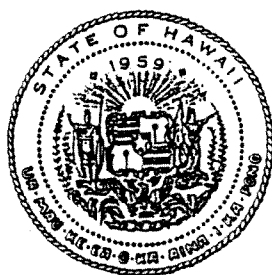


Report to the 1995 Legislature

GEOHERMAL DEVELOPMENT PERMITTING



Prepared by the

Department of Land and Natural Resources
State of Hawaii

in response to

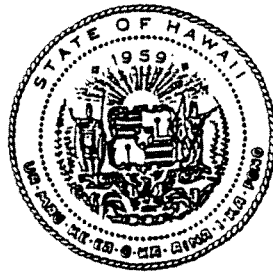
Section 196D-11, Hawaii Revised Statutes

Honolulu, Hawaii

December 1994

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CONTENTS

	PAGE
INTRODUCTION	1
STATE ADMINISTRATION'S POLICY AND PRIORITIES ON GEOHERMAL DEVELOPMENT	1
GEOHERMAL DEVELOPMENT STATUS	2
CURRENT GEOHERMAL DEVELOPMENT ACTIVITIES STATUS	2
True/Mid-Pacific Geothermal Venture	2
Puna Geothermal Venture	3
Scientific Observation Hole (SOH) Program	3
DLNR ACTIVITIES	3
Assessment of Geothermal Reservoir, Monitoring and Analysis of Data	3
Mechanical Integrity	4
Royalty	4
Geothermal Technical Advisory Committee (GEOTAC)	4
Publications	5
Newspaper File	5
Future Activities/Requests for Legislative Actions	5
OTHER ACTIVITIES	5
Geothermal Asset Fund	5

Geothermal Development Permitting

State of Hawaii

INTRODUCTION

This report covers the period July 1, 1993 - June 30, 1994.

Pursuant to Chapter 196D, Hawaii Revised Statutes (HRS), the Department of Land and Natural Resources (DLNR) established a consolidated permit application and review process.

Recognizing that there has been no application for any large-scale geothermal project for the State of Hawaii, Governor John Waihee on December 8, 1992 issued a policy statement stating that there is no such project under consideration by the State. DLNR staff and resources efforts have been appropriately utilized and actively involved in the monitoring and regulation of existing projects currently permitted to explore, develop and generate geothermal electricity exclusively for the Island of Hawaii.

Although these efforts relative to geothermal development activities on the Big Island of Hawaii did not involve any aspect of large scale development of geothermal power, the DLNR's activities have been consistent with the objectives and purpose of Chapter 196D, HRS as amended. The allocation of program resources and duties performed by staff have been fully utilized in the DLNR's geothermal resource management responsibilities.

STATE ADMINISTRATION'S POLICY AND PRIORITIES ON GEOTHERMAL DEVELOPMENT

There have been no changes in the State Administration's policies and priorities on geothermal development since the policy statement issued by the Department of Business, Economic Development and Tourism (DBEDT) on December 1, 1992, as approved by Governor Waihee on December 8, 1992.

This policy limits the State's support for geothermal development to currently permitted projects on the Big Island of Hawaii and states that the State is no longer pursuing a large-scale geothermal project.

GEOTHERMAL DEVELOPMENT STATUS

DLNR, together with DBEDT, had been cooperating in the U.S. Department of Energy's (DOE) preparation of a Federal National Environmental Policy Act (NEPA) Environmental Impact Statement (EIS) for the Hawaii Geothermal Project (HGP).

A federal register announcement of May 1994, however, indicates that the U.S. DOE has decided to withdraw its notice of intent to prepare a Federal EIS for the conceptual Hawaii Geothermal Project. The announcement, published in Vol. 59, No. 94, page 25638, indicates that because Hawaii is no longer pursuing or planning to pursue the geothermal/cable project, the DOE has decided to terminate the project.

Despite the curtailment of the large-scale project formerly contemplated, the DLNR nevertheless continues to carry out its regulatory duties regarding currently permitted geothermal resources on the Big Island of Hawaii. These activities include resource assessment and monitoring, and administration of geothermal permits including those relating to geothermal wells and relating to administration of geothermal mining leases. Activities carried out this year in these areas are outlined below.

CURRENT GEOTHERMAL DEVELOPMENT ACTIVITIES STATUS

True/Mid-Pacific Geothermal Venture

True/Mid-Pacific Geothermal Venture has decided to discontinue its geothermal pursuits to concentrate on other business commitments. The Campbell Estate continues to maintain its interest and commitments under Geothermal Resources Mining Lease R-5.

DLNR has entered into a Memorandum of Agreement with the Campbell Estate to provide that DLNR will be able to monitor the geothermal well situated in Mining Lease R-5. This monitoring effort is important for regulatory purposes for DLNR to properly manage the resource on the Big Island. In conjunction with monitoring data from wells in other locations on the Big Island, DLNR will have a better understanding of the Big Island resource generally, and will be able to monitor effects of resource utilization at the Puna Geothermal Venture site.

Puna Geothermal Venture

Puna Geothermal Venture continues into a second year of successful operations using production wells KS-9 and KS-10 and injection wells KS-1A, KS-3 and KS-4. Between start up of operations in May 1993 and July 1994, a total of 234,716,088 kilowatts were delivered to Hawaii Electric Light Company (HELCO). Using HELCO's conversion estimates, this is the equivalent of 514,446 barrels or 21,606,741 gallons of oil.

The success of Puna Geothermal Venture's first year of operations is especially important in light of imminent closures of Big Island sugar processors who in the past have supplied a significant amount of Big Island power. With minor retrofit to the existing facilities, Puna Geothermal Venture could expand to produce an additional 15 megawatts of power.

Scientific Observation Hole (SOH) Program

DLNR is in the process of assuming the ownership of three Scientific Observation wells drilled in the Kilauea East Rift Zone and the responsibilities of the True/Mid-Pacific Geothermal Venture well drilled in the Middle East Rift Zone for geothermal resource management. The intent of DLNR is to continue the monitoring of these holes for the sole purpose of determining the characteristics of the resource for proper resource management.

DLNR ACTIVITIES

Assessment of Geothermal Reservoir, Monitoring and Analysis of Data

DLNR has undertaken a program of monitoring and data assessment. Monitoring responsibilities have been undertaken for well KA1-1 and for three Scientific Observation Holes, SOH-1, SOH-2 and SOH-4. In conjunction with data from other wells and from previously explored wells, this monitoring activity will allow staff to develop its own reservoir profile to better assess and regulate the resource.

Mechanical Integrity

DLNR oversees the annual integrity testing of geothermal structures at the Puna Geothermal Venture site to ensure safety of permitted operations.

Royalty

Geothermal resource royalties totalling \$311,574 have been received for the period from start up of operations in May 1993 through June 1994. These amounts are shared with 30% to the County of Hawaii; and 20% to the Office of Hawaiian Affairs.

Royalties for FY94-95 are estimated at more than \$400,000.

Geothermal Technical Advisory Committee (GEOTAC)

GEOTAC which is made up of scientists and government officials, continues with various studies related to geothermal resource management, including a seismicity monitoring program, a gravity study, a geothermal fluid monitoring program, a groundwater monitoring program, a shallow groundwater study, and a subsidence study.

GEOTAC members include Mr. Manabu Tagomori, Manager-Chief Engineer, Division of Water and Land Development, DLNR (Co-Chair); Dr. Donald Thomas, Geochemist, Hawaii Institute of Geophysics, University of Hawaii (Co-Chair); Mr. Dean Nakano, Geothermal Program Manager, Department of Business, Economic Development and Tourism; Dr. Harry J. Olson, retired Spark Matsunaga Fellow in Geothermal Energy Research, Hawaii Natural Energy Institute, Look Laboratory; Dr. Frank L. Peterson, Professor of Hydrogeology, Department of Geology and Geophysics, University of Hawaii; Dr. John Sinton, Geologist, Department of Geology and Geophysics, University of Hawaii; Dr. Frank Karl Duennebier, Geophysicist, Department of Geology and Geophysics, University of Hawaii; Dr. James L. Anderson, Director, Center for the Study of Active Volcanoes, University of Hawaii at Hilo; and Dr. Thomas P. Hulsebosch, Geologist, Department of Geology and Geophysics, University of Hawaii.

Publications

The Hawaii Geothermal Drilling Guide and the Hawaii Geothermal Blowout Prevention Manual were published and distributed in January 1994.

Newspaper File

The Division of Water and Land Development continues to maintain a chronological newspaper clippings file on geothermal activities.

Future Activities/Requests for Legislative Actions

A reservoir analysis developed using existing data and current monitoring data is in preparation.

Administrative rules are being updated to include provisions for geothermal resource valuation and to update the rules for legislative changes.

In connection with royalty collections, an annual audit must be coordinated and conducted by DLNR.

At this time, no legislative actions are contemplated with regard to geothermal resource development and management.

OTHER ACTIVITIES

Geothermal Asset Fund

Puna Geothermal Venture continues to contribute its agreed share of \$50,000 per year to the asset fund. Together with a one-time contribution of \$250,000 from the State of Hawaii, the asset fund now totals more than \$500,000. Draft administrative rules have been prepared by the County of Hawaii to administer the fund.