

**SEPTEMBER 1991 MONTHLY REPORT**

Scientific Observation Hole (SOH) Program

Geothermal Resource Permit: GRP 89-1

Lilewa, Kapoho, and Halekamahina, Hawaii

TMK: 1-2-10:01; 1-4-01:02; and 1-4-02:32

Hawaii Natural Energy Institute

University of Hawaii

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## SUMMARY

Since June 13, 1991, the Tonto U-5000 rig has been on standby awaiting notification from the County of Hawaii that work can continue on the SOH project. No drilling at any of the SOH sites occurred during this reporting period. On September 10, 1991, the Tonto drill rig resumed work on the HGP-A well for the Pacific International Center for High Technology Research (PICHTR) Downhole Coaxial Heat Exchanger (DCHE) project. This work included the retrieval of a bridge plug in the HGP-A well. Following the completion of the work at the HGP-A well on September 15, 1991, the Tonto rig was moved to the SOH-1 site for a clean out operation, which was completed on September 20, 1991. The Tonto rig was then demobilized and shipped back to the mainland.

## I. INTRODUCTION

This document presents the September, 1991, monthly report to the County of Hawaii Planning Department to support the Scientific Observation Hole (SOH) program in the Kilauea Middle and Lower East Rift Zones. The SOHs are for scientific observation purposes only. The information to be gained from the SOHs will provide an assessment of subsurface geological conditions, groundwater level and composition, temperature, drilling conditions, an inventory of possible mineral and geothermal resources, and an eruptive history of the island to the depth drilled.

This report addresses: occurrence and duration of any start-up, shut-down, and operation mode of any SOH/facility; performance testing, evaluation, calibration checks, and adjustment and maintenance of the continuous emission monitor(s) that have been installed; and emission measurements.

## II. BACKGROUND

The County of Hawaii Planning Commission approved, on August 8, 1989, a geothermal resource permit application (GRP 89-1) to drill Scientific Observation Holes (SOHs) in the Kilauea Middle and Lower East Rift Zone. This document presents a monthly report, as required in Condition 6:

"The petitioner shall maintain a record in a permanent form suitable for inspection and five (5) copies shall be filed with the Planning Department on a monthly basis during drilling and for six (6) months after the completion of drilling to establish a hole specific baseline and such record shall be available to the community. The record shall include:

- a. Occurrence and duration of any start-up, shut-down, and operation mode of any SOH/facility.
- b. Performance testing, evaluation, calibration checks, and adjustment and maintenance of the continuous emission monitor(s) that have been installed.
- c. Emission measurements reported in units compatible with applicable standards/guidelines."

As designated, four holes are planned to be drilled along the Kilauea East Rift Zone on the Big Island of Hawaii. Three of the Big Island holes (SOHs 1, 2, and 4) are on agriculture land and have been permitted by the County of Hawaii Planning Commission. The fourth hole, designated SOH-3, is on

conservation land. SOH activities under Conservation District Use Permit (HA 12/20/85 - 1830) issued to the Estate of James Campbell have been approved.

### III. SOH-1 SITE

#### Drilling Activity

Drilling is complete. The site will be reclaimed to its original state after testing and monitoring are completed. On September 15 and 16, 1991, the Tonto drilling rig and equipment were moved onto the SOH-1 site in preparation for a clean out operation. On September 17, 1991, a blow out preventor (BOP) was installed above the wellhead master valve and the clean out operations commenced at 10 am on September 18 and included the washing and cleaning of the hole to total depth. No problems were encountered during operations except for a broken pump shaft at 5:30 pm on September 19th, but repairs were made with parts on hand and operations continued without incident until completion on September 20, 1991. The Tonto rig and equipment was then shipped back to the mainland.

#### Monitoring Program -

Air Quality, Meteorological, Noise and Emissions are not monitored, as drilling has been completed at this site. However, during the clean out operations from September 18 through 20, 1991, H<sub>2</sub>S measurements were recorded every hour during the shift. The sensor showed no indication of any emissions from the well.

Monitoring will continue for temperature and pressure on a periodic basis.

#### IV. SOH-2 SITE

##### Drilling Activity

Drilling is complete. The site will be reclaimed to its original state after testing and monitoring are completed.

##### Monitoring Program -

Air Quality, Meteorological, Noise and Emissions are not monitored, as drilling has been completed at this site. Monitoring will continue for temperature and pressure on a periodic basis.

#### V. SOH-3 SITE

##### Drilling Activity

Drilling activity has not been initiated. Access to the SOH-3 site has not been constructed, nor has the site been cleared or graded. SOH-3 was scheduled to be located at the True/Mid-Pacific alternate drill site 2 (approximately 3,000 feet north-north-west of the present drill site). On June 10, 1991, a 90 day grading permit was issued by the Planning Department for the proposed SOH-3 site. As the Tonto drill rig has been released, work on the SOH-3 site and access will not be done during the phase of the SOH program just ended.

## VI. SOH-4 SITE

### Drilling Activity

Drilling is completed. No activity was performed during this period.

### Monitoring Program -

Air Quality, Meteorological, Noise and Emissions are not monitored, as drilling has been completed at this site. Monitoring will continue for temperature and pressure on a periodic basis.