In these areas they had maintained traditional cultural resources and practices associated with those resources.

### 6.3 Cooperating Agency Consultation

The BLM and NPS served as cooperating agencies during preparation of the EIS. Subsections 1501.6 and 1508.5 of 40 CFR of the CEQ regulations address cooperating agencies, which are federal agencies other than a lead agency; they have jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal or reasonable alternative. As cooperating agencies, the BLM and NPS participated in the scoping process, reviewed and provided comments on the specialist reports, reviewed the DEIS before its public release, and reviewed draft responses to comments received during the comment period.

## 7.0 Findings Required by Laws, Regulations, Policy, and Direction

This decision is to amend the Forest Plan to implement discretionary closures to geothermal leasing on all lands in the project area not already closed to leasing. It is consistent with the intent of the Forest Plan's long-term goals and objectives described in the EIS, Appendix A, Management Areas and Prescriptions from Forest Plan. This decision is consistent with federal laws and regulations, as described below.

### 7.1 Clean Air Act

The Clean Air Act of 1970 was passed to regulate air pollution and improve air quality. It regulates air emissions from area, stationary, and mobile sources. This law also authorizes the EPA to establish the National Ambient Air Quality Standards to protect public health and the environment.

The decision to implement the selected action (Alternative 3) and to amend the 1987 Forest Plan would not result in air emissions; therefore, I find that the selected action would meet the provisions of the Clean Air Act.

### 7.2 Clean Water Act

The Clean Water Act of 1972 established the basic structure for regulating discharges of pollutants into Waters of the United States. Also included are requirements to set water quality standards for all contaminants in surface waters. The Clean Water Act made it unlawful for any person to discharge any pollutant from a point source into navigable waters without first obtaining a permit under its provision.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in any discharges of pollutants into Waters of the United States. There would be no certification or permit requirements for geothermal leasing, as no geothermal leasing would occur; therefore, I find that the selected action would meet the provisions of the Clean Water Act.

### 7.3 Endangered Species Act

The ESA protects federal threatened plants, insects, fish, and wildlife. The US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration National Marine Fisheries Service administer the ESA, on behalf of the United States. The major components of the ESA are as follows:

- Provisions for listing threatened and endangered species
- The requirement for consultation with the USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service on federal projects, under certain circumstances
- Prohibitions against taking listed species
- Provisions for permits to allow the incidental taking of listed species

Under Section 7 of the ESA, federal agencies must consult with the USFWS when any action the agency carries out, funds, or authorizes may affect a listed endangered or threatened species. The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan does

not require consultation with the USFWS. This is because no future geothermal leasing or development would occur in the project area; therefore, I find that the selected action meets the provisions of the ESA.

## 7.4 Energy Policy Act

The Energy Policy Act of 2005 encourages leasing and developing geothermal resources on federal lands. Specifically, Section 225 requires that the Secretaries of the Interior and Agriculture establish a program for reducing by 90 percent the backlog of geothermal lease applications that were pending as of January 1, 2005. In addition, Section 222 modified the Geothermal Steam Act to allow only competitive lease sales for all federal geothermal resources, except under certain conditions. The Energy Policy Act also amended the Geothermal Steam Act with regard to royalties and rental fees.

The SFNF is mandated by the Energy Policy Act of 2005 to complete administrative actions necessary to respond to applications for geothermal leasing in a timely manner. The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan complies with the Energy Policy Act. It does this by allowing the Forest Service to respond to any future lease applications in a timely manner; for example, future lease nominations or applications in the project area would yield a non-consent decision; therefore, I find the selected action meets the provisions of the Energy Policy Act.

## 7.5 Federal Land Policy and Management Act

The FLPMA mandates that multiple use and sustained yield principles govern the management of public lands. The concept of multiple use directs the BLM to manage public lands to best meet the present and future needs of the American people. The FLPMA Section 103 defines multiple use as “a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources”; it defines sustained yield as “the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the public lands consistent with multiple use.”

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would exclude future geothermal leasing from the project area on NFS lands. However, the selected action does not preclude other resource uses, including range, timber, and other mineral leasing; therefore, I find the selected action meets the provisions of the FLPMA.

## 7.6 Geothermal Steam Act

The Geothermal Steam Act of 1970, as amended, governs the leasing of geothermal steam and related resources on federal lands. It authorizes the Secretary of the Interior to issue leases for developing geothermal resources and prohibits leasing on a variety of public lands, such as those administered by the USFWS.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would exclude future geothermal leasing from the project area on NFS lands; therefore, the provisions in the Geothermal Steam Act as they relate to leasing procedures, rents and royalties, lease term and work commitment requirements, and other related procedures would not be applicable, and I find the selected action complies with the Geothermal Steam Act.

## 7.7 Geothermal Resource Leasing, 43 CFR, Part 3200

Geothermal Resource Leasing, at 43 CFR, Part 3200, provides statutory guidance for geothermal leasing by the BLM. These statutes describe what lands are available or unavailable for geothermal leasing. They also describe requirements for all phases of geothermal development.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in future geothermal leasing on NFS lands in the project area; therefore, there would be no future geothermal leasing or development that the provisions in 43 CFR, Part 3200, would apply to. I find the selected action complies with 43 CFR, Part 3200.

## 7.8 Geothermal Resource Unit Agreements, 43 CFR, Part 3280

Geothermal Resource Unit Agreements at 43 CFR, Part 3280, identifies the procedures that a prospective unit operator must follow to receive BLM approval for the following: unit area designation and a federal geothermal unit agreement; operational requirements once the unit agreement is approved; and BLM procedures in reviewing, approving, and administering a federal geothermal unit agreement.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in future geothermal leasing on NFS lands in the project area; therefore, there would be no future geothermal leasing or development that the provisions in 43 CFR, Part 3280, would apply to. I find the selected action complies with 43 CFR, Part 3280.

## 7.9 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. Executive Order 13186, signed January 10, 2001, sets forth the responsibilities of federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices into agency activities. This is to ensure that the proponents of federal actions evaluate the impacts of actions and agency plans on migratory birds.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in any impacts on fish and wildlife, including migratory birds, as documented in the FEIS (Section 3.12.2.6); therefore, I find the selected action meets the provisions of the MBTA.

## 7.10 Mining and Mineral Policy Act

The Mining and Mineral Policy Act of 1970 maintains that “it is the continuing policy of the federal government in the national interest to foster and encourage...the orderly and economic development of domestic mineral resources....”

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would exclude future geothermal leasing from the project area on NFS lands. However, this decision alone would not preclude other types of mineral development in the project area and elsewhere; therefore, I find the selected action complies with the provisions of the Mining and Mineral Policy Act.



---

## 7.11 National Environmental Policy Act

NEPA supports a national policy that requires federal agencies to review the effects of their actions on the quality of the human environment. The review process ensures that the environmental impacts of any federal or federally funded action are available to public officials and citizens before decisions are made and actions are taken.

To meet the requirements under NEPA, the SFNF has prepared the Santa Fe National Forest Geothermal Leasing FEIS. I find that the FEIS complies with the procedural and analytical requirements of NEPA.

## 7.12 National Forest Management Act

The National Forest Management Act of 1976 is the primary statute governing the administration of national forests. It expanded and otherwise amended the Forest and Rangeland Renewable Resources Planning Act of 1974, which called for managing renewable resources on national forests. The National Forest Management Act requires the Secretary of Agriculture to assess forest lands, to develop a management program based on multiple-use and sustained-yield principles, and to implement a resource management plan for each unit of the NFS. In doing so, the Secretary must use an interdisciplinary approach; coordinate with state and local resource management efforts; provide for public participation; and provide for multiple use and sustained-yield of products and services. The Secretary must revise the management plans whenever significant changes occur in a unit.

The selected action (and all action alternatives) remained inconsistent with the 1987 Forest Plan. This is because it does not address geothermal leasing; therefore, amending the 1987 Forest Plan is necessary. The amendment will make the selected action consistent with the Forest Plan; therefore, I find the selected action complies with the National Forest Management Act.

## 7.13 National Historic Preservation Act

The NHPA provides for the establishment of the NRHP to include such historic properties as districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, and culture. Section 106 of the NHPA requires federal agencies with jurisdiction over a proposed federal project to take into account the effect of the undertaking on cultural resources listed on or eligible for listing on the NRHP. It affords State Historic Preservation Officers and the Advisory Council on Historic Preservation an opportunity to comment on an undertaking. The NRHP eligibility criteria have been defined by the Secretary of the Interior's Standards for Evaluation (36 CFR, Part 60).

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would have no impacts on cultural resources, as documented in the FEIS (Section 3.16.2.5); therefore, I find the selected action complies with the NHPA.

## 7.14 Organic Administration Act

The Organic Administration Act of 1897 authorizes the Secretary of Agriculture to promulgate rules and regulations for the use and occupancy of National Forests.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan does not promulgate any new rules or regulations. I find the selected action complies with the Organic Administration Act.

## 7.15 Public Rangelands Improvement Act

The Public Rangelands Improvement Act of 1978 requires the BLM to manage, maintain, and improve the condition of the public rangelands so that they become as productive as feasible.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would have no impacts on livestock or livestock operations. I find the selected action complies with the Public Rangelands Improvement Act.

## 7.16 New Mexico Geothermal Resources Development Act

The New Mexico Geothermal Resources Development Act provides for the development, regulation, and conservation of geothermal resources. The Oil Conservation Division of the Energy, Minerals, and Natural Resources Department and the Oil Conservation Commission are responsible for administering laws and regulations relating to geothermal resources, related appropriations, money, and records. The New Mexico Geothermal Resources Development Act transfers this responsibility to the Energy Conservation and Management Division of Energy, Minerals, and Natural Resources Department.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in future geothermal leasing on NFS lands in the project area; therefore, there would be no future geothermal leasing or development that the provisions in the New Mexico Geothermal Resources Development Act would apply to. I find the selected action complies with the New Mexico Geothermal Resource Development Act.

## 7.17 New Mexico Administrative Code, Chapter 71, Article 9

New Mexico Administrative Code, Chapter 71, Article 9, provides rules and regulations adopted by the Oil Conservation Division of the Energy, Minerals and Natural Resources Department for conserving natural geothermal resources, preventing waste, and protecting the correlative rights of geothermal resource owners.

The decision to implement the selected action (Alternative 3) and amend the 1987 Forest Plan would not result in future geothermal leasing on NFS lands in the project area; therefore, there would be no future geothermal leasing or development that the provisions in New Mexico Administrative Code, Chapter 71, Article 9, would apply to. I find the selected action complies with New Mexico Administrative Code, Chapter 71, Article 9.

## 8.0 Best Available Scientific Information

The interdisciplinary team reviewed the information available concerning the issues analyzed in the EIS. Team members determined what information was most accurate, reliable, and relevant to disclosing the effects of the alternatives. That information is cited in the FEIS and represents the best available scientific information.

In this context, available information is that information currently available in a form useful for the planning process, without further data collection, modification, or validation. This included information submitted by cooperating agencies, other government agencies, tribes, and the public.

The best available scientific information was used to disclose the affected environment and environmental consequences, as documented in the extensive reference section in the FEIS (Chapter 6).

In preparing the EIS, the Forest Service considered and analyzed all information submitted by the public; however, information that was irrelevant to the scope of the EIS or that reflected an unsupported opinion was not considered best available scientific information.

In addition, as background information for the DEIS, the Forest Service prepared resource specialist reports for biological resources, inventoried roadless areas, soil and water resources, air quality, and cultural resources. In preparing these documents, the Forest Service also conducted a literature review. Sources that were reviewed included scientific journal articles, Geographic Information System (GIS) data from the Forest Service and other agencies, technical reports, other planning documents, and the RFDS. Draft copies of the supporting resources reports and EIS were circulated through the interdisciplinary team to ensure data sources were accurate and reliable and represented the best available scientific information.

I find that this information constitutes the best available scientific information relevant to this project and plan amendment.

## 9.0 Effective Date

No concerns or instructions were identified by the reviewing officer in the objection response (§219.58).

The Forest Plan Amendment for the Geothermal Leasing Project will become effective 30 days after publication of the legal notice of my amendment approval the Federal Register and in the Santa Fe National Forest newspaper of record, Albuquerque Journal (§219.17(a)(1)).

## 10.0 Project Information


For additional information concerning this decision contact

James E. Melonas  
Forest Supervisor  
Santa Fe National Forest  
11 Forest Lane  
Santa Fe, New Mexico 87508  
(505) 438-5300  
[jmelonas@fs.fed.us](mailto:jmelonas@fs.fed.us)

or

Larry Gore  
Geologist  
Santa Fe National Forest  
04B County Road 11  
Santa Fe, New Mexico 87013  
(575) 289-3264 ext. 2149  
[ldgore@fs.fed.us](mailto:ldgore@fs.fed.us)

## 11.0 Signature and Date



---

JAMES E. MELONAS  
Forest Supervisor  
Santa Fe National Forest

13 JUNE 2018

---

DATE