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Natural Area Reserves System - Bob Lee

7417

REVISED

GOVERNOR'S BRIEFING  
on  
GEOTHERMAL RESOURCES  
Department of Land and Natural Resources  
June 6, 1988

BACKGROUND

1. HGP-A discovery well completed, July 1976.
2. Administrative Rules for geothermal leasing and drilling adopted, May 1978.
3. Administrative Rules for Designation and Regulation of Geothermal Resource Subzones adopted, September 1984.
4. Five geothermal mining leases issued to: NELH (HGP-A Well) (1979), Bishop Estate (1981), Kapoho Land Partnership (1981 and 1982), and Barnwell Geothermal Corp. (1981).
5. Four Geothermal Resource Subzones, totaling 26,000 acres designated: Kapoho; Kamaili; Kilauea Middle East Rift in Puna; Haleakala Southwest Rift on Maui.
6. Seven wells drilled in Puna District. Four successful: HGP-A (1976), Kapoho State 1 (1981), Kapoho State 1A (1985), and Kapoho State 2 (1982) by Thermal Power Co. Three unsuccessful: Lanipuna 1 (1981), Lanipuna 6 (1984), and Ashida 1 (1980) by Barnwell Geothermal Co.
7. Two wells drilled at Puuwaawaa (1978). Both unsuccessful by Puuwaawaa Steam Co.

## GEOHERMAL DEVELOPMENT ACTIVITIES

1. Currently, HGP-A Well/Power Plant in Kapoho Subzone producing about 2.8 megawatts of electricity.
2. Currently, only three geothermal developers:

### Thermal Power Co.

- a. Operator for leases in Kapoho Subzone.
- b. Has drilled three successful wells--Kapoho State 1, Kapoho State 1A, and Kapoho State 2 in Kapoho Subzone; two temporarily plugged, other permitted to be plugged.
- c. Has permit to re-drill one well (Kapoho State 2).
- d. Operations suspended.
- e. Sale of Company being negotiated with Ormat Energy Co., Sparks, Nev.; previous negotiations with Geothermal Resources Inc., San Mateo, Calif. cancelled.

### Mid-Pacific Geothermal Co.

- a. Operator for Campbell Estate in Kilauea Middle East Rift Subzone.
- b. Intends to submit Plan of Operations to DLNR.
- c. Plans to begin exploratory drilling awaiting outcome of legal suit on exchange of land between State/Campbell Estate.

### Barnwell Geothermal Co.

- a. Operator of a state lease in Kapoho and a private lease in Kamaili Subzones.
- b. Unsuccessfully drilled two wells in Kapoho Subzone and one well in Kamaili Subzone.
- c. All operations and plans for further exploration suspended.

## REGULATORY ACTIVITIES

1. DLNR to amend Administrative Rules on Subzone Designation in accordance with statutory amendments.
2. DLNR to amend Administrative Rules on Geothermal Leasing and Drilling, in accordance with statutory amendments.
3. Contested case hearing on proposed Kilauea Southwest Rift Subzone is pending.
4. SB 3182 relating to consolidated geothermal permit processing being studied by DLNR staff.

## GEOHERMAL ZONING AND PERMIT REQUIREMENTS

Department of Land and Natural Resources  
Division of Water and Land Development  
State of Hawaii

<u>Activities</u>	<u>Time</u>
<u>Zoning:</u>	
1. Geothermal Subzoning (developer application)	<u>Review, Public Hearing and Decision</u> (180 days from acceptance) <u>Judicial Appeals, if any</u> (? days)
<u>Permits:</u>	
1. Geothermal Exploration Permit	<u>Approval</u> (60 days from receipt)
2. Geothermal Well Drilling Permit	<u>Approval</u> (60 days from receipt)
3. Geothermal Well Modification Permit	<u>Approval</u> (60 days from receipt)
4. Geothermal Well Abandonment Permit	<u>Approval</u> (no time limit specified)

## GROUND WATER WELL DRILLING PERMIT REQUIREMENTS

<u>Permits:</u>	
1. Well Drilling Permit*	<u>Approval</u> (2 weeks from receipt)
2. Water Use Permit*	<u>Approval</u> (180 days from receipt)

\*If geothermal development requires ground water development.

History  
Revised 9/14/88

## GEOHERMAL DEVELOPMENT ACTIVITIES

### HISTORICAL BACKGROUND

1. HGP-A well is completed, July 1976.
2. Administrative Rules, Chapter 13-183 (Regulation 8) for the Leasing and Drilling of Geothermal Resources is adopted, May 1978.
3. Administrative Rules, Chapter 13-184 for the Designation and Regulation of Geothermal Resource Subzones is adopted, August 1984.
4. Five geothermal resource mining leases issued to the following:
  - a. NELH (HGP-A Well): S-4602 for 4 acres, (1979).  
Landownership: State      Zoning: Agriculture (Ag)
  - b. Bishop Estate: R-1 for 3,487 acres, (1981).  
Landownership: Private  
Zoning: Ag (3,044 acs)      Conservation (443 acs)  
\* 751 acs (Ag) contained within GRS.
  - c. Kapoho Land Partnership: R-2 for 816 acres, (1981).  
Landownership: Private      Zoning: Ag
  - d. Barnwell Geothermal Corporation: R-3 for 777 acres, (1981).  
Landownership: Private      Zoning: Ag
  - e. Kapoho Land Partnership: R-4 for 279 acres, (1982).  
Landownership: Private      Zoning: Ag
  - f. Campbell Estate: R-5 for 9,014 acres, (1987).  
Landownership: Private  
Zoning: Ag (618 acs)      Conservation: (8,396 acs)

Total acreage leased by the State: approx. 14,377 acres.  
(Note: Leases R-1, R-2, and R-4 subleased to Puna Geothermal Venture (PGV)).

5. Four designated Geothermal Resource Subzones:

- a. Kapoho GRS: 5,756 acres, (excluding GRML R-2 and R-3.)  
Designated 10/16/84 (For R-2 and R-3, GRS area  
is valid only for the  
duration of the leases.)  
Landownership:  
State Land (3.36 acs) Private (5,752.64 acs)  
Zoning: Split (Cons/Ag)
- b. Kamaili GRS: 5,531 acres. Designated 10/16/84  
Landownership: Private Zoning: Ag
- c. Kilauea Middle East Rift GRS: 9,014 acres  
Designated 12/20/85  
Landownership:  
State Land (164 acs) Private (8,850 acs)  
Zoning: Ag (618 acs) Conservation (8,396 acs)
- d. Haleakala Southwest Rift GRS: 4,108 acres (Maui).  
Designated 10/16/84  
Landownership:  
State Land (535 acs) Private (3,573 acs)  
Zoning: Split (Cons/Ag)
- e. Proposed Kilauea Southwest Rift GRS: 8,090 acs  
Designation: Pending  
State Land (4,928 acs) Private (3,162 acs)  
Zoning: Ag

Total acreage within subzones (including R-2 and R-3):  
24,409 acres + 1,593 acres = approx. 26,000 acres.

6. Eight wells (including one side-track well) drilled in the  
Puna District:

Successful wells (4)

- a. HGP-A (1976) by NELH.  
b. Kapoho State 1 (1981) by PGV.  
c. Kapoho State 2 (1982) by PGV.  
d. Kapoho State 1-A (1985) by PGV.

Unsuccessful wells (4)

- a. Ashida 1 (1980) by Barnwell.  
b. Lanipuna 1 (1981) by Barnwell.  
c. Lanipuna 1/Sidetrack (1983) by Barnwell.  
d. Lanipuna 6 (1984) by Barnwell.

7. Two wells drilled at Puu Waawaa (1978) by Puu Waawaa Steam  
Company. Both wells unsuccessful.

## CURRENT GEOTHERMAL DEVELOPMENT ACTIVITIES

1. Currently, the HGP-A Well/Power Plant Facility in the Kapoho GRS is producing about 2.8 megawatts of electricity.
2. Currently, only, three geothermal developers:

### Ormat (Puna Geothermal Venture)

- a. Operator for leases R-2 and R-4 in the Kapoho GRS and R-1 in the Kamaili GRS.
- b. Has drilled three successful wells: Kapoho State 1, Kapoho State 2, and Kapoho State 1-A. Currently, KS-1 and KS-2 are temporarily plugged, KS-1A has been permitted (issued Thermal Power Co.) to be temporarily plugged.
- c. Has applied for an extension of permit (previously issued to Thermal Power Co.) to re-drill Kapoho State 2 (directional drilling). Application under review.
- d. Operations currently in transition due to recent sale of Thermal Power Co. to Ormat Energy.

### Mid-Pacific Geothermal Venture

- a. Operator for State mining lease R-5 (Campbell Estate) in the Kilauea Middle East Rift GRS.
- b. Intends to submit Plan of Operations to DLNR pursuant to lease and CDUA requirements.
- c. Plans to begin exploratory drilling program pending outcome of legal suit filed against the land exchange between the State/Campbell Estate.

### Barnwell Geothermal Corporation

- a. Operator of State lease R-3 in the Kapoho GRS.
- b. Unsuccessfully drilled two wells (plus one directional well) in the Kapoho GRS and one well (Ashida 1) in the Kamaili GRS.
- c. All operations and plans for further exploration currently suspended.



## REGULATORY ACTIVITIES

1. DLNR to amend Administrative Rules, Chapter 13-184 on the Designation and Regulation of Geothermal Resource Subzones in accordance with statutory amendments.
2. DLNR to amend Administrative Rules, Chapter 13-183 on the Leasing and Drilling of Geothermal Resources pursuant to statutory amendments.
3. Contested case hearing on the proposed Kilauea Southwest Rift GRS is currently pending.
4. Landowner initiated subzone designation to include 40 acres adjacent to the Kapoho GRS currently under review. Application for subzoning will require public hearing and action by BLNR.
5. Act 301, SLH 1988 (S.B. No. 3182) relating to the consolidated geothermal permit application and review process is currently being evaluated by DLNR staff for immediate implementation.

## DLNR PERMITTING REQUIREMENTS

1. Geothermal Resource Subzone Designation:

(BLNR approval required; 180 days processing time for landowner initiated application for subzone designation; Public Hearing required; No contested case hearing; direct appeal to the Hawaii Supreme Court; and No EIS required.)

2. Conservation District Use Application (CDUA) within a GRS:

(BLNR approval required; 180 days processing time; Public Hearing required; No contested case hearing - mediation upon request with direct appeal to the Hawaii Supreme Court; and EIS required.)

3. Geothermal Exploration Permit

(BLNR approval required; 60 days processing time; Term of Permit - 1 year; No Public Hearing; No EIS; and No contested case hearing.)

4. Geothermal Well Drilling Permit

(Chairperson approval; 60 days processing time; Term of Permit - 1 year; No Public Hearing; No EIS; and No contested case hearing.)

5. Geothermal Well Modification Permit (for injection purposes)

(Chairperson approval for modification only; No maximum processing time stated; No duration or term of permit specified in rules; No Public Hearing; No EIS; and No contested case hearing.)

6. Geothermal Well Abandonment Permit

(Chairperson approval required; No maximum processing time specified in rules; No Public Hearing; No EIS; and No contested case hearing.)

7. Geothermal Resource Mining Lease

(Board approval required: State land requires public auction on a competitive bid basis, Reserved land may be granted a lease without public auction by way of 2/3 approval of the Board; Estimated 6 months to 1 year processing time; Term of lease - 65 years; Board may hold Public Hearing if leasing State land; No EIS; No contested case hearing.)

8. Geothermal Plan of Operations

(Board approval required; 60 days processing time; No Public Hearing; No EIS; and No contested case hearing.)