

**MINUTE ITEM**  
This Calendar Item No. C56 was approved as  
Minute Item No. C56 by the California State Lands  
Commission by a vote of 3 to 0 at its  
8/24/06 meeting.

**CALENDAR ITEM  
C56**

A 1  
S 2

08/24/06  
PRC 8556.2  
D. Dudak

**CONSIDER APPROVAL OF THE AMENDMENT OF  
STATE GEOTHERMAL RESOURCES LEASE NO. PRC 8556.2 TO  
PROVIDE FOR THE DRILLING OF GEOTHERMAL WELLS,  
THE GEYSERS GEOTHERMAL FIELD,  
SONOMA AND MENDOCINO COUNTIES**

**LESSEE:**

Geysers Power Company, LLC  
Attn: Mr. Kevin Talkington  
10350 Socrates Mine Road  
Middletown, CA 95461

**AREA, LAND TYPE, AND LOCATION:**

Approximately 1,881.43 acres of State 100 percent (100%) reserved mineral interest School Lands at The Geysers Geothermal Field, Sonoma and Mendocino Counties.

**BACKGROUND:**

State Geothermal Resources Lease No. PRC 8556.2 (Lease) was issued to WHR, Inc., owner of the surface estate, and then assigned to Geysers Power Company, LLC (Lessee), both actions effective September 1, 2004. Lessee holds all seven of the State's geothermal leases at The Geysers, and is a wholly-owned subsidiary of Calpine Corporation. Lessee utilizes geothermal resources from State, Federal, and private leaseholds to generate approximately 1,000 megawatts of electricity. The seven State leases cover 6,635 acres and yield more than \$5 million per year in royalty and net profit revenues, however, this lease is currently not developed and not producing. Pursuant to Public Resources Code section 6217.5, revenue derived from State School Lands benefits the State Teachers' Retirement Fund.

The Lease was granted for a primary term of seven years, subject to the requirement that the Lessee commence drilling operations within the first three years. The Lease originally included 1,657.43 acres of State reserved mineral

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interest lands subdivided into three parcels, identified as Parcels 1, 2, and 3, and shown on Exhibit A, attached hereto. The leased land was subdivided to prevent discontinuous tracts of land from being held beyond the primary term by virtue of a single commercial well on one tract. If any parcel is not producing, or capable of producing, at the end of the Lease's seven-year primary term, then the Lease expires with respect to that parcel. An adjacent tract of State reserved mineral interest land was added to the Lease as Parcel 4 through an amendment to the Lease effective May 1, 2005. Parcel 4 covers 224.00 acres and is also shown on Exhibit A, attached hereto.

The Lease, as originally issued, allows Lessee to drill up to three exploratory wells into Parcels 2 and 3. Any subsequent development drilling or utilization of geothermal resources requires subsequent Commission approval. The 2005 amendment authorized drilling into Parcel 4 from existing drill sites on adjacent private lands controlled by the Lessee, and authorized utilization of geothermal resources from the added lands at Lessee's Aidlin Power Plant.

**LEASE STATUS:**

On December 20, 2005, Calpine Corporation and over 200 subsidiaries, including Lessee (collectively referred to as "Debtors") filed for protection under Chapter 11 of the Bankruptcy Code. On May 24, 2006, Calpine Corporation filed a motion authorizing Lessee to assume all of its geothermal leases and related obligations.

As a result, although the parent company, Calpine Corporation and related subsidiaries are undergoing restructuring efforts, Geysers Power Company, has continued its geothermal operations without noticeable curtailment of steam production and electrical generation. Lessee has fully paid all rentals and royalties due under the terms of its State leases and remains in good standing with the State.

**APPLICATION FOR AMENDMENT:**

Lessee has submitted an application to amend the Lease for the purpose of drilling development wells and utilizing geothermal resources from Parcels 1, 2, and 3. The drilling and utilization of State resources would be part of a larger development planned by Lessee, which would also involve tracts of private land adjacent to Parcels 1, 2, and 3. Up to 58 geothermal wells would be drilled from 14 existing drill sites. Lessee would use existing access roads, some of which may require maintenance or widening. Lessee would install up to 29,000 feet of 36-inch diameter pipe to transport geothermal resources to an existing gathering system that supplies several existing geothermal power plants owned by Lessee.

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Lessee would also install up to 19,000 feet of 12-inch diameter pipe to transport condensed steam and reclaimed wastewater to injection wells that will replenish the geothermal reservoir. Most of the pipelines would be installed along previously-approved routes. The development plan would be implemented in accordance with the terms and limitations of Sonoma County Use Permit UPE05-0114, and terms and conditions of the Lease itself. The portion of Lessee's overall development plan that directly involves Parcels 1, 2, and 3 comprises approximately half of the 58 proposed wells from half of the 14 drill sites. However, the actual number of wells ultimately drilled will likely be less. Similarly, roughly half of the production and injection pipelines planned for the development project will directly involve Parcels 1, 2, and 3.

Subject Lease does not currently generate royalty revenue to the State. The proposed development will provide royalty revenue from not only the subject Lease, where the State owns a 100 percent (100%) reserved mineral interest, but also from an adjacent parcel where the State owns a one-sixteenth (1/16) reserved mineral interest. In addition to the royalty revenue, the proposed development will also help with California's goal for increased generation of electricity from non-fossil fuel, renewable sources.

**AMENDMENT TERMS:**

The amendment to the Lease will authorize Lessee to drill into Parcels 1, 2, and 3, and utilize resulting geothermal resources at existing geothermal power plants in accordance with Sonoma County Use Permit UPE05-0114. All other material terms and conditions of the Lease remain unchanged.

**STATUTORY AND OTHER REFERENCES:**

- A. Public Resources Code sections: Division 6, Parts 1 and 2; Division 13.
- B. California Code of Regulations, sections: Title 2, Division 3; Title 14.

**OTHER PERTINENT INFORMATION:**

- 1. The Sonoma County Permit and Resource Management Department prepared a "Subsequent Mitigated Negative Declaration" for the Wildhorse Development Project (Project) that was tiered upon, among others, the Program Environmental Impact Report (PEIR) for the Incremental Recycled Water Program that was certified by the city of Santa Rosa in October 2003. The City subsequently certified an Addendum to the PEIR in March 2004. The Subsequent Mitigated Negative Declaration was prepared by the County, "to analyze site-specific effects which (1) were not examined as significant effects on the environment in the PEIR or (2)

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are susceptible to substantial reduction or avoidance by the choice of specific project revisions, the imposition of conditions, or other means.”

2. Although the County determined that, pursuant to the provisions of Public Resources Code section 21166 (the CEQA), the use of the PEIR with the Subsequent Mitigated Negative Declaration is appropriate, it recognized that ,”The Proposed Project may have a cumulative environmental impact on increasing seismic events that cannot be fully avoided or mitigated to a less-than-significant level.” Accordingly, the County adopted a Statement of Overriding Considerations in conjunction with its adoption of the Subsequent Mitigated Negative Declaration and Mitigation Monitoring Program for the Project. The staff of the Commission has reviewed such documents.
3. This activity involves lands which have NOT been identified as possessing significant environmental values pursuant to Public Resources Code sections 6370, et seq. However, the Commission has declared that all state school lands and submerged lands are “significant” by nature of their public ownership (as opposed to “environmentally significant”). Since such declaration of significance is not based upon the requirements and criteria of Public Resources Code sections 6370, et seq., use classifications for such lands have not been designated. Therefore, the finding of the project’s consistency with the use classification as required by Title 2, California Code of Regulations, section 2954 is not applicable.

**EXHIBITS:**

- A. Location Map
- B. County of Sonoma Resolution Number 06-011.

**PERMIT STREAMLINING ACT DEADLINE:**

November 7, 2006 (CSLC acting as a responsible agency under the CEQA).

**RECOMMENDED ACTION:**

IT IS RECOMMENDED THAT THE COMMISSION:

**CEQA FINDING:**

1. FIND THAT A SUBSEQUENT MITIGATED NEGATIVE DECLARATION WAS PREPARED AND ADOPTED FOR THIS PROJECT BY THE SONOMA COUNTY PERMIT AND RESOURCE MANAGEMENT DEPARTMENT AND THAT THE

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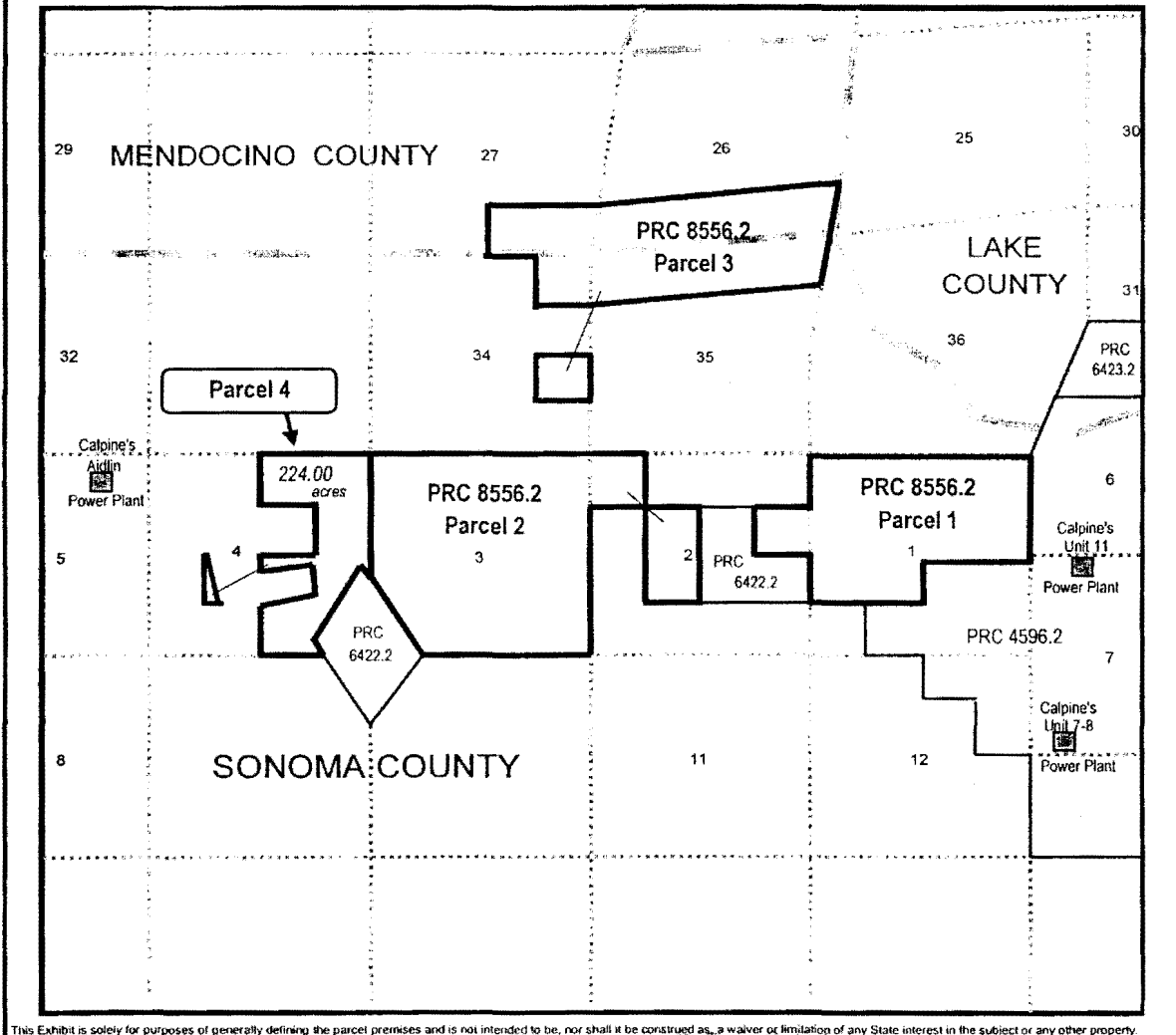
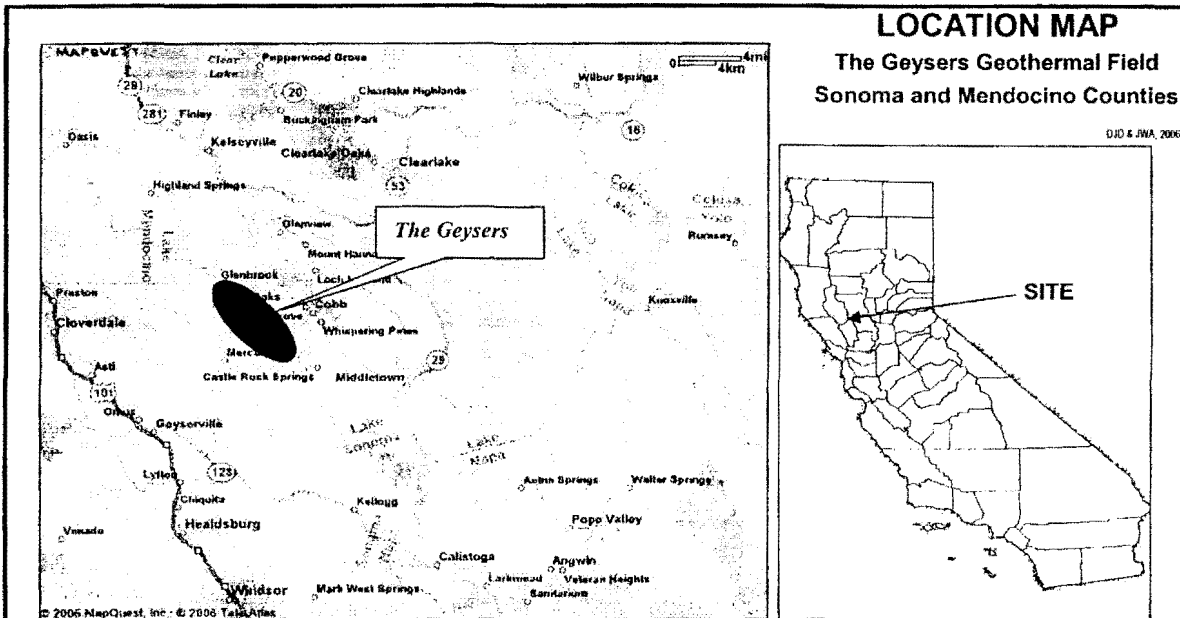
COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. ADOPT THE STATEMENT OF OVERRIDING CONSIDERATIONS AND THE MITIGATION MONITORING PROGRAM AS CONTAINED IN COUNTY OF SONOMA RESOLUTION NUMBER 06-011 AS CONTAINED IN EXHIBIT B ATTACHED HERETO.

**AUTHORIZATION:**

1. AUTHORIZE THE AMENDMENT OF STATE GEOTHERMAL RESOURCES LEASE NO. PRC 8556.2 UPON THE TERMS AND CONDITIONS OUTLINED IN THIS CALENDAR ITEM AND IN THE FORM ON FILE IN THE LONG BEACH OFFICE OF THE COMMISSION, THE AMENDMENT TO PROVIDE FOR APPROVAL OF THE DRILLING OF GEOTHERMAL WELLS INTO PARCELS 1, 2, AND 3 FROM APPROVED DRILL SITES, CONSTRUCTION OF ACCESS CORRIDORS FOR STEAM PIPELINES, ROADS AND OTHER APPURTENANT FACILITIES FOR THE PRODUCTION OF GEOTHERMAL RESOURCES.
2. AUTHORIZE THE EXECUTIVE OFFICER OR HIS DESIGNEE TO EXECUTE ANY DOCUMENTS NECESSARY TO IMPLEMENT THE COMMISSION'S ACTION.

EXHIBIT A



This Exhibit is solely for purposes of generally defining the parcel premises and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

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**EXHIBIT B**

PRC 8556.2

Resolution Number 06-011

County of Sonoma  
Santa Rosa, California

May 11, 2006  
UPE05-0114 Sigrid Swedenborg

**RESOLUTION OF THE BOARD OF ZONING ADJUSTMENTS,  
COUNTY OF SONOMA, STATE OF CALIFORNIA, ADOPTING A  
SUBSEQUENT MITIGATED NEGATIVE DECLARATION AND  
GRANTING A USE PERMIT TO GEYSERS POWER COMPANY  
LLC.**

WHEREAS, the applicant, Geysers Power Company LLC, filed a Use Permit application with the Sonoma County Permit and Resource Management Department Permit to drill up to 58 geothermal wells from up to 14 existing drill pads and construct up to 29,000 feet of access corridors for steam pipelines, roads, associated electrical distribution (21KV), and other appurtenant facilities to connect the producing and injection wells to existing geothermal infrastructure and power plant Units 11 and 17 located at 7000 Geysers Road, Cloverdale; APN APNs 117-200-003 & -004 117-210-004, -007, -014; Zoned RRDWA (Resources and Rural Development/Agricultural Preserve), B6, 320 ; Supervisorial District No 4; and

WHEREAS, in October of 2003 the City of Santa Rosa certified a program environmental impact report analyzing the Incremental Recycled Water Program (the IRWP EIR). The IRWP EIR identified and analyzed a series of alternatives, including an expansion of the Geysers steamfield to increase recycled water delivery and injection from 11 to 25 million gallons per day (mgd). The IRWP EIR noted that as part of this alternative, up to seven miles of aboveground pipelines would be needed to convey the additional recycled water. The IRWP EIR analyzed the potential environmental effects of these pipelines at a program level; and

WHEREAS, in March of 2004, the City of Santa Rosa certified an Addendum to the PEIR, to adopt the IRWP Master Plan; and

WHEREAS, Subsequent Mitigated Negative Declaration was prepared to analyze site-specific effects which (1) were not examined as significant effects on the environment in the PEIR or (2) are susceptible to substantial reduction or avoidance by the choice of specific project revisions, the imposition or conditions, or other means and;

WHEREAS, the Subsequent Mitigated Negative Declaration was prepared and posted for the proposed project in accordance with the appropriate law and guidelines; and

WHEREAS, in accordance with the provisions of law, the Board of Zoning Adjustments held a public hearing on May 11, 2006, at which time all interested persons were given an opportunity to be heard; and

WHEREAS, said Board makes the following findings:

1. The proposal is consistent with the General Plan land use designation of Resource and Rural Development which lists management of geothermal resources as a permitted use.
2. The proposal is consistent with the Resource and Rural Development, Williamson Act zoning, which allows, if a Use Permit is obtained, for the development, exploration and development of geothermal resources, including geothermal energy wells, pipelines, transmission facilities and associated grading and construction, when conducted within

the primary KGRA (Known Geothermal Resources Area). The project is within the KGRA.

3. The proposal is consistent with the Sonoma County Rules and Regulations for Administration of Agricultural Preserves, Type A-II, which includes allowances for geothermal steam well drilling and the structures, fixtures and equipment for geothermal generation of electricity from steam sources on or under the land on which they are situated.
4. The establishment, maintenance or operation of the use for which application is made will not, under the circumstances of this particular case, be detrimental to the health, safety, peace, comfort and general welfare of persons residing or working in the neighborhood of such use, nor be detrimental or injurious to property and improvements in the neighborhood or the general welfare of the area. The particular circumstances in this case are: (a) Traffic generated by the use will not have a significant effect on local public roads; (b) Potential noise impacts will be insignificant due to the approximate distance of over 2000 feet to the closest receptors; and (c) The roads and pipelines will not be visible from public viewsheds.

WHEREAS, pursuant to Section 21081 of CEQA and Section 15091 et seq. of the State CEQA Guidelines, the Board finds and determines as follows and makes the following Statement of Overriding Considerations:

1. There is no substantial evidence that either the potentially significant impacts of the project or the mitigation measures identified in the initial study for those impacts, which are included in the Conditions of Approval, would involve new environmental effects, increase the severity of previously identified effects, or result in changed circumstances which would require major revisions of the PEIR or require preparation of an additional environmental impact report for the project under Public Resources Code section 21166 or related provisions of the State CEQA Guidelines. Therefore, the use of the PEIR with the project-specific Subsequent Mitigated Negative Declaration is appropriate and a supplemental or subsequent EIR is not required.
2. By incorporating the applicable mitigation measures described in the Program EIR for the IRWP Master Plan into the Subsequent Mitigated Negative Declaration and the Conditions of Approval of the Proposed Project, the environmental impacts of the Proposed Project have been mitigated to the greatest degree possible. The Proposed Project includes all feasible measures to reduce impacts. The Proposed Project is located in the area designated for injection under the IRWP Master Plan, complies with the applicable mitigation measures adopted for the IRWP Master Plan, and is consistent with the Master Plan. The Board therefore finds that the Proposed Project presents the best balance between the County's need for increased energy production and recycled water disposal and the environmental impacts of the Proposed Project.
3. Based on the information contained in the Initial Study and environmental documents relied upon in preparation of the Initial Study, the Subsequent Mitigated Negative Declaration has been completed in compliance with CEQA State and County guidelines and the information contained therein has been reviewed and considered.
4. The Proposed Project may have a cumulative environmental impact on increasing seismic events that cannot be fully avoided or mitigated to a less-than-significant level. This impact was thoroughly discussed and analyzed in the IRWP Program EIR, which

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also considered several different alternative management plans for providing wastewater treatment, recycling, reuse, and disposal in the Santa Rosa Subregional Water Reclamation System. The City of Santa Rosa selected the Geysers Expansion alternative as one of the components of the IRWP Master Plan because it strikes a useful balance between the need to recycle or dispose of wastewater and the environmental impacts of such use. The County hereby adopts and incorporates by reference the City of Santa Rosa Statement of Overriding Consideration adopting the IRWP Master Plan (dated March 4, 2004). To the extent feasible, mitigation measures have been included in the Conditions of Approval of the Proposed Project that will reduce or partially mitigate the Substantial Unavoidable Impact of the Proposed Project.

5. The Proposed Project will result in the following substantial public benefits:
  - (a) Increase the production of electric energy by injecting recycled water into the geothermal reservoir.
  - (b) Support the generation of renewable energy.
  - (c) Maximize the use of existing infrastructure.
  - (d) Support a feasible, cost-effective means of managing recycled water disposal in compliance with regulatory requirements.
  - (e) Create an economic benefit to the County by preserving local jobs in the energy and related industries.
  - (f) Supporting the reuse and recycling of wastewater at the Geysers will reduce the need to dispose of wastewater in other ways and reduce or eliminate the adverse environmental impacts associated with disposal by other means such as discharge to the Russian River.
6. The Board has weighed the above-described benefits of the Proposed Project against the Significant Unavoidable Impacts of the Proposed Project and has determined that these benefits outweigh the unavoidable adverse environmental effect of the Proposed Project. The Board therefore finds and determines that such Significant Unavoidable Impact of the Proposed Project is acceptable in light of the substantial benefits to the County from the Proposed Project.

NOW THEREFORE BE IT RESOLVED that the Sonoma County Board of Zoning Adjustments hereby adopts the Subsequent Mitigated Negative Declaration and mitigation monitoring program set forth in the Conditions of Approval. The Board certifies that the Subsequent Mitigated Negative Declaration has been completed, reviewed, and considered, together with comments received during the public review process, in compliance with CEQA and State and County Guidelines, and finds that the Subsequent Mitigated Negative Declaration reflects the independent judgment of the Board.

BE IT FURTHER RESOLVED that the Sonoma County Board of Zoning Adjustments hereby grants the requested Use Permit, subject to the conditions in Exhibit A, attached hereto.

BE IT FURTHER RESOLVED that the Board of Zoning Adjustments designates the Secretary as the custodian of the documents and other material which constitute the record of proceedings upon which the Board's decision herein is based. These documents may be found

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Resolution # 06-011  
May 11, 2006  
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at the office of the Sonoma County Permit and Resource Management Department, 2550  
Ventura Avenue, Santa Rosa, CA 95403.

BE IT FURTHER RESOLVED that the Sonoma County Board of Zoning Adjustment's action  
shall be final on the 11th day after the date of the resolution unless an appeal is taken.

THE FOREGOING RESOLUTION was introduced by Commissioner Alberigi, who moved its  
adoption, seconded by Commissioner Bennett, and adopted on roll call by the following vote:

Commissioner Bennett	aye
Commissioner Van Giesen	absent
Commissioner Alberigi	aye
Commissioner Furch	aye
Commissioner Cooke	aye

Ayes: 4      Noes: 0      Absent: 1      Abstain: 0

WHEREUPON, the Chairman declared the above and foregoing resolution duly adopted; and

SO ORDERED.

EXHIBIT A

Final Conditions of Approval

Date: May 11, 2006 File No.: UPE06-0114
Applicant: Geysers Power Company LLC APN: APNs 117-200-003 & -004 117-210-004, -007, -014
Address: 7000 Geysers Road, Cloverdale

Project Description: Request for a Use Permit to drill up to 58 geothermal wells from up to 14 existing drill pads and construct up to 29,000 feet of access corridors for steam pipelines, roads, associated electrical distribution (21KV), and other appurtenant facilities to connect the producing and injection wells to existing geothermal infrastructure and power plant Units 11 and 17.

Prior to commencing the use, evidence must be submitted to the file that all of the following non-operational conditions have been met.

BUILDING:

- 1. The applicant shall apply for and obtain any required building and/or grading permits from the Permit and Resource Management Department.

HEALTH:

"The conditions below have been satisfied" BY \_\_\_\_\_ DATE \_\_\_\_\_

- 2. A safe, potable water supply shall be provided and maintained in individual bottles or jugs for all personnel that are expected to be continuously on-site for more than two hours.
3. Maintain sufficient potable toilets with servicing/cleaning of at least once every seven days and equipped with hand washing capability on any work site where personnel are continuously on-site for more than four hours.
4. Comply with applicable hazardous waste generator, underground storage tank, above ground storage tank and AB2185 (hazardous materials handling) requirements and maintain any applicable permits for these programs from the Hazardous Materials Division of Sonoma County Department of Emergency Services.
5. Noise shall be controlled in accordance with the following as measured at the exterior property line of any affected residential or sensitive land use:

Maximum Exterior Noise Level Standards, dBA

Table with 3 columns: Cumulative Duration of Noise Event in any one-hour Period, Daytime (7 a.m. to 10 p.m.), and Nighttime (10 p.m. to 7 a.m.). Rows show noise levels for 30-60, 15-30, 5-15, 1-5, and 0-1 minutes.

Limit exceptions to the following:

- a. If the ambient noise level exceeds the standard, adjust the standard to equal the ambient level.
b. Reduce the applicable standards by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

- c. Reduce the applicable standards by 5 decibels if they exceed the ambient level by 10 or more decibels.
- 6. Isochronal steam testing and other steam testing may be subject to immediate closure if found to be in violation of the noise standard listed above.
- 7. The Project will adopt the following measures to minimize noise from the drill rig during drilling and testing operations where there is potential exposure to residential receptor:
  - a. Shielding of drill rig motor and air compressors: When practicable, set up the drill rig so that it acts as a barrier to shield noise from the motor and compressors from receptors.
  - b. Buffer metallic surfaces: If needed, cover V-door and drill rig floor with rubber or wood to reduce impact noise from pipes against these metal surfaces.
  - c. Enclose Rig Floor: If needed, enclose rig floor with metal panels including the V-door opening.
  - d. Muffle connection equipment: Install mufflers around pipe connection equipment such as air tuggers and winches.
  - e. Install check valve: Install a check valve in the drill string to slowly bleed off air pressure and reduce high pressure release noise.
  - f. Bleed air pressure through cyclone muffler: Reduce pressure release noise by bleeding air pressure through the blooie line rather than the rig floor.
  - g. Pipe Handling: Implement procedures for handling drill pipe that minimize contact with metal surfaces, i.e., on the V-door and catwalk.
  - h. During air drilling, the rig will be outfitted with a blooie line and cyclonic separator/muffler designed to reduce noise from the release of steam. Similarly, during well testing a portable blooie line and muffler will be utilized to reduce steam release noise.
  - i. Rig Crew training: Train all rig crews in noise awareness.

**Mitigation Measure:** Noise shall be controlled in accordance with the standards set in the Noise Element of the Sonoma County General Plan.

**Mitigation Monitoring:** Any noise complaints will be investigated by PRMD staff. If such investigation indicates the appropriate noise standard levels have been or may be exceeded, the permit holders shall be required to install, at their expense, additional professionally designed noise control measure(s). Failure to install the additional noise control measure(s) will be considered a violation of the use permit conditions. If noise complaints continue, PRMD shall investigate complaints. If violations are found, PRMD shall seek voluntary compliance from the permit holder and thereafter may initiate an enforcement action and/or revocation or modification proceedings, as appropriate.

**TRANSPORTATION AND PUBLIC WORKS:**

"The conditions below have been satisfied" BY \_\_\_\_\_ DATE \_\_\_\_\_

- 8. The transportation of equipment and materials associated with this proposal over the public roads of the County of Sonoma may be subject to a transportation permit. Contact Kevin Lopeman, Permit and Resources Management Department, (707) 565-3645, for details and fees regarding oversize loads.

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**PLANNING:**

"The conditions below have been satisfied" BY \_\_\_\_\_ DATE \_\_\_\_\_

9. This Use Permit allows the applicant to drill up to 58 geothermal wells from up to 14 existing drill pads and construct up to 29,000 feet of access corridors for steam pipelines, roads, associated electrical distribution (21KV), and other appurtenant facilities to connect the producing and injection wells to existing geothermal infrastructure and power plant Units 11 and 17. The use shall be operated in accordance with the proposal statement and site plan located in File# UPE05-0114 unless otherwise modified by these conditions.
10. The applicant shall pay all applicable development fees.
11. The applicant shall pay within five days after approval of this project to the Permit and Resource Management Department a mandatory Notice of Determination filing fee of \$35 for County Clerk processing (check shall be made payable to Sonoma County Clerk and submitted to the Permit and Resource Management Department), and
1. \_\_\_\_\_ No additional fee because the project is exempt from Fish and Game fee.
  2. \_\_\_\_\_ \$850 because an EIR was prepared, for a total of \$885.
  3.  X  \$1250 because a Negative Declaration was prepared, for a total of \$1285.

This fee must be paid or the approval of this project is not valid.

12. The applicant shall implement the following dust control measures during all construction phases:
- a. Cover hauling trucks or maintain at least two feet of freeboard.
  - b. Hydroseed or apply non-toxic soil stabilizers to inactive construction areas (previously-graded areas that are inactive for 10 days or more).
  - c. Limit traffic speeds on any unpaved roads to 15 mph.
  - d. Replant vegetation in disturbed areas as quickly as possible.
13. The applicant shall implement the following equipment emissions control programs:
- a. Reduce unnecessary idling of construction equipment.
  - b. Where possible, use newer, cleaner burning diesel-fueled construction equipment.
  - c. Properly maintain construction equipment.

14. Surveys for the following species shall be conducted prior to initiation of construction and shall be coordinated with the appropriate responsible agencies, i.e., U.S. Fish & Wildlife Service and/or California Department of Fish and Game. If target species are found to be absent from the project area, then the applicant shall obtain concurrence from the responsible agencies of that finding prior to proceeding with construction. A report documenting surveys shall be submitted to PRMD.

Sensitive Plants: Construction corridors within populations of Konocti manzanita should be held to a minimum width or re-routed if possible. Prior to construction within the population boundaries, construction zones passing through the population of Konocti manzanita should be marked by a qualified biologist. Portions of the population outside of the construction corridor should be protected with construction fencing. Potential impacts to this large population should be less than significant with these measures in place.

Birds: Yellow Warbler and Common Yellowthroat: Any work proposed within riparian woodland habitat between April 1 and August 31 should be preceded by a survey for these two birds. In the

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event that either of these species is determined to be nesting within 200 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

**Purple Martin:** Any work proposed within black oak/canyon live oak/Douglas fir habitat between April 1 and August 31 should be preceded by a survey for nests and/or colony nests of this species. In the event that this species is determined to be nesting within 200 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

**Northern Spotted Owl:** Any work proposed within Douglas fir forest should be preceded by an in-season spotted owl survey conducted pursuant to U.S. Fish and Wildlife Service protocol. In the event that spotted owls are determined to be present within the contiguous Douglas fir forest, proposed work should proceed pursuant to recommendations from the U.S. Fish and Wildlife Service following a consultation with that agency.

**Cooper's Hawk and White-tailed Kite:** Any work proposed in woodland habitat within 300 feet of Squaw Creek or Big Sulphur Creek between April 1 and August 31 should be preceded by a survey for these species. In the event that either of these species is determined to be nesting within 300 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

**Sharp-shinned Hawk:** Any work proposed in knobcone pine forest, ponderosa pine forest, Douglas fir forest, or riparian woodland, between April 1 and August 31 should be preceded by a survey for this species. In the event that the species is determined to be nesting within 300 feet of proposed construction activities, construction should be delayed until after August 31, or until fledging is completed as determined by a qualified biologist.

**Mitigation Measure:** The applicant shall submit the applicable surveys prior to commencing any construction in the areas described above between April 1 and August 31. If active nests are observed within 150 meters (500 feet) of the project site, exclusion zones may be designated. No construction activities is allowed within the exclusion zone until the following conditions have been met: a) the young have fledged from the nest, b) the birds abandon the nest on their own, c) the nest fails and the birds do not re-nest. A qualified biologist would determine if and when these conditions are met.

**Mitigation Monitoring:** PRMD staff shall review the reports and coordinate with U.S. Fish & Wildlife Service and/or California Department of Fish and Game to insure that no construction occurs until fledging is completed.

15. The applicant shall determine which injection wells are more susceptible to felt induced seismicity and decrease injection at wells that produce higher levels of felt induced seismicity and increase injection at wells located farther from residences and/or produce fewer seismic events. Success of redistribution of water and any other modifications in operations in reducing felt seismic events shall be continually evaluated so that the program can become more effective.

**Mitigation Measure:** The project operators shall prepare and submit reports to the City of Santa Rosa and the County of Sonoma twice a year. The reports shall include a description of revised operations intended to reduce felt seismic activity, time-series plots showing daily volume of injection at each well together with associated seismic event counts, and tables and plots of seismicity (magnitude 1.5 and greater) within a two kilometer control radius of injection wells. The reports shall also include tables and plots of seismicity associated with production wells, and shall evaluate seismicity in the injection well study areas both with and without consideration of the influence of production wells.

**Mitigation Monitoring:** PRMD staff shall review the reports and may consider revisions to the Use Permit if a problem is identified.

16. In order to insure against slope stability risks, one or more of the following measures, or alternative measures of equivalent effectiveness, shall be implemented, depending upon their applicability to site-specific conditions:
- a. Removal and replacement of unstable materials in an existing landslide with a stronger material.
  - b. Grading to remove loose material and provide an acceptably stable topographic configuration by terracing, reducing slope angles, and reducing the height of cut and fill slopes.
  - c. Installation of drainage facilities, such as subdrains and dewatering wells to reduce pore water pressure and reduce the risk of slope failure.
  - d. Covering steep slopes with biotechnical stabilization techniques.
  - e. Buttressing the toe of slopes to provide additional support to the slope. Where buttressing is not feasible, internal reinforcement such as a pinning system or lattice grid can be incorporated into the slope design to strengthen the slope.
  - f. Retaining walls or other external applications to strengthen slopes.
  - g. Placement of slope fencing or other material to stabilize rock fall from cut slope and mitigate hazards from falling rocks.
  - h. For above ground pipelines in the Geysers Steamfield, installation of the pipeline on a sliding support and saddle system.
  - i. Where facilities must be located in unstable areas, a slope stability monitoring system must be installed. The system may include slope inclinometers to measure changes in slope angles and piezometers to measure changes in water levels and pore water pressure that could indicate active slope movement. The monitoring system would provide advanced warning of slope failure that could damage facilities. If accelerated slope movement is detected, then immediate corrective action, such as pipe maintenance or activation of isolation valves and draining of pipeline segments, shall occur.

**Mitigation Measure:** If the project engineer identifies hazards due to unstable slopes, the engineer shall identify slope stability risks and geotechnical investigations shall be provided including engineering design and construction recommendations to stabilize slopes facilities.

**Mitigation Monitoring:** PRMD staff shall review construction plans and geotechnical reports and verify that recommendations the geotechnical engineer are incorporated into the plans.

17. In order to mitigate fire hazards, vehicles shall not park in areas where exhaust systems contact combustible materials. Water trucks and fire extinguishers shall be available on the construction site when working in high fire hazard areas to assist in quickly extinguishing any small fires. The construction manager shall have on site the phone number for the local fire department(s) and shall have a phone available when working in high fire hazard areas should additional fire fighting capabilities be required.

**Mitigation Measure:** The applicant shall remove and clear away dry, combustible vegetation from construction sites in the project area that contains substantial forest fire risks and hazards, or are very high fire hazard severity zones as defined by California Division of Forestry and Fire Protection. (Grass and other vegetation less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.)

**Mitigation Monitoring:** The Department of Emergency Services or the project manager shall inspect the site during construction to verify that these procedures are being followed.

18. Should any previously unknown historic or prehistoric resources, including but not limited to charcoal, obsidian or chert flakes, grinding bowls, shell fragments, bone, pockets of dark, friable soils, glass, metal, ceramics, wood or similar debris, be discovered during grading, trenching or other on-site excavation, earthwork in the vicinity of the find shall cease, and PRMD staff shall be notified so that the find can be evaluated by a qualified archaeologist (i.e., an archaeologist registered with the Society of Professional Archaeologists). When contacted, a member of PRMD Project Review staff and the archaeologist shall visit the site to determine the extent of the resources and to develop proper mitigation measures required for the discovery. No earthwork in the vicinity of the find shall commence until a mitigation plan is approved and completed subject to the review and approval of the archaeologist and Project Review staff. This condition shall be noted on all construction plans and provided to all contractors and superintendents on the job site.
19. If human remains are encountered, all work must stop in the immediate vicinity of the discovered remains and the County Coroner and a qualified archaeologist must be notified immediately so that an evaluation can be performed. If the remains are deemed to be Native American and prehistoric, the Native American Heritage Commission must be contacted by the Coroner so that a "Most Likely Descendant" can be designated.
20. The following standard engineering methods shall be used to substantially lessen or avoid potential impacts from expansive soils:
  - a. Removal of native soil and replacement with an engineered fill material not prone to shrinking and swelling;
  - b. Soil stabilization, such as lime treatment to alter soil properties to reduce shrink-swell potential to an acceptable level, or
  - c. Deepening footings or other support structures in the expansive soil to a depth where soil moisture fluctuation is minimized.
21. If a development well does not meet commercial production requirements and would not be suitable as a steam production or injection well, then the well shall be plugged and abandoned in conformance with CDOGGR requirements. A proposal for abandonment would be submitted to the CDOGGR for review and approval. The well pads, pipeline and access routes will be restored as required by Sonoma County PRMD, the surface landowner and any other associated permitting agencies.
22. Additional SCAMP (Squaw Creek Aquatic Monitoring Program) stations and parameters may be added if determined necessary by the California Department of Fish and Game and PRMD on an incremental basis as pipelines or access roads are constructed.
23. Rig lights must be fully shielded and focused downwards to reduce nighttime glare from the well pads during drilling operations.
24. All grading and development on site shall be done in compliance with the County Tree Protection Ordinance, including protection of trees during construction with a chain link fence at the dripline, and replacement of damaged or removed trees. The projects grading plans shall detail all tree protection implementation measures.
25. Work in the Caldwell pines area shall be limited to the footprint of the existing road, to a maximum width of 15 feet.
26. All grading and development on site shall be done in compliance with the County Tree Protection Ordinance, including protection of trees during construction with a chain link fence at the dripline, and replacement of damaged or removed trees. The projects grading and landscape plans shall detail all tree protection implementation measures.
27. At the time of submitting a building permit application, the applicant shall submit to the Permit and Resource Management Department a condition compliance review fee deposit (amount to be

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determined consistent with the ordinance in effect at the time). In addition, the applicant shall be responsible for payment of any additional compliance review fees that exceed the initial deposit (based upon hours of staff time worked) prior to final occupancy being granted.

28. The Director of PRMD is hereby authorized to modify these conditions for minor adjustments to respond to unforeseen field constraints provided that the goals of these conditions can be safely achieved in some other manner. The applicant must submit a written request to PRMD demonstrating that the condition(s) is infeasible due to specific constraints (e.g. lack of property rights) and shall include a proposed alternative measure or option to meet the goal or purpose of the condition. PRMD shall consult with affected departments and agencies and may require an application for modification of the approved permit. Changes to conditions that may be authorized by PRMD are limited to those items that are not adopted standards or were not adopted as mitigation measures or that were not at issue during the public hearing process. Any modification of the permit conditions shall be documented with an approval letter from PRMD, and shall not affect the original permit approval date or the term for expiration of the permit.
29. Any proposed modification, alteration, and/or expansion of the use authorized by this Use Permit shall require the prior review and approval of the Permit and Resource Management Department or the Board of Zoning Adjustments, as appropriate. Such changes may require a new or modified Use Permit and additional environmental review.
30. This permit shall be subject to revocation or modification by the Board of Zoning Adjustments if:  
(a) the Board finds that there has been noncompliance with any of the conditions or (b) the Board finds that the use for which this permit is hereby granted constitutes a nuisance. Any such revocation shall be preceded by a public hearing noticed and heard pursuant to Section 26-92-120 and 26-92-140 of the Sonoma County Code.

In any case where a Use Permit has not been used within two (2) year after the date of the granting thereof, or for such additional period as may be specified in the permit, such permit shall become automatically void and of no further effect, provided however, that upon written request by the applicant prior to the expiration of the two year period the permit approval may be extended for not more than one (1) year by the authority which granted the original permit pursuant to Section 26-92-130 of the Sonoma County Code.