BOARD OF WATER SUPPLY
CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96843

August 29, 1990

Dr. Bruce Anderson
Acting Interim Director
Office of Environmental Quality
Control
State of Hawaii
Kekuanaoa Building, #104
465 South King Street
Honolulu, Hawaii 96813

Dear Dr. Anderson:

Subject: Environmental Impact Assessment for Kawela Exploratory Well,
TMK: 5-7-02: 1

We request that our proposed project be published in the EQC Bulletin as a Negative Declaration.

Attached are four copies of the assessment for your use.

If you have any questions, please contact Bert Kuioka at 527-5235.

Very truly yours,

KAZU HAYASHIDA
Manager and Chief Engineer

Attachment

1990-09-08-OA-FEA

FILE COPY

ENVIRONMENTAL IMPACT ASSESSMENT

* KAWELA EXPLORATORY WELL *

OAHU, HAWAII

Prepared for

Honolulu Board of Water Supply

City & County of Honolulu

State of Hawaii

Prepared by

GEORGE A.L. YUEN & ASSOCIATES, INCORPORATED

100 North Beretania Street, Suite 303

Honolulu, Hawaii 96817

August, 1990

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I. AUTHORITY

This environmental impact assessment covers the proposed drilling, casing and testing of an exploratory well at Kawela on Oahu, Hawaii. This assessment is prepared in accordance with the requirements stipulated by the State of Hawaii, Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules.

II. PROPOSING AGENCY

Honolulu Board of Water Supply, City & County of Honolulu.

III. DESCRIPTION OF THE PROPOSED PROJECT

This project involves the drilling of an exploratory water production well located at the base of a bluff roughly 4,000 feet southeast of Kawela Bay (TMK: 5-7-02:1) at an elevation of approximately 200 feet (see fig. 1 - Site Plan).

The overall diameter of the well is 16 inches. A 12-inch casing is to be installed with a 2-inch grout-filled annulus. The total depth of the well is about 500 feet and the length of the casing will be 300 feet, leaving an uncased bore of about 200 feet. About 10,000 square feet of land will be set aside for the well and pumping station. The well is expected to yield from 500,000 gpd to 1 mgd.

Well drilling is expected to last from six to eight months. Estimated cost of the project is $ 250,000.00.

For access, an existing unimproved roadway will be used. If pump tests are favorable, a permanent roadway will be built to provide access to the well and pumping station.

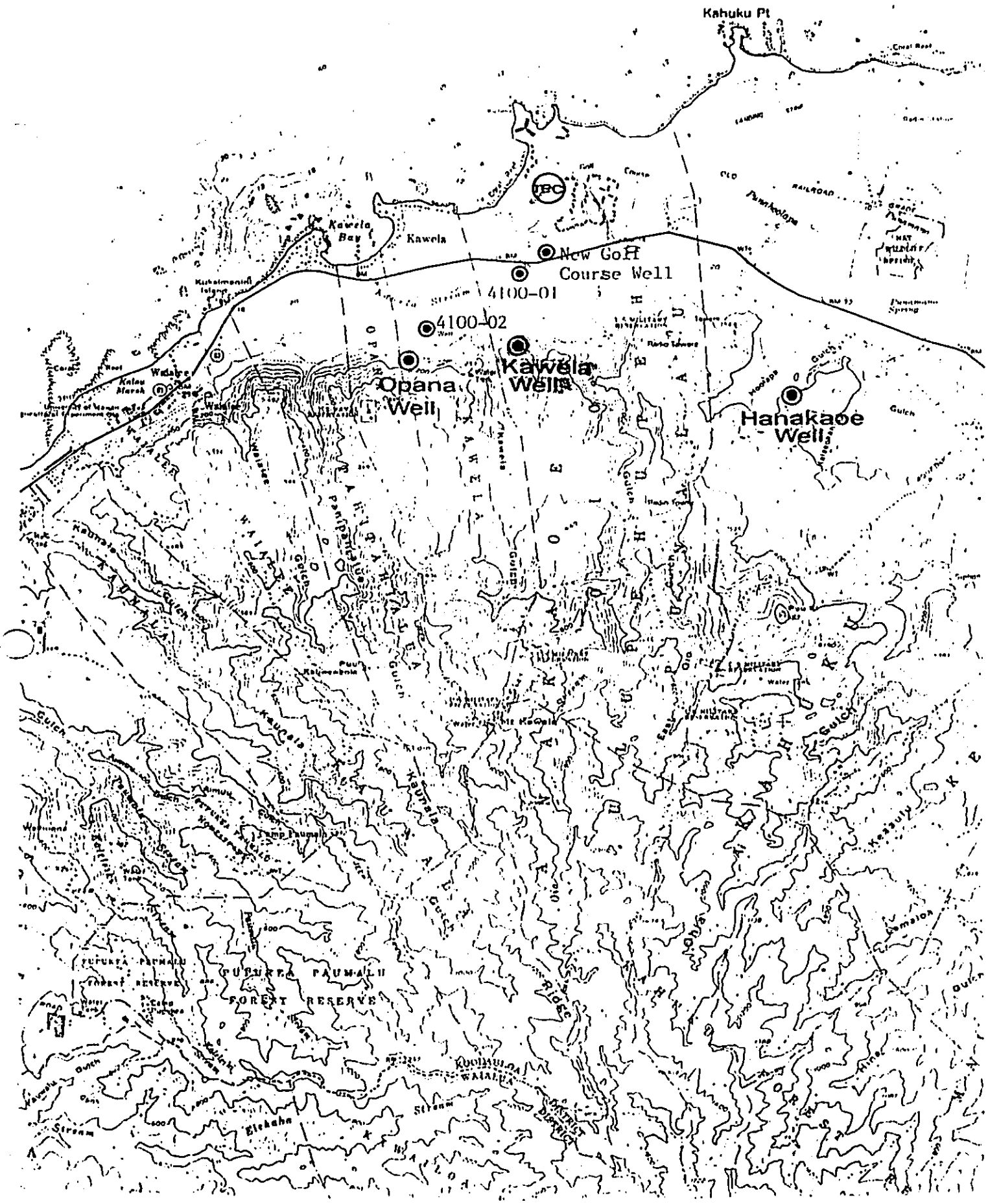

FIG. I - KAWELA WELL SITE PLAN

IV. PURPOSE OF PROJECT

This project is part of a general water development plan by the Honolulu Board of Water Supply to meet future water needs in the windward area as described in the City & County of Honolulu's Development Plan.

Water pumped from the Kawela Well is expected to primarily serve the people who live in the Kawela-Kahuku and nearby areas. The well may also serve the United States military as well as agricultural and aquacultural activities in the area.

The Kawela Well is an important undertaking by the Board of Water Supply because as the population on Oahu continues to grow in areas outside Honolulu, it is crucial that new water sources be discovered and utilized.

V. DESCRIPTION OF AFFECTED ENVIRONMENT

The well site is situated in an area zoned as Agricultural in the State Land Use District. Under City zoning, it is classified as AG-1, Restricted Agricultural. Groundslope is fairly gentle, ranging from three to eight percent slope. Soil is of silty clay and alluvium and supports primarily sugar cane, truck crops, and pasture activities. The well site is not in agricultural use.

Average temperatures in the area range from 72°F to 80°F. Average rainfall is about 40" per year.

Kawela Stream, which is intermittent, is located about 1,000 feet northwest of the well site and poses no flood threat to the site.

VI. HYDROLOGY AND GEOLOGY

The proposed Kawela well is at an elevation of approximately 200 feet above sea level on the nose of a basalt ridge in the foothills of the Koolau Range just inland of the coastal plain. The site is near the boundary separating the Waialae dike-basal aquifer from the terminal portion of the Koolauloa basal aquifer. The groundwater table lies about 10 feet above sea level. Seaward of the well starting at an elevation of between 20 and 40 feet the basalt is covered by a wedge of sediments that forms a caprock.

Pumpage from the proposed well will not affect the surface environment. Nearby stream courses, such as Kawela Stream, are intermittent and lie above the water table and they cannot be affected by groundwater pumpage.

One existing well, State no. 4100-01 and another scheduled for drilling, is located downgradient of the proposed well. Well 4100-01 has been used for many years to supply irrigation for the Kuilima Golf Course, but it will be replaced by a well for the same purpose located about 300 feet to the east along Kamehameha Highway (see fig. 1 - Site Plan). Neither of these wells will be used as a source of potable water, and the golf course that is being irrigated lies on the sedimentary caprock.

To the west three wells have been drilled in the Waialae dike-basal aquifer at Opana and a fourth is scheduled. These wells are placed along about the 200-foot elevation contour over a distance of 2,500 feet. The proposed Kawela well lies 2,000 feet to the east. Near the first Opana well (4100-03) an unused well (State no. 4100-02; old no. 338-1) is located at elevation 40 feet.

Upgradient of the proposed Kawela well the land is either unused or included in a military training area.

VII. ARCHAEOLOGICAL CONSIDERATIONS

Separate archaeological reconnaissance surveys conducted by William Barrera, Jr. (7/85) and Kenneth Nagata (7/85) revealed that there are no archaeological or historical remains at the proposed well site. Reviews with Bishop Museum staff and the State Department of Land and Natural Resources Historic Preservation Division indicate that nothing of archaeological significance has been found.

However, if any major excavation is to be done, such as additional construction of an access roadway or underground pipeline, an archaeological survey would be advisable since the State feels that there is a possibility of archaeological findings in the area because the site is near Kawela Stream.

VIII. FLORA-FAUNA

A. **FLORA:** A botanical survey of the proposed well site conducted by Kenneth Nagata and Winona Char (7/85) concludes that while there are several different species of plants, small trees and grasses, none is endangered. The most abundant species in the region is the koa-haole, which can grow to a height of 10-18 feet and which accounts for some 30% of the vegetation cover. Guinea grass, paragrass and the Christmas berry are also plentiful in the area.

Other species which are present but to lesser degrees are: virgate mimosa (Desmanthus virgatus), Spanish clover (Desmodium canum), vervain (stachytarpheta urticaefolia), lidens alba var. radiata, huehue haole (Passiflora suberosa), pluchea, popolo, lantana and false mallow.

The vegetation below the site is predominantly made up of Johnson grass.

B. **FAUNA:** Animals which are known to exist in the area in relative abundance include geckos, mongooses, rats and other small feral animals. Amphibians such as toads and lizards are also commonly found in the area. However, no large animals have been seen in the area. None of the animals at the site is considered an endangered species.

The Bishop Museum, Nature Conservancy, and the Natural Sciences Department at Brigham Young University-Hawaii say that it is unlikely that significant birdlife exists in the area. There may be some doves, mynahs, cardinals, and English sparrows in the Kawela area but none is endangered. Although no evidence has been found, there is a potential for the existence of the Pueo, or Hawaiian owl, in the area. The Pueo is endangered only on Oahu. It is not an endangered species on the other islands, and neither is it listed on the Federal Register.

No comprehensive survey of birdlife has been made in the area. There are two wildlife refuges in the wetlands near the seacost at Punamano and Kii but they are several miles away at low elevations makai of Kalanianaole Highway.

IX. POTENTIAL ENVIRONMENTAL IMPACTS AND SIGNIFICANCE

Potential environmental impacts will be short-term and confined to noise and dust problems associated with construction of an access road and exploratory drilling and test pumping. These problems will last intermittently for about eight months which is the duration of the project.

Because the well site is located some distance from the closest residence, noise and dust problems are expected to be insignificant. However, the contractor will be required to observe all regulations and ordinances regarding noise and dust nuisances.

Appropriate landscaping of the area around the well pumping station will do much to create a pleasant appearance to the facility.

Hydrologic assessment by J. Mink indicates that the well will have no effect on Kawela Stream or existing and proposed wells in the general vicinity (see p. 5).

X. ALTERNATIVES TO PROPOSED PROJECT

Alternatives to the proposed project are:

1. **Abandon project.**
2. **Try to obtain water from another source.**
3. **Resort to alternative methods of water production.**

To abandon the project would mean that the Board of Water Supply may have to limit water service to the area which would be contrary to the Board's long-range program for water development and service.

To try obtaining water from another source is problematical because another source may not be available. The siting of exploratory wells is based on a hydrologic study of all available sources. Wells are presently being drilled at Opana to the west. Another well is being planned at Hanakaoe to the east.

To rely on alternative sources of water development, such as in desalination and surface water recovery, would be unfeasible because of high costs. Other alternatives are still undergoing research and pilot studies and are only viewed as long-range considerations.

X. FINDINGS AND DETERMINATION

1. There are no known historic or archaeological sites in the area.

2. There are no known endangered species of flora or fauna in the area.

3. There are no significant and negative long-term environmental impacts resulting from the project.

4. Dust and noise problems are the only problems anticipated. However, they would only be temporary and are controllable.

5. Operation of the well would have no negative impact on Kawela Stream or wells in the general vicinity.

In summary, the proposed project will not affect any endangered species of flora or fauna. It will not involve an irreversible commitment to loss of destruction of any natural or cultural resource, nor will it result in any environmental degradation. There would be no detrimental effects on public health as it relates to sanitation, air quality, ambient noise levels; dust, etc.

In view of the above, it is determined that the proposed project will not have a significant effect on the environment and that an Environmental Impact Statement is not required under Chapt. 343, Hawaii Revised Statutes.

XI. PERSONS AND AGENCIES CONTACTED

Person	Agency
Phil Bruner	Brigham Young University-Hawaii, Math and Natural Sciences
Winona Char	Winona Char & Associates
Joannie Dobbs	Nature Conservancy
Roy Doi	BWS Planning Section
Toni Hahn	Bishop Museum
Carol Kawachi	State DLNR - Historic Preservation Division
Karla Kishinami	Bishop Museum
Chester Lao	BWS Geology/Hyrdology Section
Richard Matsui	BWS Engineering Branch
Bob Pyle	Bishop Museum

XIII. REFERENCES

1. Barrera, William, Jr., Kawela, Oahu: Archaeological Survey at Proposed Well Location, Honolulu, Hawaii, July, 1985.

2. Nagata, Kenneth and Char, Winona, Waialua-Kahuku Region EIS Botanical Study, Honolulu, Hawaii, July, 1985.

3. State of Hawaii, Department of Land and Natural Resources, Division of Water and Land Development, Rainfall Atlas of Hawaii, Report R76, Honolulu, Hawaii, 1986.

4. Stearns, H.T. and Vaksvik, K.N., Geology and Groundwater Resources of Oahu, Hawaii, Honolulu, Hawaii, 1935.