

MINUTE ITEM

This Calendar Item No. 31
was approved as Minute Item
No. 31 by the State Lands
Commission by a vote of 3
to 0 at its 12/17/81
meeting.

CALENDAR ITEM

31

11/23/81
W 40248
Dorsey
PRC 6096

GEOHERMAL PROSPECTING PERMIT

APPLICANT: Larry T. Durkan
2124 Mount Olive Court
Santa Rosa, California 95404

AREA, TYPE LAND AND LOCATION:
Approximately 1670 acres of proprietary
lands (Department of Developmental Services)
at Sonoma State Hospital, Eldridge, Sonoma
County.

LAND USE: Drill from one to three wells at locations
approved by hospital administration to
assess geothermal potential of area.

TERMS OF PROPOSED PERMIT:

Initial period: Two years from December 20,
1981.

Renewal options: One period for two years.

Surety bond: \$50,000

Public liability insurance: combined single
limit coverage of \$500,000.

Special: Upon discovery of geothermal
resources in commercial
quantities, permittee
will be entitled to a
preferential lease upon
notice of intention to
exercise this right;
subject, however to the
discretion of the Commission
and review of environmental
documentation pertaining
to full field development
of the resource.

A 8

S 4

CALENDAR ITEM NO. 31 (CONTD)

CONSIDERATION: Rental of \$1 per acre per annum during first year, escalating to \$5 per acre per annum during the second year; and \$25 per acre per annum during any renewal period, unless a well has been drilled.

In case a preferential lease is executed, it will provide for rental of \$1 per acre per annum, and a royalty of 10 percent of gross revenues received from the sale of geothermal resources, with a minimum royalty of \$2 per acre per annum.

PREREQUISITE TERMS, FEES AND EXPENSES:

Filing fee and processing costs have been received.

STATUTORY AND OTHER REFERENCES:

- A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13; Div. 20.
- B. Cal. Adm. Code: Title 2, Div. 3; Title 14, Div. 6.

AB 884: 12/7/82.

OTHER PERTINENT INFORMATION:

1. Larry T. Durkan has applied for a geothermal prospecting permit to drill as many as three wells up to 6,500 feet deep at Sonoma State Hospital, Sonoma County, to determine the availability, quantity, and quality of geothermal resources underlying the hospital grounds. Warm waters (70°F or warmer) have been reported in nearby areas at shallow depths. The use to be made of any resource discovered will depend upon its temperature, pressure, volume and mineral content; possible uses include the generation of electricity, spaceheating, domestic hot water, and preheated boiler stock. Hospital staff favors the project as a potential means for reducing energy expenditures. Department of Water Resources has proposed a cogeneration project for the hospital, to provide electrical power for the State Water Project; their project is being held in abeyance pending early assessment of the geothermal potential.

CALENDAR ITEM NO. 31 (CONTD)

2. A negative declaration was prepared by the California Division of Oil and Gas, pursuant to CEQA and the State EIR Guidelines.
3. This project is situated on proprietary lands not identified as possessing significant environmental values. A staff review of available environmental information indicates no reason to identify the subject lands as having such values at this time.

APPROVALS OBTAINED:

Department of Developmental Services.

FURTHER APPROVALS REQUIRED:

Division of Oil and Gas, Regional Water Quality Control Board, Bay Area Air Quality Management District, County of Sonoma.

EXHIBITS:

- A. Land Description.
- B. Location Map.
- C. Negative Declaration.

IT IS RECOMMENDED THAT THE COMMISSION:

1. DETERMINE THAT A NEGATIVE DECLARATION HAS BEEN PREPARED FOR THIS PROJECT BY CALIFORNIA DIVISION OF OIL AND GAS.
2. CERTIFY THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED IN THE NEGATIVE DECLARATION.
3. DETERMINE THAT THE PROJECT WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.
4. AUTHORIZE ISSUANCE TO LARRY T. DURKAN OF A TWO-YEAR GEOTHERMAL PROSPECTING PERMIT FOR GEOTHERMAL RESOURCES AT SONOMA STATE HOSPITAL, ELDRIDGE, SONOMA COUNTY ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED HERETO AND BY THIS REFERENCE MADE A PART HEREOF FROM DECEMBER 20, 1981, WITH LESSEE'S OPTION TO RENEW FOR ONE PERIOD OF TWO YEARS AND WITH THE RIGHT TO REQUEST A PREFERENTIAL LEASE IF GEOTHERMAL RESOURCES ARE DISCOVERED IN COMMERCIAL QUANTITIES; IN CONSIDERATION OF ANNUAL RENTS IN THE AMOUNT OF \$1 PER ACRE FOR THE FIRST YEAR, ESCALATING TO \$5 PER ACRE FOR THE SECOND YEAR, AND \$25 PER ACRE

CALENDAR ITEM NO. 31 (CONT'D)

DURING ANY RENEWAL PERIOD UNLESS A WELL HAS BEEN DRILLED. THE PERMIT WILL AUTHORIZE THE DRILLING OF FROM ONE TO THREE WELLS TO A MAXIMUM DEPTH OF 6,500' AT LOCATIONS APPROVED BY THE HOSPITAL, AND IN ACCORDANCE WITH REASONABLE CONDITIONS ESTABLISHED BY THE HOSPITAL. THE PERMIT WILL FURTHER PROVIDE THAT IF A PREFERENTIAL LEASE IS REQUESTED, IT WILL PROVIDE FOR RENTAL OF \$1 PER ACRE PER ANNUM, AND A ROYALTY OF 10 PERCENT OF GROSS REVENUES FROM THE SALE OF GEOTHERMAL RESOURCES, WITH A MINIMUM ANNUAL ROYALTY OF \$2 PER ACRE.

EXHIBIT "A"
LAND DESCRIPTION

W 40248

All that certain piece parcel or tract of land, situated in the County of Sonoma, State of California, bounded and described as follows:

Beginning at a stake in a mound of rocks, on the summit of Sonoma Mountain, said mound of rocks being the same as that mentioned in the deed from P. Monahan Sr. and P. Monahan Jr., to Wm. McPherson Hill, dated September 19, 1877 and recorded on page 95 of Book 61 of deeds in the office of the County Recorder of Sonoma County; thence North 67° East 79.15 chains to a stake on the West line of the land of Patrick Monahan; thence along the land of said Patrick Monahan North 19° West 3.75 chains; thence North 67° East 8.40 chains; thence North 17° West 1.23 chains; thence North 2° 30' West 4.20 chains; thence North 24° 30' East 2.64 chains; thence North 62° 30' East 1.68 chains; thence South 73° 15' East 2.15 chains; thence South 63° 30' East 4.18 chains; thence South 72° 45' East 2.16 chains; thence South 76° 30' East 1.71 chains to a young fir tree marked with 3 notches and standing in Patrick Monahan's yard; thence South 86° East 0.48 chains to a corner under Patrick Monahan's wagon shed from which corner a Madrona tree marked with three notches bears North 32° East 0.85 chains distant thence North 67° 30' East 36.94 chains; thence South 20° East 3.37 chains to an old redwood stake marked "H I L" and standing in the corner of a picket fence; thence North 67° East 73.56 chains to the middle of Sonoma Creek; thence meandering in the middle of said creek North 25° 15' West 3.73 chains; thence North 42° 15' West 4.77 chains; thence North 68° 45' West 1.08 chains; thence North 56° 45' West 2.73 chains, North 42° 45' West 4.25 chains; thence leaving said Sonoma Creek, North 66° 36' East 59.06 chains to the middle of the public road leading from Glen Ellen to Sonoma; thence following the meanderings of said public road North 27° 45' West 10.00 chains, North 47° 45' West 3.00 chains, North 22° 15' West 16.00 chains, North 37° 45' West 20.00 chains, North 33° 45' West 15.55 chains to a point in the middle of said public road, which is opposite to a rock marked "W.F.C." planted in the Westerly edge of said road; thence North 37° 15' West 25.49 chains to the Northeast corner of the land of F. G. Thierkoff; thence leaving said public road South 57° 45' West 54.55 chains along the land of said F. G. Thierkoff; thence South 13° 45' East 12.00 chains to a stake; thence South 57° 45' West 13.14 chains along the land of said Thierkoff to the middle of Sonoma Creek; thence meandering in the middle of said Sonoma Creek South 7° 15' West 6.00 chains; thence South 16° 15' West 2.70 chains; thence South 20° 30' East 10.00 chains; thence South 29° 37' East 7.53 chains; thence leaving said creek South 67° 30' West 17.66 chains along the land of J. Chauvet; thence North 23° 45' West 8.00 chains along the land of said J. Chauvet to a stake in Ashbury Canyon; thence following the meanderings of said Ashbury Canyon to the summit of Sonoma Mountain, according to the following bearings and distances; South 26° 45' West 1.12 chains; South 14° 45' East 1.18 chains; South 26° 45' West 0.46 chains, South 82° 15' West 1.57 chains, South 60° 15' West 2.12 chains, South 51° 45' West 2.78 chains, South 9° 15' West 1.41 chains, South 52° 45' West 1.32 chains;

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EXHIBIT "A"

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North 82° 45' West 2.43 chains, South 79° 15' West 1.28 chains, South
 6° 30' East 1.19 chains, South 4° 15' West 1.91 chains, South 58° 45'
 West 1.70 chains, North 43° 45' West 2.57 chains, South 51° West 1.66
 chains, South 42° West 0.80 chains, North 82° 15' West 1.22 chains,
 South 30° 45' West 1.32 chains, South 59° 15' West 2.12 chains, South
 83° 30' West 1.67 chains, South 43° 30' West 1.99 chains, North 68° 45'
 West 0.33 chains, South 40° 15' West 0.91 chains, North 68° 30' West
 1.08 chains, South 55° 30' West 1.36 chains, South 87° 45' West 1.40
 chains, North 67° 25' West 1.20 chains, North 54° 45' West 1.03 chains,
 South 80° 45' West 1.45 chains, North 87° 45' West 1.64 chains, South
 89° 30' West 0.83 chains, South 57° 15' West 1.77 chains, North 72° 45'
 West 2.09 chains, North 85° 15' West 0.67 chains, South 72° 15' West
 1.75 chains, North 34° West 0.61 chains, South 80° 45' West 1.39 chains,
 South 67° West 1.35 chains, North 44° West 0.70 chains, South 51° 15'
 West 2.00 chains, South 65° West 1.29 chains, North 69° 45' West 1.25
 chains, South 74° West 0.65 chains, North 78° West 1.41 chains, South
 34° 45' West 1.24 chains, South 53° 15' West 1.49 chains, South 55°
 West 3.36 chains, North 76° West 0.87 chains, South 2° 45' West 1.78
 chains, South 86° 15' West 1.81 chains, South 86° 45' West 1.32 chains,
 South 78° 15' West 0.87 chains, South 38° 45' West 1.22 chains, South
 88° 15' West 0.93 chains, South 67° 15' West 1.53 chains, South 40° 15'
 West 1.05 chains, South 64° 15' West 1.10 chains, South 17° 15' West
 1.88 chains, South 19° 25' East 0.88 chains, South 4° 45' West 1.67
 chains, South 68° West 1.32 chains, North 72° West 2.11 chains, South
 76° 30' West 1.95 chains, South 41° 45' West 0.64 chains, South 6° 45'
 West 1.27 chains, South 56° 15' West 2.36 chains, South 77° 45' West
 1.67 chains, South 47° 15' West 1.94 chains, South 64° 45' West 0.78
 chains, South 44° 30' West 1.64 chains, South 76° 50' West 2.15 chains,
 South 72° 15' West 1.43 chains, South 69° West 1.52 chains, South 49°
 15' West 1.35 chains, South 79° 15' West 1.39 chains, South 46° 45'
 West 1.24 chains, South 78° 15' West 1.52 chains, South 23° 30' West
 2.22 chains, South 38° West 1.15 chains, South 62° West 1.18 chains,
 South 37° 45' West 1.33 chains, South 57° 30' West 1.52 chains, South
 82° West 0.78 chains, South 52° 15' West 1.76 chains, South 72° 45'
 West 2.25 chains, South 51° West 1.32 chains, South 60° West 0.76
 chains, South 21° 15' West 0.67 chains, South 77° 15' West 2.10 chains
 North 87° 30' West 1.33 chains, North 76° West 2.15 chains, South 84° 15'
 West 1.03 chains, South 43° 30' West 1.33 chains, South 78° 30' West
 0.50 chains, South 33° 15' West 0.84 chains, North 81° 45' West 2.18
 chains, North 82° 45' West 1.31 chains, North 45° 15' West 1.18 chains,
 North 66° 15' West 1.60 chains, North 62° 45' West 1.24 chains, North
 57° 45' West 1.09 chains, North 88° West 0.96 chains, North 82° West
 1.33 chains, North 77° West 1.24 chains, North 46° West 1.36 chains,
 South 85° 30' West 1.95 chains, North 65° West 1.62 chains, North 45°
 45' West 0.92 chains, North 61° 15' West 1.49 chains, South 55° 45' West
 1.95 chains, North 87° 30' West 2.20 chains, North 78° West 2.36
 chains, South 74° 15' West 1.26 chains, South 10° West 1.43 chains,
 South 39° 45' West 0.87 chains, South 37° 45' West 1.19 chains, South
 7° 15' West 1.07 chains, South 47° 45' West 1.60 chains, South 60° 45'
 West 1.40 chains, South 36° 30' West 1.42 chains, South 45° 15' West
 1.17 chains, South 3° East 1.02 chains, South 12° 30' East 1.20 chains,
 South 10° 45' East 1.40 chains, South 36° 15' West 1.03 chains, South
 17° 15' West 2.10 chains, South 21° 45' West 0.87 chains, South 12°
 15' West 1.16 chains, South 57° 15' West 1.17 chains, South 31° 45'

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EXHIBIT "A"

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West, 0.64 chains, South 54° West 0.83 chains, South 47° 45' West 1.26 chains, South 17° 15' West 1.03 chains, South 16° 45' West 1.73 chains, South 21° 15' West 1.79 chains, South 14° 15' East 1.95 chains, South 38° 15' East 1.88 chains, South 52° East 1.69 chains, South 74° 30' East 1.53 chains, South 44° 15' East 1.20 chains South 28° 45' East 2.00 chains, South 43° 15' East 1.57 chains, South 15° 15' East 1.62 chains, South 21° 45' East 2.00 chains, South 50° 45' East 1.68 chains, South 19° East 2.13 chains, South 5° 15' East 3.18 chains, South 19° West 4.48 chains, South 2° 15' East 3.43 chains, South 18° 45' East 17.58 chains, South 38° 30' East 2.57 chains to an old black oak tree on summit of Sonoma Mountain; thence on said summit, South 21° East 9.22 chains to a stake in a mound of rocks, the place of beginning, containing one thousand six hundred and sixty nine and 93/100ths (1669.93) acres. Bearings true, Magnetic Variation 17-1/4° East as surveyed by L. E. Ricksecker, Surveyor.

The above description includes Lots No's. 14, 15, 21, 23, 24, 25, 26 and 28 of Section No. 15 and Lots No's. 1, 2 and 5 of Section No. 22 in Township 6, North of Range Six West, Mount Diablo Meridian and portions of the Ranchos "Petaluma" and Agua Caliente.

Saving and excepting therefrom that portion thereof conveyed to Charles J. Pagani, by deed dated January 28, 1948 recorded May 26, 1948 under Sonoma County Recorder's Serial No. C-68235.

END OF DESCRIPTION

REVIEWED NOVEMBER 2, 1981 BY TECHNICAL SERVICES UNIT, ROY MINNICK, SUPERVISOR.

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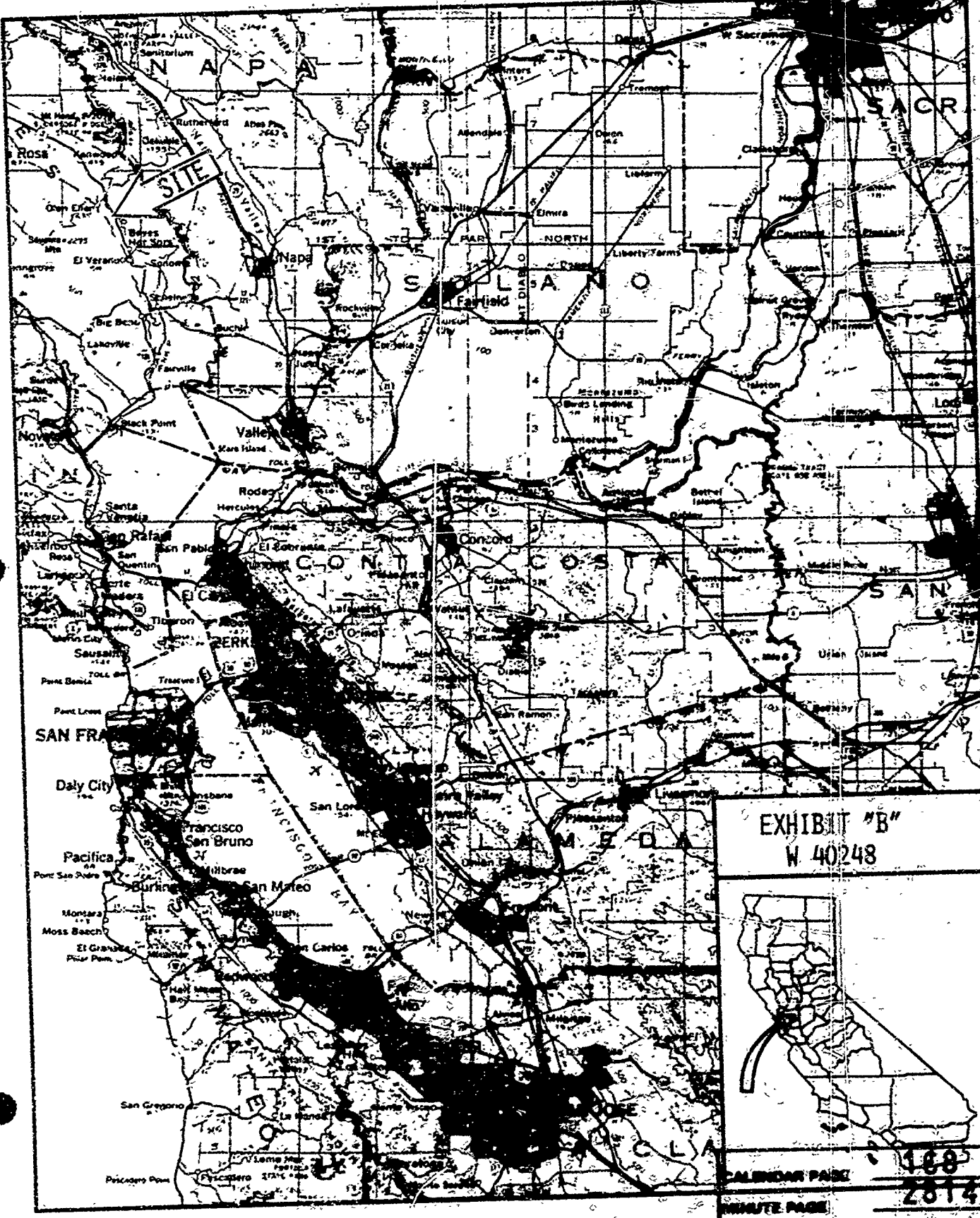
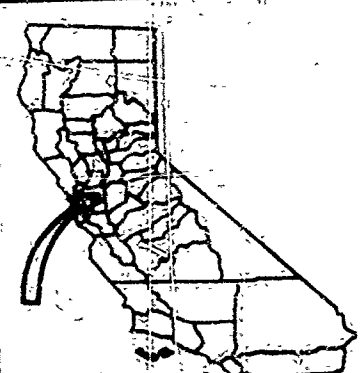


EXHIBIT "B"
W 40248



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EXHIBIT "C"

STATE OF CALIFORNIA—RESOURCES AGENCY

EDWARD G. BROWN JR., Governor

DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS
1416—9th STREET, ROOM 1316
SACRAMENTO, CALIFORNIA 95814
(916) 445-9686




November 4, 1981

The attached documents, along with the Notice of Determination, make up the Mitigated Negative Declaration, which has been issued by the California Division of Oil and Gas on the Sonoma State Hospital geothermal exploratory project being proposed by Exploration Engineering, Inc.

No comments were received by the division as a result of the Negative Declaration being distributed for public and State Clearinghouse (SC# #81199601) review from October 1, 1981 to October 30, 1981. No significant adverse impacts are anticipated as a result of implementing this exploratory project.

Sincerely,


Bernd T. Beutenmuller
Geothermal CEQA Unit

BTB:pw

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RESOURCES AGENCY FOR CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

NOTICE OF DETERMINATION

TO: SECRETARY FOR RESOURCES
1416 NINTH STREET, ROOM 1311
SACRAMENTO, CALIFORNIA 95814

PROJECT DESCRIPTION:

PROJECT TITLE: 113 Sonoma State Hospital		WELL NAME(S) AND NUMBER(S) SS #1, 2, 3, 4, 5
FIELD	COUNTY/CITY Sonoma	
SECTION(S), TOWNSHIP(S), AND RANGE(S); S. & M. Sec. 24, T. 6N., R. 5W., M.D.B.&M.		
NAME OF OPERATOR Exploration Engineering, Inc.		OPERATOR REPRESENTATIVE Larry T. Durkan
OPERATOR ADDRESS 2278 Market Street, San Francisco, CA 94114		OPERATOR PHONE NUMBER (415) 431-5352

PROJECT ABSTRACT:

The objective of the proposed project is to discover and evaluate the characteristics of a geothermal resource which may be encountered in the project area. The proposed project is located on the grounds of Sonoma State Hospital near the town of Glen Ellen in Sonoma County. The project involves activities necessary to drill and test one deep geothermal exploratory well at each of up to as many as five proposed sites.

DIVISION CONTACT	PHONE NUMBER
Bernd T. Beutenmuller	(916) 323-2732

The Division of Oil and Gas, Department of Conservation, has approved the above-described project and has made the following determinations:

The project will; will not, have a significant effect on the environment.

An Environmental Impact Report was prepared for the project pursuant to the provisions of CEQA.

A Negative Declaration was prepared for the project pursuant to the provisions of CEQA. A copy of the Negative Declaration is attached.

A Statement of Overriding Considerations was; was not, adopted for this project. A copy of the Statement is attached.

STATE CLEARING HOUSE NUMBER 81100601

OGG/OG PROJECT NUMBER 2-1/2-90-985-113

OGS150(3-79-DWRR-5C)

[Signature]
DATE: November 4, 1981
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RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF CONSERVATION
DIVISION OF OIL AND GAS

ENVIRONMENTAL CHECKLIST FORM

DATE FILED

I. PROJECT DESCRIPTION:

PROJECT TITLE: 113 Sonoma State Hospital		<input type="checkbox"/> OBSERVATION <input checked="" type="checkbox"/> EXPLORATORY	WELL NAME(S) AND NUMBER(S)
FIELD	COUNTY/CITY Sonoma	SS #1, 2, 3, 4, 5	
NAME OF OPERATOR Exploration Engineering, Inc.		OPERATOR REPRESENTATIVE Larry T. Durkan	
OPERATOR ADDRESS 2278 Market Street, San Francisco, CA 94114			OPERATOR PHONE NUMBER (415) 431-5352

II. ENVIRONMENTAL IMPACTS

(Explanations of all "yes" and "maybe" answers are required on attached sheets.)

1. Earth. Will the proposal result in:

- | | YES | MAYBE | NO |
|--|-----|-------|----|
| a. Unstable earth conditions or in changes in geologic substructures? | — | — | X |
| b. Disruptions, displacements, compaction or overcovering of the soil? | X | — | — |
| c. Change in topography or ground surface relief features? | X | — | — |
| d. The destruction, covering or modification of any unique geologic or physical features? | — | — | X |
| e. Any increase in wind or water erosion of soils, either on or off the site? | — | X | — |
| f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the land of the ocean or any bay, inlet or lake? | — | — | X |
| g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazards? | — | — | X |

2. Air. Will the proposal result in:

- | | | | |
|---|---|---|---|
| a. Substantial air emissions or deterioration of ambient air quality? | — | X | — |
| b. The creation of objectionable odors? | — | X | — |
| c. Alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally? | — | — | X |

3. Water. Will the proposal result in:

- | | | | |
|---|---|---|---|
| a. Changes in currents, or the course or direction of water movements, in either marine or fresh waters? | — | — | X |
| b. Changes in absorption rates, drainage patterns or the rate and amount of surface water runoff? | — | X | — |
| c. Alterations to the course or flow of flood waters? | — | — | X |
| d. Change in the amount of surface water in any water body? | — | — | X |
| e. Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? | — | — | X |
| f. Alteration of the direction or rate of flow of ground waters? | — | — | X |
| g. Change in the quantity of ground waters, either through direct additions or withdrawals or through interception of an aquifer by cuts or excavations? | — | — | X |
| h. Substantial reduction in the amount of water otherwise available for public water supplies? | — | — | X |
| i. Exposure of people or property to water related hazards such as flooding or tidal waves? | — | — | X |

4. Plant Life. Will the proposal result in:

- | | | | |
|--|---|---|---|
| a. Change in the diversity of species, or number of any species of plants (including trees, shrubs, grass, crops, and aquatic plants)? | — | — | X |
| b. Reduction of the numbers of any unique, rare or endangered species of plants? | — | — | X |
| c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of any species? | — | — | X |

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	YES	MAYBE	NO
d. Reduction in acreage of any agricultural crop?	—	—	X
5. Animal Life. Will the proposal result in:			
a. Change in the diversity of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms or insects)?	—	—	X
b. Reduction of the numbers of any unique, rare or endangered species of animals?	—	—	X
c. Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?	—	—	X
d. Detenoration to existing fish or wildlife habitat?	—	—	X
6. Noise. Will the proposal result in:	X	—	—
a. Increases in existing noise levels?	—	—	X
b. Exposure of people to severe noise levels?	X	—	—
7. Light and Glare. Will the proposal produce new light or glare?	—	—	X
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of an area?	—	—	—
9. Natural Resources. Will the proposal result in:		X	—
a. Increase in the rate of use of any natural resources?	—	—	X
b. Substantial depletion of any nonrenewable natural resources?	—	—	—
10. Risk of Upset. Does the proposal involve a risk of an explosion or the release of hazardous substances (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of an accident or upset conditions?	—	X	—
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	—	—	X
12. Housing. Will the proposal affect existing housing, or create a demand for additional housing?	—	—	X
13. Transportation/Circulation. Will the proposal result in:	X	—	—
a. Generation of substantial additional vehicular movement?	—	—	X
b. Effects on existing parking facilities, or demand for new parking?	—	—	X
c. Substantial impact upon existing transportation systems?	—	—	X
d. Alterations to present patterns of circulation or movement of people and/or goods?	—	—	X
e. Alterations to waterborne, rail or air traffic?	—	X	—
f. Increase in traffic hazards to motor vehicle bicyclists or pedestrians?	—	—	—
14. Public Services. Will the proposal have an effect upon, or result in a need for new or altered governmental services in any of the following areas:			X
a. Fire protection?	—	—	X
b. Police protection?	—	—	X
c. Schools?	—	—	X
d. Parks or other recreational facilities?	—	—	X
e. Maintenance of public facilities, including roads?	—	—	X
f. Other governmental services?	—	—	X
15. Energy. Will the proposal result in:			X
a. Use of substantial amounts of fuel or energy?	—	—	X
b. Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?	—	—	X
16. Utilities. Will the proposal result in a need for new systems, or substantial alterations to the following utilities:			X
a. Power or natural gas?	—	—	X
b. Communications systems?	—	—	X
c. Water?	—	—	X
d. Sewer or septic tanks?	—	—	X

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	YES	MAYBE	NO
e. Storm water drainage?	—	—	X
f. Solid waste and disposal?	—	—	X
17. Human Health. Will the proposal result in:			
a. Creation of any health hazard or potential health hazard (excluding mental health)?	—	—	X
b. Exposure of people to potential health hazards?	—	—	X
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public, or will the proposal result in the creation of an aesthetically offensive site open to public view?	—	X	—
19. Recreation. Will the proposal result in an impact upon the quality or quantity of existing recreational opportunities?	—	—	X
20. Archeological/Historical. Will the proposal result in an alteration of a significant archeological or historical site, structure, object or building?	—	—	X
21. Mandatory Findings of Significance.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	—	—	X
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time while long-term impacts will endure well into the future.)	—	—	X
c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environment is significant.)	—	—	X
d. Does the project have environmental effects which will cause substantial adverse effects on human beings either directly or indirectly?	—	—	X

III. DISCUSSION OF ENVIRONMENTAL EVALUATION

SEE ATTACHMENT

Checklist Prepared By: Bernard T. Bentzen Date _____

IV. DETERMINATION

On the basis of this initial evaluation:

- I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described on an attached sheet have been added to the project. A NEGATIVE DECLARATION WILL BE PREPARED.
- I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Date 10/1/81

Bernard T. Bentzen 173
 GEOTHERMAL REGULATORY SERVICES 2819

DISCUSSION OF ENVIRONMENTAL EVALUATION

- 1b,c,e Only minor impacts from topographic alteration and construction-induced erosion are anticipated due to the proposed sites, specific locations, and very short access routes.
- 2a,b Substantial deterioration of the ambient air quality or the creation of objectionable odors are not expected, at the exploratory phase, to occur at a level significant to the local area. If, however, a geothermal resource is encountered, there is a possibility of some temporary venting of H₂S. Therefore, the applicant has agreed to develop an H₂S contingency plan, continuously monitor effluent gases at the wellhead, report gas analyses, and to comply with all applicable rules and regulations of those governmental agencies having jurisdiction in this area.
- 3b Any changes in absorption rates, drainage patterns or the rate and amount of surface water runoff should be of minimal impact due to the relatively small surface area involved along with the use of good engineering design and construction practices.
- 6a There will be a temporary increase in noise levels during drilling, which is expected to take no more than 6 weeks per well. The applicant has agreed to construct sound shield barriers, if necessary, which should mitigate the possibility of exceeding the maximum allowable noise level of 65 dba at a 1/2 mile distance from the site. If complaints of excessive noise should arise, continuous sound level measurements should be made until excessive noise has been adequately mitigated.
- 7 If night drilling is permitted by the hospital administration, there will be a localized temporary increase in light and glare; however, dwelling areas and public thoroughfares appear to be shielded from the proposed drill sites by land forms and vegetation.
- 9a If a geothermal resource is found, it could result in the increased use of a natural resource which is considered a desirable alternative energy source.
- 10 Risk of an explosion is considered slight since all drilling operations will be carried out in accordance with applicable rules and regulations of the California Division of Oil and Gas, which include the required installation of blowout prevention equipment.
- 13a.f Temporary increases in vehicular movement and potential traffic hazards can be mitigated by the applicant developing an appropriate safety program for vehicle operations and by implementing standard safety techniques, such as the use of warning vehicles preceding wide loads.
- 18 Temporary siting of a drill rig may be aesthetically offensive to some, however, the proposed drill sites appear to be shielded from public view by land forms and vegetation.

PROJECT DESCRIPTION

INTRODUCTION

Exploration Engineering, Inc. proposes to drill a geothermal exploratory test well at each of up to as many as five proposed sites. These sites are located on the grounds of Sonoma State Hospital near the town of Glen Ellen in Sonoma County. The purpose of the project is to discover and evaluate the characteristics of the geothermal resource which may be encountered in the project area.

Public information data pertinent to the 1,670 acre hospital property was reviewed, including prior geologic mappings and groundwater studies. Sonoma State Hospital files and maps and previous geochemical data were reviewed. Exploration Engineering performed area reconnaissance and detailed specific site geotechnical studies including a series of 1 to 100 foot auger sampler holes to confirm foundation conditions disclosed by detailed mapping and to provide well site design recommendations.

DRILL SITE DESIGN

All sites will be cleared and leveled. Clearing shall consist of growth, such as grasses, weeds and other vegetation and debris, and the disposal of such material designated for removal. The topsoil may be stockpiled for later spreading over cut and fill areas to enhance revegetation. The removal of any large brush or trees will not be necessary on any of the sites. Site number 2 is located within an abandoned sewage treatment plant and no site work will be necessary except for the removal of garbage.

The well pad layout is in the shape of an L. At the inside of the L corner, the pad will be excavated to depths as much as 3 feet below ground surface. This will provide a rock foundation for the drill rig, eliminating the possibility of differential settlement from loads imposed by the drill string. Material derived from such excavations will be used to construct berms outside the drillsite area for drainage control.

All well pads shall be constructed to drain toward the cut or up slope side of the pad on a slope of approximately two feet per hundred feet. A drainage system designed in accordance with the "standards" set by the California Department of Transportation shall be provided to adequately carry away water collected on the surface of the locations as well as water intercepted from upper slopes and natural drainage systems. The drainage system will consist of ditches on the up slope perimeter of drill pads. These ditches will be sloped to drain at a gradient between 1% and 2% or slightly greater depending on a qualified field engineer's final analysis. Sand cement filled bags and stones shall be installed as energy dissipators, where required, to reduce flow velocities and prevent erosion. All drainage will be conducted to natural drainage systems and provided with settling basins at final exit in accordance with above standards.

A fence or suitable enclosure will be constructed around the drill site in accordance with hospital requirements. Sound shields will be constructed if necessary.

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Drilling supplies will be mobilized to the location on a 40 foot semi-trailer to be unloaded on pallets and covered for later use. A light mobile drilling plant and attendant water truck will be mobilized to location. A 40-foot hole will be drilled and 30 foot conductor casing will be set. After which time the light drilling plant and water truck will leave location. A large drilling plant and accompanying support machinery will then be mobilized to the location. The drilling plant and accompanying support machinery will consist of a draw works and hoisting derrick, two mud pumps, and a rotary table, each of which will be powered by a 871 Detroit diesel or equivalents, a semi-trailer mounted fuel storage tank, two semi-trailer mounted portable mud tanks along with mixing and conditioning equipment, water storage tanks, blowout prevention equipment, and pipe and pipe racks. The rig will spud in and drill on a 24 hour a day basis. A nontoxic bentonite based drilling fluid will be used for the drilling process. The cuttings circulated from the borehole during the drilling operation will be removed from the location and disposed of in accordance with applicable state and county regulations.

Upon completion of a well, the drilling equipment will be removed from the location. A temporary well house will be constructed for testing purposes. Drill site cuts and other areas exposed by grading shall be revegetated with grasses and/or woody plants and trees as determined and approved by a qualified field engineer.

SITE DESCRIPTION

Topography SS #1

Drill site SS #1 is located in the southeast corner of a dry pasture of approximately 160 acres used for seasonal grazing of animals. Topography of the immediate drill site area is gently sloping down from the elevation of 250 feet to a low of approximately 235 feet in the south central part of the pasture. Elevation of the hill tops surrounding the drill site area from west, north and east are 360 feet, 440 feet, and 480 feet respectively. Access to the general site area is by Sonoma State Hospital owned paved roads.

Topography SS #2

Drill site SS #2 is located in ruins of an abandoned sewage treatment plant. The foundation of which was graded to bedrock prior to construction and will provide the foundation for the drilling. The topography of the drill site area located at the south eastern toe of a mound which rises from a low of 200 foot elevation to a high of 360 feet. The abandoned sewage treatment plant is located at an approximate elevation of 242 feet, and accessible by Sonoma State Hospital owned paved roads.

Topography SS #3

Drill site SS #3 is located at approximate elevation of 325 feet on the eastern toe of the Sonoma mountains approximately 150 feet north of the natural drainage system of Mill Creek in an area previously used by Sonoma State Hospital for employee housing. The site is stratigraphically located very near to the main boiler room of Sonoma State Hospital for direct application purposes. The site is accessible by Sonoma State Hospital owned paved roads.

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Topography SS #4

Drill site SS #4 is located at approximate elevation of 320 feet and is spaced approximately 90 feet south of drill site SS #3 in an area previously used by Sonoma State Hospital for employee housing. The site is stratigraphically located very near the main boiler room of Sonoma State Hospital for direct application purposes. The site is accessible by Sonoma State Hospital owned paved roads.

Topography SS #5

Drill site #5 is located at the approximate elevation of 270 feet on the eastern toe of the Sonoma mountains. It is approximately midway between the natural drainage systems of Ashbury Creek to the north and Mill Creek to the south. The site is next to a maintenance shop within the developed hospital service area and drains into the hospital's drainage system.

Geologic and Foundation Conditions

Geologic and foundation conditions at the drill sites were determined by onsite investigations and examination of 1968 U.S. Geological Survey maps, map series #MF-483. Faults and suspected concealed faults are mapped throughout the drill site area generally trending northwest to southeast. However, none of the proposed drill sites evidence shearing, faulting, or landslide activity. A thin organic soil exists over drill sites SS #1, SS #3, SS #4, and SS #5. The exposed formation is by USGS classification Q₁ng described as the Huichica (pleistocene) and Glen Ellen formations. No evidence was disclosed to indicate any of the faults or shear zones in the drill site areas to be active or to have had movement during Quaternary.

Groundwater

There is no evidence of groundwater at any of the five proposed drill sites. It is anticipated, however, that groundwater zones may be encountered while drilling. This will be dealt with by using procedures designed to protect and preserve groundwater as specified and required by state and county agencies whose agents will be making on-site investigations.

◆ Approximate drill sites selected by applicant and hospital staff

W40248

GLEN ELLEN QUADRANGLE
CALIFORNIA—SONOMA CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
SE 1/4 SANTA ROSA 15' QUADRANGLE

