



**BOARD OF WATER SUPPLY**  
**COUNTY OF MAUI**  
P.O. BOX 1109  
WAILUKU, MAUI, HAWAII 96793-7109  
Telephone (808) 243-7816 • Fax (808) 243-7835

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'96 SEP 25 P1:45

OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

September 19, 1996

Mr. Gary Gill  
OFFICE OF ENVIRONMENTAL QUALITY CONTROL  
220 S. King Street, 4th Floor  
Honolulu, Hawaii 96813

Dear Mr. Gill:

Subject: **NEGATIVE DECLARATION FOR THE DRILLING AND TESTING WAIKAPU  
TANK SITE EXPLORATORY WELL (STATE WELL NO. 6131-01), TMK  
3-5-04:99**

The Maui County Department of Water Supply has reviewed the comments received during the 30-day public comment period which began on June 23, 1996. The agency had determined that this project will not have significant environmental effect and has issued a negative declaration. Please publish this notice in the October 8, 1996 OEQC Bulletin.

We have enclosed a completed OEQC Bulletin Publication form and four (4) copies of the final Environmental Assessment.

Please contact Myles Fujinaka at 243-7835 should you have any questions.

Sincerely,

David R. Craddick  
Director

MF:as  
Enclosures

"By Water All Things Find Life"

122  
Printed on recycled paper

1996-10-08-MA-PEA-Drilling and Testing Waikapu Tank Site  
Exploratory Well # 6131-01

OCT 8 1996

Chapter 343, Hawaii Revised Statutes (HRS)

**FILE COPY**

Final

Environmental Assessment

for the

**Drilling and Testing  
Waikapu Tank Site Exploratory Well  
(State Well No. 6131-01)**

TMK: 3-5-04: 99  
Waikapu, Maui, Hawaii

Proposing Agency:

County of Maui  
Department of Water Supply  
P. O. Box 1109  
Wailuku, Maui, Hawaii 96793  
Telephone (808) 243-7835

Prepared by:

Fukunaga & Associates, Inc.  
1388 Kapiolani Blvd. Second Floor  
Honolulu, Hawaii 96814  
Telephone: (808) 944-1821

September 1996

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Proposing Agency:

County of Maui  
Department of Water Supply  
P. O. Box 1109  
Wailuku, Maui, Hawaii 96793  
Telephone (808) 243-7835

Responsible Official:



David R. Craddick  
Director

Date: 9/18/96

Prepared by:

Fukunaga & Associates, Inc.  
1388 Kapiolani Blvd. Second Floor  
Honolulu, Hawaii 96814  
Telephone: (808) 944-1821

September 1996

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**I. PROJECT DESCRIPTION**

**A. Purpose**

The existing County of Maui owned Mokuahu Wells, Waihee Wells and Waiehu Heights Wells situated within the Iao Basal Aquifer on the island of Maui have shown an increase in salinity due to localized upconing of salt water caused by the high pumping rate. To alleviate this problem, new deep well sources are desired so that pumpage can be evenly distributed and pumping of the Mokuahu Wells can be permanently reduced. Accordingly, the County of Maui, Department of Water Supply (DWS) proposes to drill and test an exploratory well (Waikapu Tank Site Exploratory Well, State Well No. 6131-01) to determine the feasibility of developing a new ground water source within the Iao Aquifer. The proposed well site is located approximately 2.5 miles south of the existing wells (See Figures 1 and 2).

**B. Background Information**

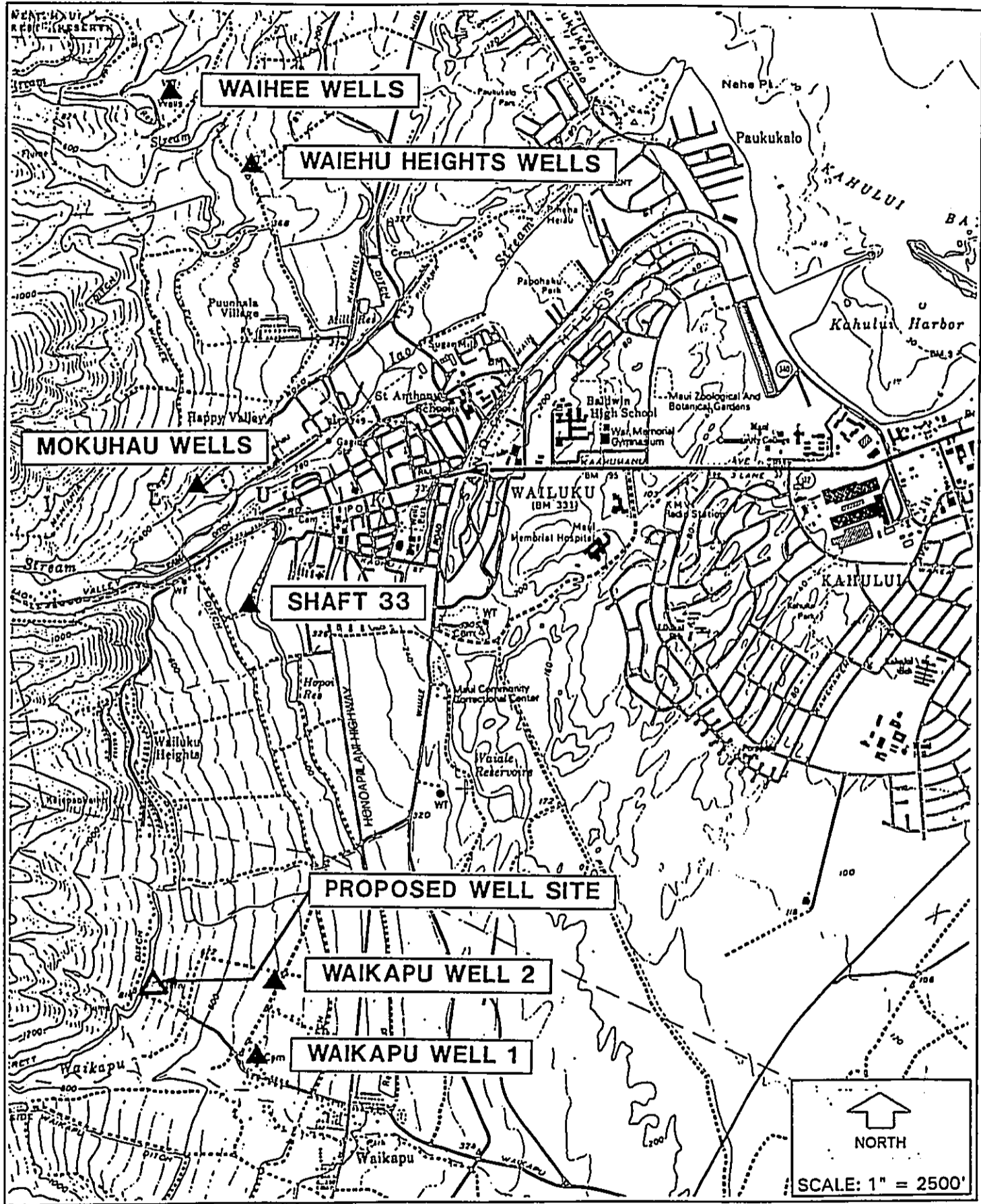
The Iao Basal Aquifer is the primary water source for the Central Maui Water System. The aquifer is situated between the Waihee Valley on the north and Waikapu Valley on the south. Withdrawal is concentrated at the Mokuahu, Waihee, and Waiehu Heights Well Fields, which provide 4.6 million gallons per day (mgd), 8.1 mgd, and 1.6 mgd, respectively. Other sources contributing to the system are Shaft 33 (or Wailuku Shaft), Kepaniwai Well, and Iao Tunnel. Together these sources produce 7.5 mgd.

The Central Maui Water System is owned and operated by the County of Maui. The water system service area includes Wailuku, Waihee, Waikapu, Wailuku Heights, Kahului, Puunene, Kihei, Maalaea, Makena, Paia-Kuau, and Spreckelsville. Current water demand for the Central Maui Water System is equal to the Iao Aquifer's sustainable yield of 20 mgd. Water demand is expected to increase to 30 mgd by the year 2010 according to the Maui County Water Use and Development Plan, dated February 1992. Accordingly, the DWS has completed negotiations to temporarily withdraw water from the Iao ditch and new water sources are being developed in the Waihee Aquifer. Adjacent to the Iao Aquifer, the Waihee Aquifer has a sustainable yield of 8 million gallons per day (See Figure 3). Ground water development within the aquifer has been limited to a few private wells, where withdrawal from these wells amount to a few thousand gallons per day.

The continued high levels of chlorides observed in the Mokuahu Well No. 2 has prompted the DWS to use Shaft 33 to relieve pumpage at the Mokuahu well. Shaft 33 is owned by C. Brewer Co. and use of the shaft is only temporary until new water sources are developed or acquired by the DWS.



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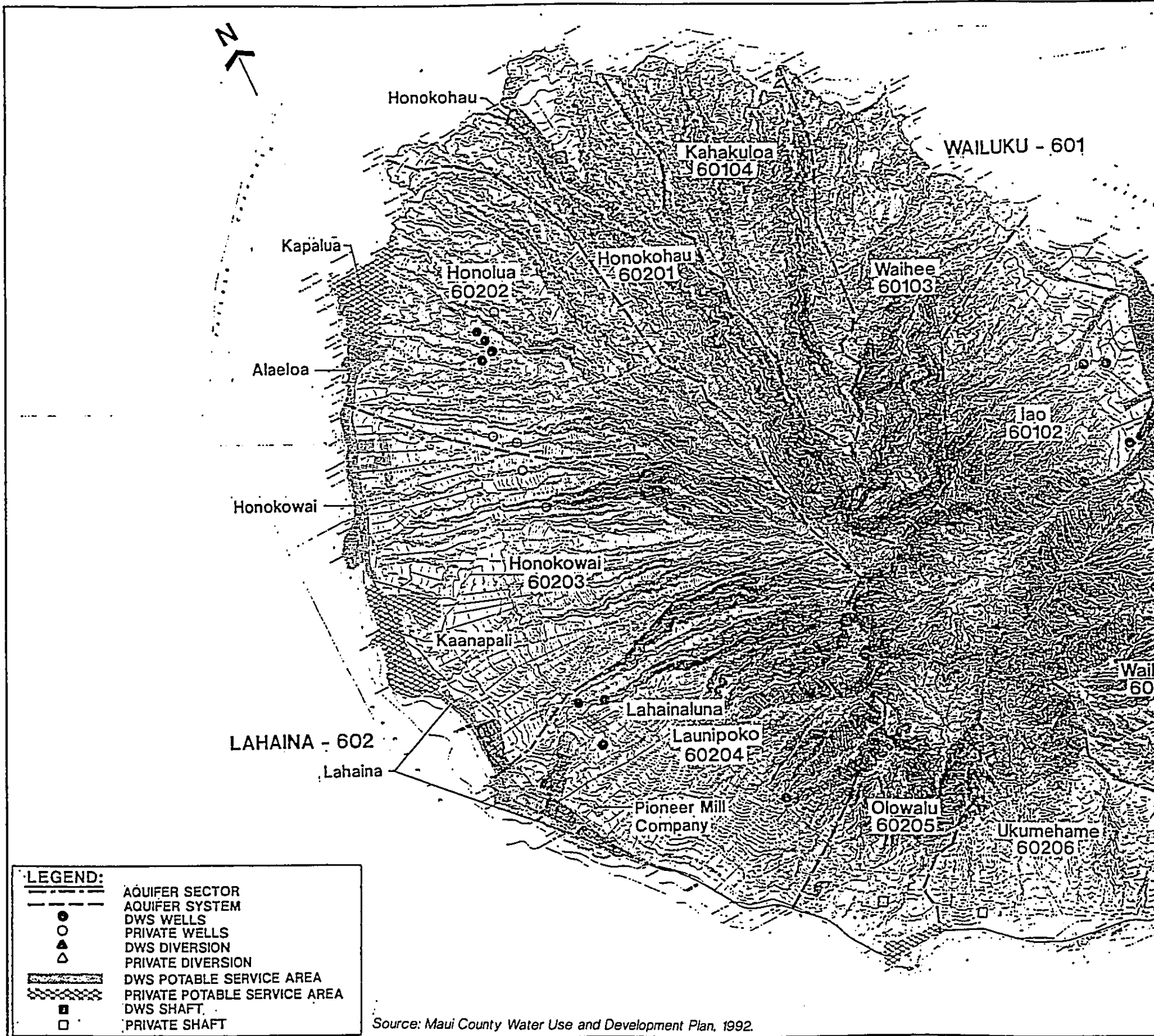
LOCATION MAP

Figure 2



**DOCUMENT CAPTURED AS RECEIVED**

*Final Environmental Assessment for the Drilling and Testing of Waikapu Tank Site Exploratory Well*



**WAILUKU AND LAHAINA AQUIFER SECTORS**

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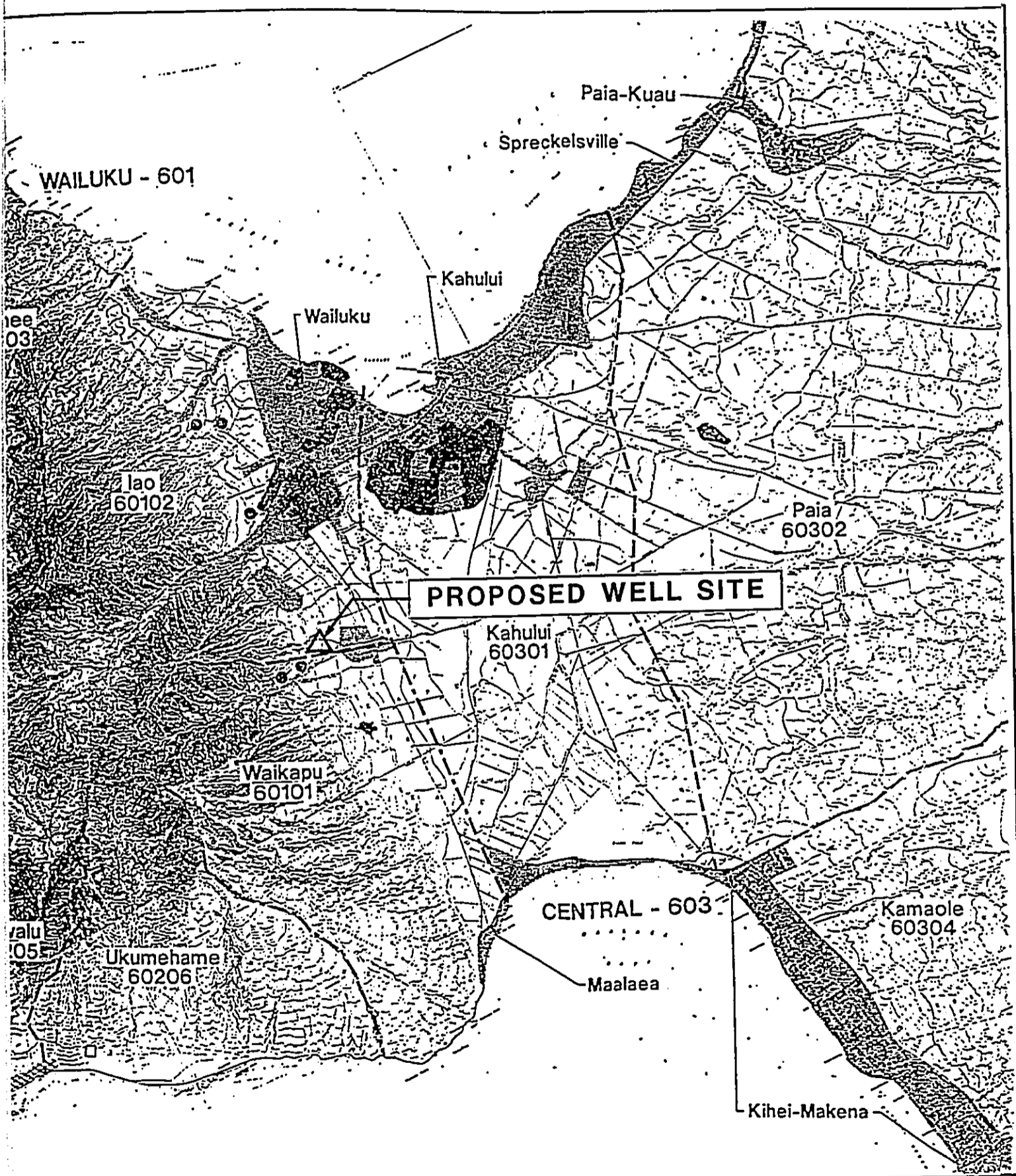


Figure 3

C. Proposed Project

The proposed exploratory drilling and testing project will determine if the well site would be a feasible ground water source. Based on preliminary investigations, the basic scope of work includes the following:

1. Drilling an 18-inch diameter cased well to a depth of approximately 820 feet below ground elevation of 764 feet (maximum depth of 950 feet, depending on field conditions).
2. Install approximately 820 feet of 18-inch I.D. steel casing (bottom 80 feet perforated). Grouting the annular space surrounding casing from ground surface to a depth of approximately 700 feet.
3. Pump test the aquifer from a range of 500 to 1400 gallons per minute (gpm).

II. DESCRIPTION OF THE ENVIRONMENT

A. Project Location

The proposed exploratory well site is located near Waikapu Town along Waiko Road in the Wailuku District of the island of Maui. Located on the northern side of Waiko Road near Everett Ditch, the site lies about 2,300 feet west of Waikapu Well No. 1 and 2,500 feet west of Waikapu Well No. 2 (See Figure 3). Waikapu Wells No. 1 and No. 2 were drilled by the State and are used as observation wells.

B. Land Ownership

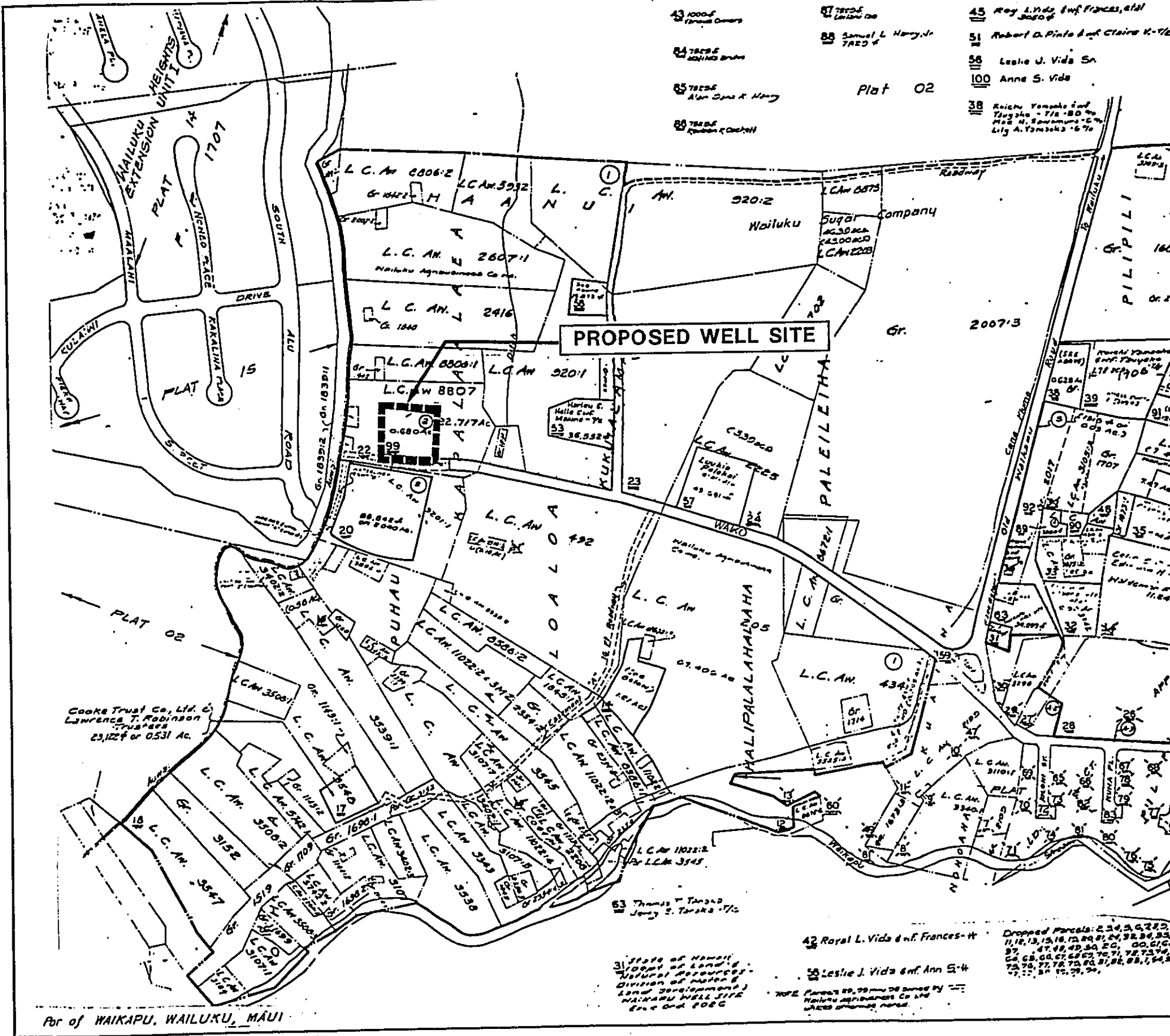
The well site is located on a parcel designated as TMK: 3-5-04: 99 which the Maui County Board of Water Supply contends that it owns fee simple by agreement. This contention is in litigation. The parcel contains the DWS's Waikapu 300,000 gallon water tank (See Figure 4). For many years, the land was previously used for cultivating sugarcane.

C. Land Classification and Zoning

The parcel is situated in an area designated as agriculture land by the State Land Use Commission and by the County of Maui Land Use and Code Administration (See Figure 5).

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## Final Environmental Assessment for the Drilling and Testing of Waikapu Tank Site Exploratory Well



LAND OWNERSHIP MAP

# DOCUMENT CAPTURED AS RECEIVED

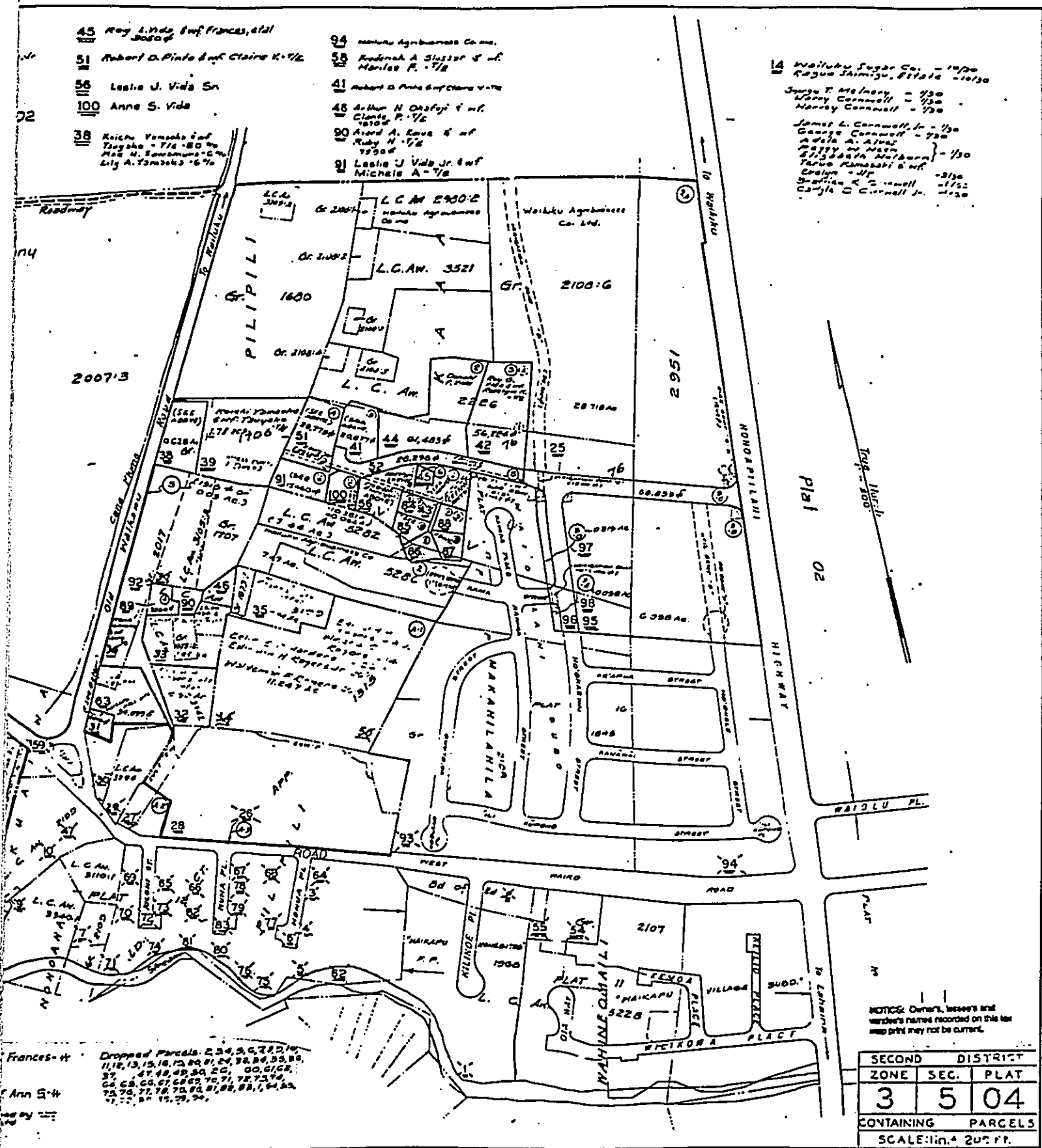
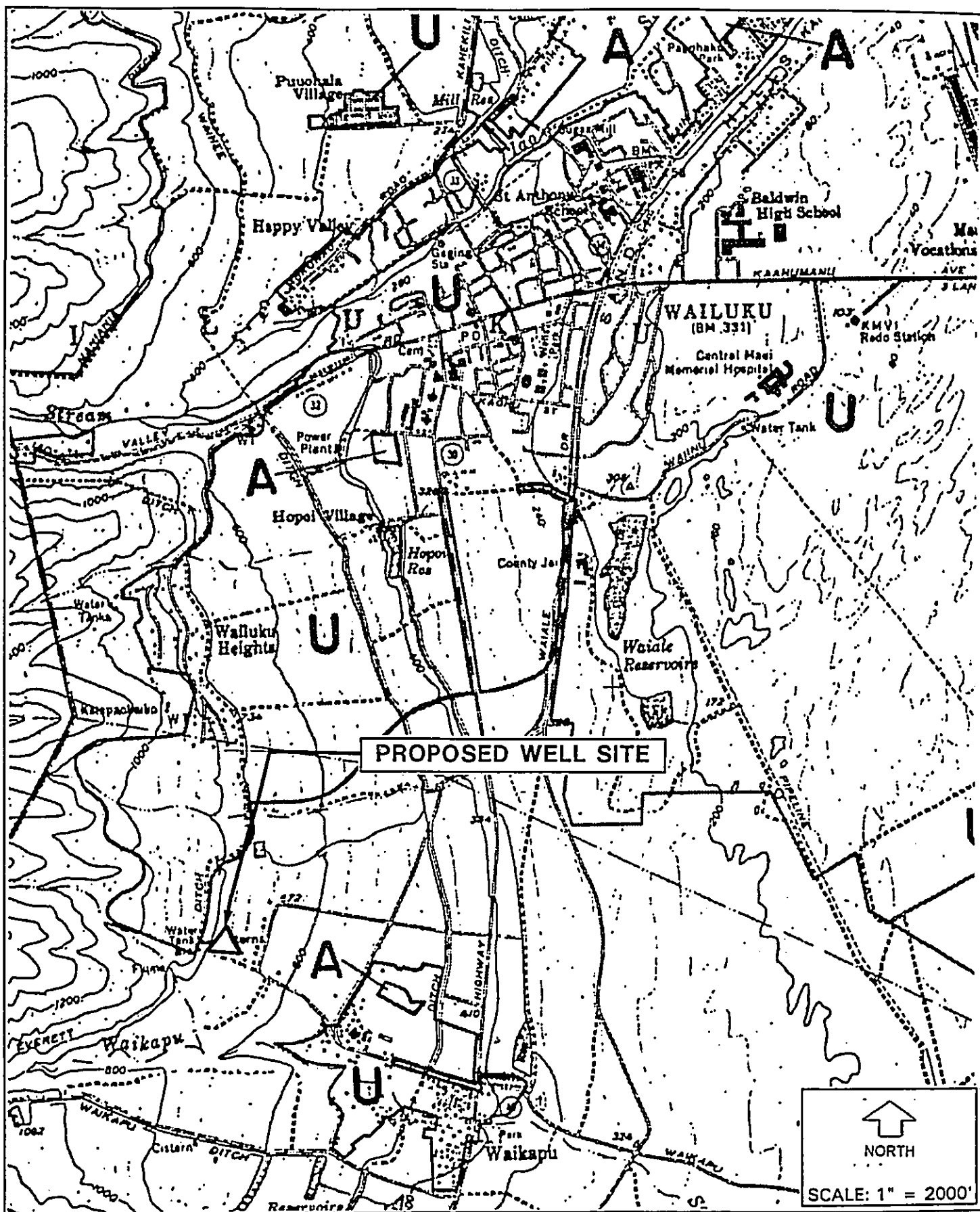


Figure 4  
Page 6

**DOCUMENT CAPTURED AS RECEIVED**

— Final Environmental Assessment for the Drilling and Testing of Waikapu Tank Site Exploratory Well



STATE LAND USE DISTRICT MAP

Figure 5

D. Physical Features

1. Topography

The developed parcel is situated on the eastern slopes of the West Maui Mountains, and slopes down toward the east from an elevation of approximately 790 feet Mean Sea Level (MSL) to an elevation of approximately 760 feet MSL. The western side of the property is slightly steep (2:1 slope) but flattens out towards the middle of the property, where the water tank stands. Paralleling the eastern property line is a concrete lined drainage ditch constructed as part of the water tank development.

2. Soils

The soil types present at the proposed well site and the surrounding areas are:

- IbC - Iao cobbly clay has a 7-15 percent slope, moderate shrink-swell, runoff is medium and erosion hazard is moderate.
- IcB - Iao clay has a 3-7 percent slope, moderate shrink-swell, runoff is medium and erosion hazard is slight to moderate.
- IcC - Iao Clay has a 7-15 percent slope, moderate shrink-swell, runoff is medium and erosion hazard is moderate.
- rRR - Rough Broken Land has a 40-70 percent slope, runoff is rapid, geologic erosion is active.
- WvB - Wailuku Silty Clay has a 3-7 percent slopes, runoff is slow and erosion hazard is slight.

3. Hydrogeology

The results of the Waikapu Wells No. 1 and No. 2 exploratory drillings show that the Iao aquifer is composed of highly permeable Wailuku basalts which dip beneath a thick wedge of caprock formations consisting of alluvial slopewash deposits eroded from the mass of West Maui. In Waikapu Well No. 1, Wailuku basalts were not encountered to its total depth of 1,020 feet or (-) 502 feet below sea level. The relative low permeability of the weathered formations encountered by Waikapu Well No. 2, between sea level and (-) 150 feet, msl, is evidenced by test results showing a yield of 100 gpm with a drawdown of 40 feet, or a specific well capacity of only 2.5 gpm per foot of drawdown. Similarly, Waikapu Well No. 1 test results yielded a specific well capacity of 2.0 gpm per



foot of drawdown. Experience has shown weathering can greatly reduce the permeability of basalts aquifers and their yield to wells. A well drilled at the Waikapu Tank site is expected to penetrate the more permeable unweathered basalts.

4. Climate

The rainfall at the well site ranges from 20 to 40 inches per year. The temperature ranges from 48 to 96 degrees Fahrenheit. The prevailing wind throughout the year are the northeasterly tradewinds.

5. Flood and Tsunami Hazards

The Federal Emergency Management Agency's June 1, 1981 Flood Insurance Rate Map (FIRM) for Maui County designates the proposed well site within Zone C, areas of minimal flooding (See Figure 6). The drilling of the exploratory well will include fully grouting the annular space between the hole and the well casing to prevent surface water leakage into the well.

Tsunami Inundation areas are located in low-lying areas along the shoreline. The proposed well site is approximately four miles inland and not susceptible to tsunami inundation.

E. Water Quality

The Iao Aquifer has yielded high quality water over the years; however, in recent years, the pumping of the Iao Aquifer at concentrated points (Mokuhau, Waihee and Waiehu Heights Well Fields) has increased the chloride levels in certain wells. At the Mokuhau No. 2 Well, chloride levels have reached 400 mg/l. The proposed new well is expected to yield water with acceptable chloride levels since the well will be located away from the Mokuhau and Waihee Well Fields. Development of this new well will allow pumpage to be permanently reduced at the Mokuhau Wells.

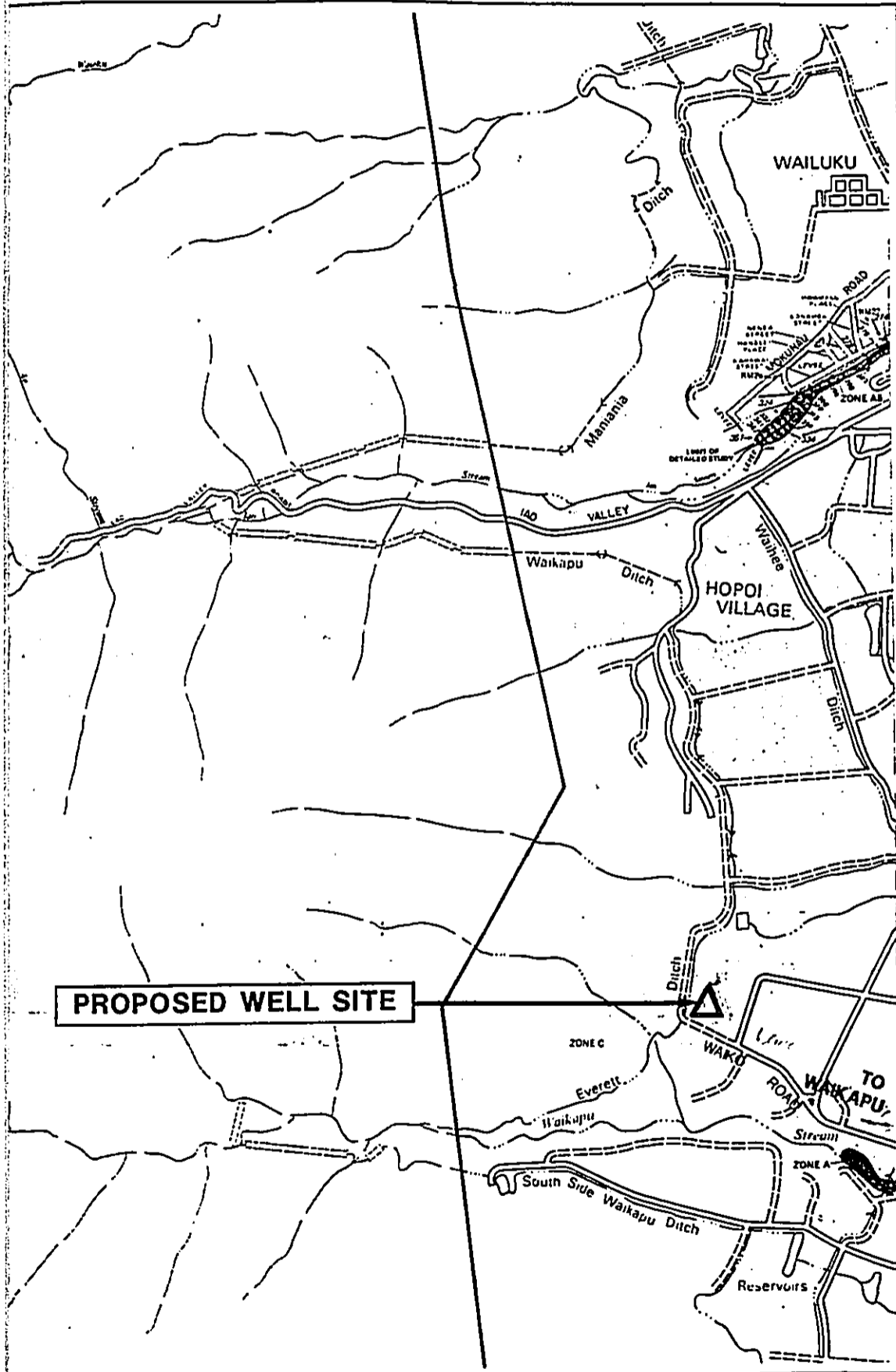
Since the exploratory well may be a potential source of potable water, the well water will need to comply with "Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems" prior to its use.

F. Flora and Fauna

The primary vegetation in the vicinity of the proposed well sites is pineapple. Non-cultivated vegetation distinctive to the area according to the Atlas of Hawaii, Second Edition, dated 1983 are Lantana, koa haole, klu, panini, ilima, and Natal redtop grass.







**KEY TO MAP**

100-Year Flood Boundary	ZONE B
100-Year Flood Boundary	ZONE A
100-Year Flood Boundary	ZONE C
Base Flood Elevation Line With Elevation in Feet**	512
Base Flood Elevation in Feet Where Uniform Within Zone**	(EL 967)
Elevation Reference Mark	RM7
Coastline Mile	+ M 70

\*\*Referenced to the National Geodetic Vertical Datum of 1929

**EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A	Area of 100-year flood; base flood elevations and flood hazard factors not determined.
AB	Area of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Area of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Area of 100-year flood; base flood elevations and flood hazard factors determined.
AB0	Area of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Area between limits of the 100-year flood and 100-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot, or where the contributing drainage area is less than one square mile; or area protected by levees from the 100-year flood. (Medium shading)
C	Area of minimal flooding. (No shading)
D	Area of undetermined, but possible, flood hazard.
V	Area of 100-year coastal flood with velocity (and action); base flood elevations and flood hazard factors not determined.
V1-V30	Area of 100-year coastal flood with velocity (and action); base flood elevations and flood hazard factors determined.

**NOTES TO USER**

Certain areas not in the special flood hazard areas (zones A and V) may be protected by flood control structures.

This map is for flood insurance purposes only; it does not necessarily show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

For advance map panels, see separately printed Index To Map Panels.

**INITIAL IDENTIFICATION:**  
DECEMBER 8, 1977

**FLOOD HAZARD BOUNDARY MAP REVISIONS:**

**FLOOD INSURANCE RATE MAP EFFECTIVE:**  
JUNE 1, 1981

**FLOOD INSURANCE RATE MAP REVISIONS:**

Refer to the FLOOD INSURANCE RATE MAP EFFECTIVE date shown on this map to determine what actuarial rates apply to structures in the zones where elevations or depths have been established.

To determine if flood insurance is available in this community, contact your insurance agent, or call the National Flood Insurance Program at (800) 638-6626, or (800) 424-8572.



Figure 6  
Page 10

Mammals common to the island of Maui include the bat, axis deer, dog, goat, pig, cat, mouse, and rat. Birds associated with the prevalent vegetation are the Cardinal, Barred Dove, Spotted Dove, Mockingbird, Myna Bird, Golden Plover, Pueo, Ricebird, House Sparrow, and White eye.

According to the U. S. Fish and Wildlife Service, the project will not impact any migratory birds, endangered or threatened species, or wetlands since the land has been altered by the cultivation of sugarcane and urbanization.

G. Archaeological Features/Historical Features

According to a letter dated April 18, 1996 from the Department of Land and Natural Resources, State Historic Preservation Division, the area has been impacted by previous grading and cutting for the existing water tank. No evidence of historic sites was identified and due to the extent of prior disturbances, it is unlikely that there are subsurface deposits or features. Therefore, it is believed that the exploratory well will have no effect on historic sites.

III. PROBABLE IMPACTS AND MITIGATIVE MEASURES

A. Short Term Impacts

1. Construction Related

Major short term impacts which can be anticipated as a result of this project are all associated with the construction activity required to drill and test the proposed well. Increased traffic, construction noise, dust and vehicular and equipment emissions can be expected. These impacts will be minimized through conscientious efforts by the contractor and strict enforcement of specified environmental protection provisions by the construction manager under the direction of the DWS. The construction-related impacts will be temporary, and will be confined to the immediate vicinity of the project site.

2. Hydrogeology

Possible impacts of the well testing effort may include temporary fluctuations of groundwater table in the immediate vicinity of the proposed well site; however, based on initial hydrogeologic studies of the area, these fluctuations should be minimal.

B. Long Term Impacts

Depending upon the results of the exploratory well testing, the DWS may decide to proceed with the development of the well into a municipal water supply source.

1. The Iao Aquifer

The long-term effect of the proposed project on the Iao Aquifer will be determined from the exploratory well test results. Preliminary indications are that the proposed well, if developed, will improve the long-term outlook of the fresh water aquifer. Presently, the aquifer is heavily pumped at concentrated points, which causes the saltwater to "upcone" into the fresh water zone. The proposed new source, once on-line, will allow the pumping of the aquifer to be more evenly distributed.

2. Public Funds, Energy and Construction Materials

The exploratory well project will involve the irretrievable commitment of public funds, electrical energy, and well construction materials.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

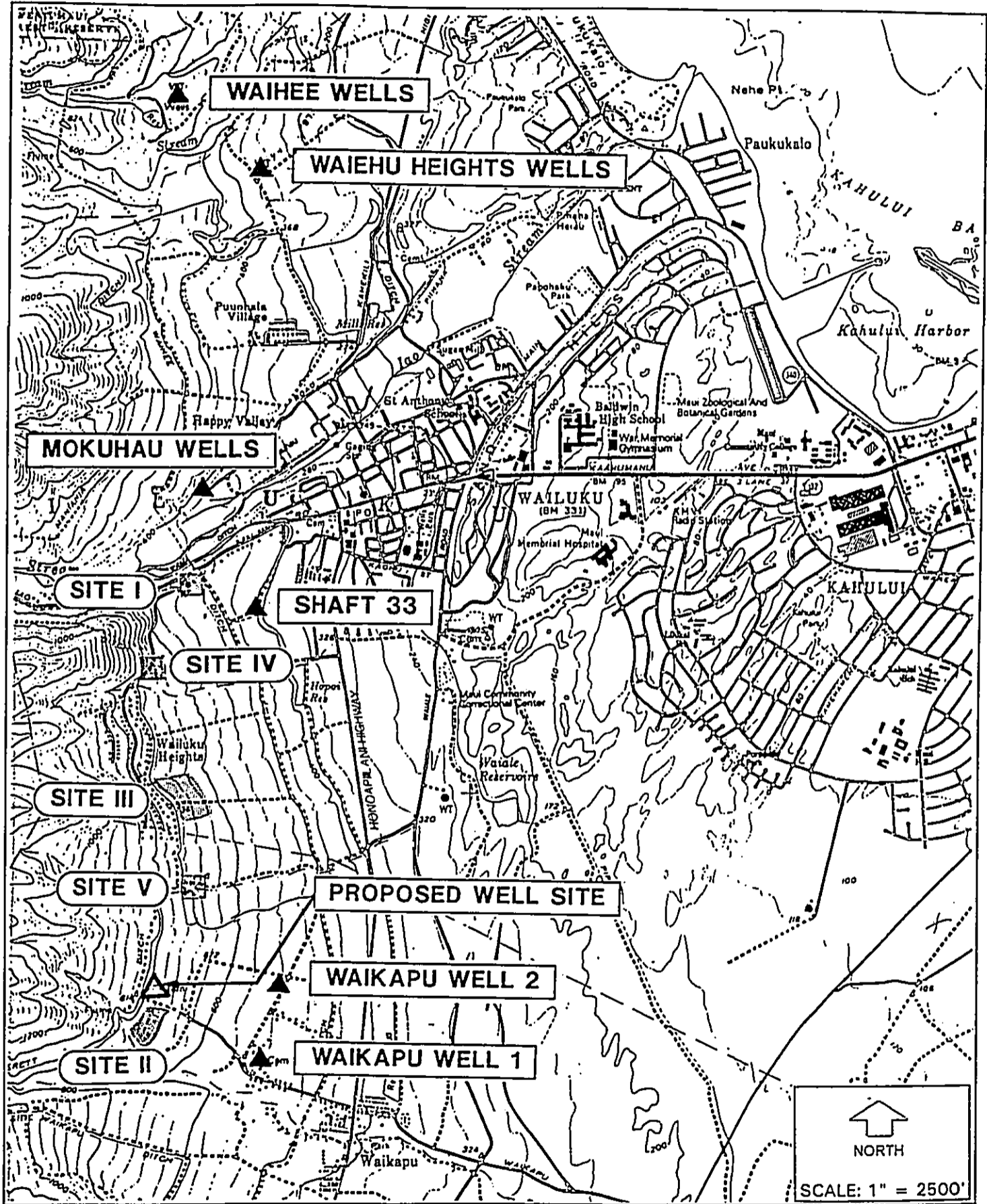
A. No Project Alternative

One alternative to the proposed project would be the "no project" option. If this option is used the resulting outcome could be possible intrusion of salt water into the Iao Aquifer.

B. Alternate Sites

Five other locations were evaluated for possible well sites (See Figure 7): Site I is located at the existing Iao Water Tank; Site II is situated approximately 500 feet south of the proposed well site; Site III is located in Wailuku Heights; Site IV is situated on the outskirts of Wailuku Heights on West Alu Road; and Site V is located at the DWS booster pump station on Kuikahi Drive. Site I was initially considered because it is on land belonging to the County of Maui. However, its main drawback is that it is the closest to the Mokuahau wells and, as such, would provide less geographical re-distribution of pumping away from the Mokuahau Wells. Because land ownership is a major criteria for selecting a location, Site II, III and Site IV were not used since they are privately owned by C. Brewer. Site V was not considered because it is not hydrogeologically a suitable site.

Final Environmental Assessment for the Drilling and Testing of Waikapu Tank Site Exploratory Well



PROPOSED ALTERNATE SITES

Figure 7

V. AGENCIES AND PERSONS CONSULTED

Table 1 lists the nineteen agencies and persons that were consulted in the review of the Draft Environmental Assessment (DEA). A total of twelve agencies and organizations provided written comments on the DEA. The written comments and responses are presented in Appendix A.

TABLE 1  
LIST OF AGENCIES AND ORGANIZATIONS CONSULTED

AGENCY OR ORGANIZATION CONSULTED		DATE	
		COMMENTS RECEIVED	RESPONSE
<b>Federal Government</b>			
1	U.S. Army Corps of Engineers, Pacific Division, Honolulu District Engineer	None	Not req'd
2	U.S. Department of Agriculture, Soils Conservation Service	6/26/96	9/6/96
3	U.S. Department of the Interior, Fish and Wildlife Service	7/12/96	9/6/96
4	U.S. Department of the Interior, Geological Survey	None	Not req'd
<b>State Government</b>			
5	Department of Agriculture	None	Not req'd
6	Department of Business, Economic Development, and Tourism	6/20/96	9/5/96
7	Department of Business, Economic Development, and Tourism, Energy Division	None	Not req'd
8	Department of Hawaiian Home Lands	7/8/96	9/6/96
9	Department of Land and Natural Resources	None	Not req'd
10	Department of Land and Natural Resources, State Historic Preservation Division	7/2/96	9/6/96
11	Department of Health	7/12/96	9/6/96
12	Office of Hawaiian Affairs	7/12/96	9/6/96
13	University of Hawaii, Water Resources Research Center	None	Not req'd
14	University of Hawaii, Environmental Center	7/23/96	9/6/96
<b>County Government</b>			
15	Planning Department	7/17/96	9/6/96
16	Department of Parks and Recreation	6/24/96	9/6/96
17	Department of Public Works	7/30/96	9/6/96
18	Economic Development Agency	None	Not req'd
<b>Private</b>			
19	Wailuku Agribusiness Company	6/26/96	9/6/96

**VI. DETERMINATION**

After completing an environmental assessment of the potential environmental impacts of the proposed project, it is believed that an Environmental Impact Statement is not required. Accordingly, this document constitutes a Negative Declaration.

**VIII. FINDINGS AND REASONS SUPPORTING THE DETERMINATION**

Findings and reasons supporting the Negative Declaration determination are as follows, using the criteria, policies, guidelines and provision of Title 11, Chapter 200, Environmental Impact Statement Rules and Chapter 343, HRS. The proposed project will not:

- A. Involve an irrevocable commitment to loss or destruction of any natural or cultural resource;
- B. Curtail the range of beneficial uses of the environment;
- C. Conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, Hawaii Revised Statutes, and revisions thereof and amendments thereto, court decisions or executive orders;
- D. Substantially affect the economic or social welfare of the community or State;
- E. Substantially affect public health;
- F. Involve a substantial secondary impact, such as population changes or effects on public facilities;
- G. Involve substantial degradation of environmental quality;
- H. Cumulatively have considerable effect upon the environment or involve a commitment for larger actions;
- I. Substantially affect a rare threatened or endangered species, or its habitat;
- J. Detrimentially affect air or water quality or ambient noise levels; or
- K. Detrimentially affect an environmentally sensitive area, such as a flood plain tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal water. [Eff. Dec. 06, 1985](Auth: HRS Sec. 343-6)(Imp. HRS Sec. 343, 343-6).

REFERENCES

1. Department of Geography, University of Hawaii, Atlas of Hawaii, Second Edition, University of Hawaii Press, 1983.
2. MacDonald, G.A., H Stearns, Geology and Ground-Water Resources of the Island of Maui, Hawaii, Bulletin 13, Division of Hydrography, 1942.
3. Meyer, William, U.S. Geological Survey, Water Resources Division, Letter to the County of Maui, Board of Water Supply, October 10, 1995.
4. Mink, John F., The Waiehu Aquifer: An Evaluation, July 1977.
5. State Land Use District, Island of Maui, Map M-5
6. State of Hawaii, Department of Business, Economic Development and Tourism, The State of Hawaii Data Book: A Statistical Abstract, 1993-1994, June 1994.
7. State of Hawaii, Department of Land and Natural Resources, Commission on Water Resource Management, Maui County Water Use and Development Plan, Island of Maui, Review Draft, February 1992.
8. U. S. Department of Agriculture, Soil Conservation Service, University of Hawaii Agricultural Experiment Station, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii, August 1972.
9. Water Resource Associates, Prospective Well Sites, Iao Aquifer Source Development, November 1991.



**APPENDIX A**

---

Comments from and Replies to Agencies and Organizations  
Consulted During the Draft Environmental Assessment Process



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

P. O. Box 50004  
Honolulu, HI  
96850-0001

June 24, 1996

Ms. Valerie Suzuki  
Fukunaga and Associates, Inc.  
1388 Kapiolani Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

**Received**  
6/24/96

Dear Ms. Suzuki:

Subject: Draft Environmental Assessment (DEA) - Waikapu Tank Site Exploratory Well,  
County of Maui, Hawaii

We have reviewed the above-mentioned document and have no comments to offer at this time.

We thank you for the opportunity to review this document.

Sincerely,

KENNETH M. KANESHIRO  
State Conservationist

cc: Mr. David Craddock, Director, Department of Water Supply, County of Maui,  
200 South High Street, Wailuku, Hawaii 96793

The Natural Resources Conservation Service  
formerly the Soil Conservation Service, works  
hand-in-hand with the American people to  
conserve natural resources on private lands.

AN EQUAL OPPORTUNITY EMPLOYER

1388 KAPOLIANI BOULEVARD / 2ND FLOOR HONOLULU, HAWAII 96814 / PH (808) 944-1821 / FAX (808) 946-0029

September 6, 1996

Mr. Kenneth M. Kaneshiro, State Conservationist  
U.S. Department of Agriculture  
Natural Resources Conservation Service  
P.O. Box 50004  
Honolulu, Hawaii 96850-0001

Dear Mr. Kaneshiro:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 24, 1996 on the DEA offering no  
comments.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.





United States Department of the Interior

FISH AND WILDLIFE SERVICE  
PACIFIC ISLANDS Ecoregion  
300 ALA MOANA BOULEVARD, ROOM 3108  
BOX 50088  
HONOLULU, HAWAII 96850  
PHONE: (808) 541-3441 FAX: (808) 541-3470

received  
7-12-96

The Service appreciates the opportunity to comment on this EA. If you have questions regarding these comments, please contact Fish and Wildlife Biologist Dr. Annie Marshall at 808(541-3441).

Sincerely,  
*Maya Hall*  
Brooks Hargett  
Field Supervisor  
Ecological Services

In Reply Refer To: APM

Valerie Suzuki  
Fukumaga & Associates, Inc.  
1388 Kapiolani Blvd., Second Floor  
Honolulu, HI 96814

JUL 11 1996

cc: DAR, Maui, Skippy Hau  
DOFAW, Maui

Re: Review of the Draft Environmental Assessment for the Waikapu Tank Site Exploratory Well, Waikapu, Maui

Dear Ms. Suzuki:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment (EA) for the Waikapu Tank Site Exploratory Well, received on June 12, 1996. The proposed project involves exploratory drilling and testing to determine whether the well site will be a feasible ground water source. Specifically, the project includes drilling an 18-inch diameter well to a depth of approximately 820 feet below ground elevation of 764 feet (maximum depth of 950 feet, depending on field conditions), installing approximately 820 feet of 18-inch I.D. steel casing (bottom 80 feet perforated), grouting the annular space surrounding casing from ground surface to a depth of approximately 700 feet, and conducting a pump test of the aquifer from a range of 500 to 1400 gallons per minute.

The Service received your previous 11 April 1996 request for information on the presence of any endangered plants or animals on the proposed project site. The Service reiterates its response of 13 May 1996 that, to the best of our knowledge, there are no Federal trust resources, such as migratory birds, endangered or threatened species or wetlands that would be affected by the proposed project. Because the project will be located on a previously disturbed site, the Service does not anticipate any direct adverse impacts to native wildlife or plant resources, and we have no objections to the experimental well as proposed.

September 6, 1996

Mr. Brooks Harper, Field Supervisor  
Fish and Wildlife Service  
Pacific Islands Ecoregion  
300 Ala Moana Boulevard, Room 3108  
Box 50088  
Honolulu, Hawaii 96850

Dear Mr. Harper:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 11, 1996 on the DEA. We appreciate the information provided by your agency that there are no Federal trust resources, such as migratory birds, endangered or threatened species or wetlands that would be affected by the proposed project. Also, because the project will be located on a previously disturbed site, you do not anticipate any direct adverse impacts to native wildlife or plant resources.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.



1388 KAPOLANI BOULEVARD / 2ND FLOOR HONOLULU, HAWAII 96814 / PH. (808) 944-1821 / FAX (808) 946-8209

received  
9/20/96



ESTHER UEDA  
EXECUTIVE OFFICER

STATE OF HAWAII  
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM  
LAND USE COMMISSION  
P.O. Box 2359  
Honolulu, HI 96804-2359  
Telephone: 808-587-3822  
Fax: 808-587-3827

June 18 1996

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Blvd., 2nd Fl.  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

Subject: Draft Environmental Assessment (DEA) for the Drilling and Testing of the Waikapu Tank Site Exploratory Well (State Well No. 6191-01), Waikapu, Maui. TMK 3-5-04: 99

We have reviewed the DEA for the subject project transmitted by your letter dated June 12, 1996, and based on the proposed well site as represented on Figure 4, we confirm that the site is located within the State Land Use Agricultural District.

We have no further comments to offer at this time. We appreciate the opportunity to comment on this matter.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,

ESTHER UEDA  
Executive Officer

EU:th

September 5, 1996

Ms. Esther Ueda, Executive Officer  
Department of Business, Economic Development and Tourism  
Land Use Commission  
P.O. Box 2359  
Honolulu, Hawaii 96804-2359

Dear Ms. Ueda:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 18, 1996 on the DEA confirming that the site is located within the State Land Use Agricultural District.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.



September 6, 1996  
Mr. Kali Watson, Chairman Hawaiian Home Lands Commission  
Department of Hawaiian Homes Lands  
P.O. Box 1879  
Honolulu, Hawaii 96805

Dear Mr. Watson:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated July 5, 1996 on the DEA. We note that the proposed project will have no adverse impacts on programs and projects of the Department of Hawaiian Homes Lands and acknowledge your concerns on the DEA. Our responses to your concerns are as follows:

1. Closeness of Waikapu Wells No. 1 and No. 2 to the Waikapu Tank Site Well  
Waikapu Wells 1 and 2 were drilled by the State for exploratory purposes and are used as observation wells.
2. Using Privately Owned Sites  
Using a County owned site for the exploratory well reduces land acquisition cost (and time) normally associated with acquiring privately owned sites.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.



STATE OF HAWAII  
DEPARTMENT OF HAWAIIAN HOME LANDS  
P.O. BOX 1879  
HONOLULU, HAWAII 96814

July 5, 1996

Received  
7/8/96

KALI WATSON  
CHAIRMAN  
HAWAIIAN HOME LANDS COMMISSION  
JOBBE M. K. M. YAMAGUCHI  
DEPUTY TO THE CHAIRMAN

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

Subject: Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment

The proposal to drill and test an exploratory well at Waikapu, Maui (TRK 3-5-04:99) should have no adverse impacts on programs and projects of the Department of Hawaiian Home Lands.

We offer the following comments regarding contents of the draft assessment:

1. While the proposed well site is 2.5 miles south of the Mokuaua Wells where salinity has increased (Page 1), its location "about 2300 feet west of Waikapu Well No. 1 and 2500 feet West of Waikapu Well No. 2" (Page 4) may result in a high concentration of pumpage and future upconing/higher salinity in this locality. The performance characteristics of the existing Waikapu Wells should be described and assessed to determine the probability of adverse impacts from adding another well within less than one-half mile.
2. If the goal is a new source that distributes pumpage more evenly (Page 1), private ownership should not be a major obstacle barring selection of a site for the new well (Page 11). The estimated cost and source of funding for the proposed project (compared to the project on alternative sites) should be included in the assessment report (Page 10).

Thank you for the opportunity to review the draft. If you have any questions regarding our comments, please call Joe Chu of our Planning Office at 586-3838.

Warmest aloha,

*Kali Watson*  
Kali Watson, Chairman  
Hawaiian Home Commission

/4090L3

BENJAMIN J. CATYLAND  
GOVERNOR OF HAWAII



Received  
7/2/96

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
STATE HISTORIC PRESERVATION DIVISION  
33 SOUTH KING STREET, 6TH FLOOR  
HONOLULU, HAWAII 96813

MICHAEL B. WATSON, CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
DEPUTY  
SULLYAT COLCUNA-ALUANA  
AGRICULTURAL DEVELOPMENT  
PROGRAM  
AQUATIC RESOURCES  
CONSERVATION AND  
RECREATION  
DIVISIONAL AFFAIRS  
CONSULTATION AND  
RELATIONS DIVISION  
CONSERVATION  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
LAND MANAGEMENT  
STATE PARKS  
WATER AND LAND DEVELOPMENT

June 27, 1996

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kepi'ihimi Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

LOG NO: 17282  
DOC NO: 9605KD27

Dear Ms. Suzuki:

**SUBJECT:** Historic Preservation Review (Chapter 6E-8) of a Draft Environmental Assessment -  
Waikapu Tank Site Exploratory Well (Well No. 6131-01)  
Waikapu, Waikua District, Island of Maui  
TMIK: 3-5-91:99

Thank you for submitting for review the draft Environmental Assessment (DEA) for an exploratory well, to be located at the end of East Waiko Road, Waikapu, Maui. The exploratory well site is located within a County of Maui property which presently contains a 300,000 gallon water storage tank. The .68 acre parcel has been previously impacted by sugar cane and pineapple cultivation, and by the construction of the existing tank.

The DEA information regarding the presence or absence of historic sites in the project is based on a letter dated April 18, 1996 from our office. The April 18 letter indicated that there are no known historic sites within or near the project area, and that it is not likely that historic sites are present. Our conclusion is based on the history of previous land use, and on a field inspection of the parcel, which confirmed the extent of construction and cultivation impacts in the area.

No new information has been obtained regarding this project area since the April review. We therefore concur with the finding of the DEA that the project will have "no effect" on historic sites.

Please contact Ms. Theresa K. Donham at 243-5169 if you have any questions.

Aloha,

*Don Hibbard*  
DON HIBBARD, Administrator  
State Historic Preservation

KD:jen

1328 KAPOLANE BOULEVARD / 2ND FLOOR HONOLULU, HAWAII 96814 / PH. (808) 944-1821 / FAX (808) 948-9139

September 6, 1996

Mr. Don Hibbard, Administrator  
State Department of Land and Natural Resources  
State Historic Preservation Division  
33 South King Street, 6th Floor  
Honolulu, Hawaii 96813

Dear Mr. Hibbard:

**Subject:** Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 27, 1996 on the DEA. We appreciate the information provided by your agency that there are no known historic sites within or near the project area, that it is not likely that historic sites are present, and that the project will have "no effect" on historic sites.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.





STATE OF HAWAII  
DEPARTMENT OF HEALTH  
P.O. BOX 3378  
HONOLULU, HAWAII 96811

received  
7-12-96

LAWRENCE W. BARKER  
DIRECTOR OF HEALTH

In reply, please refer to:  
EHD/SDWB

Valerie Suzuki  
July 10, 1996  
Page 2

July 10, 1996

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Boulevard, 2<sup>nd</sup> Floor  
Honolulu, HI 96814

Dear Ms. Suzuki:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE DRILLING AND  
TESTING OF WAIKAPU TANK SITE EXPLORATORY WELL  
STATE WELL NO. 6-6131-01  
WAIKAPU, MAUI, HAWAII  
THK: 3-5-04: 99  
(DEPARTMENT OF WATER SUPPLY, COUNTY OF MAUI)

Thank you for the opportunity to review and comment on the  
subject document. We have examined the Draft Environmental  
Assessment (DEA) and have the following comments to offer:

1. The DEA states that, "the well will need to comply with  
Hawaii Administrative Rule, Title 11, Chapter 20,  
"Rules Relating to Potable Water Systems" prior to its  
use." Section 11-20-29 of Chapter 20 requires that all  
new sources of potable water serving a public water  
system be approved by the Director of Health prior to  
its use. Such an approval is based primarily upon the  
submission of a satisfactory engineering report which  
addresses the requirements set in Section 11-20-29.
2. The engineering report must identify all potential  
sources of contamination and evaluate alternative  
control measures which could be implemented to reduce  
or eliminate the potential for contamination, including  
treatment of the water source. At a minimum, the  
report will have to address the possible influence of  
wastewater disposal (unsewered area?), ditches (DEA  
text and figures note an "Everett Ditch"), etc. In  
addition, water quality analyses, performed by a  
laboratory certified or approved by the state of  
Hawaii, must be submitted as part of the report to  
demonstrate compliance with all drinking water

standards. Data from other wells in the vicinity may  
also be included to help assess the water quality.  
Additional tests may be required by the Director upon  
his review of the information submitted.

3. In an effort to clarify what is needed in engineering  
reports and to minimize unnecessary delays in the  
review process, we have provided guidance materials to  
the respective county Departments of Water Supply and  
consulting engineers (including Fukunaga and  
Associates) who have prepared such reports. Please  
refer to the following documents for more information:

- a. Safe Drinking Water Branch (SDWB) New Source  
Approval Process (revised 01/19/95).  
- SDWB New Source Approval Flowchart  
- Declaration of Covenants (sample form - 02/01/94)  
- Operation and Maintenance Certification  
(sample form - 02/01/94)
- b. Guidelines for Preparation of Preliminary  
Engineering Reports for New Potable Water Sources  
(Revised 01/02/96).  
- List of Minimum Required Contaminants to be  
Sampled and Analyzed (Revised 01/26/96).  
- Professional Engineer's Certification  
(sample form - 02/01/94)
- c. Drinking Water Testing Laboratories Certified by  
the Hawaii Department of Health, State  
Laboratories Division (Revised 01/26/96).

4. It is important to note that the drinking water well  
may affect future development in the surrounding area.  
Hawaii Administrative Rules, Title 11, Chapter 23,  
Underground Injection Control, prohibits the siting of  
an injection well within 1/4-mile of any drinking water  
source. In addition, Hawaii Administrative Rules,  
Title 11, Chapter 62, Wastewater Systems, requires that  
individual wastewater disposal systems be located at  
least 1,000 feet from the drinking water well.



Valerie Suzuki  
July 10, 1996  
Page 3

If you should have any questions, please contact Stuart Yamada of  
the Safe Drinking Water Branch at 586-4258.

Sincerely yours,

*Chaucer*  
WILLIAM WONG, Chief

Safe Drinking Water Branch  
Environmental Management Division

SY:la

C: Gordon Muraoka, Maui SDWB Sanitarian

1388 WAIPOUAN BOULEVARD / 210 FLOOR HONOLULU, HAWAII 96814 / PH: (808) 944-1521 / FAX: (808) 946-9379

September 6, 1996

Mr. William Chong, Chief  
Safe Drinking Water Branch, Environmental Division  
Department of Health  
State of Hawaii  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Mr. Chong:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated July 10, 1996 on the DEA. It is the Department of Water Supply's (DWS) intent to comply with the Hawaii Administrative Rules, Title 11, Chapter 20, "Rules Relating to Potable Water Systems" as stated in Item 1 of your comments. The DWS will also take into consideration your recommendations stated in Items 2, 3, and 4 of your comments to demonstrate compliance with all drinking water standards and to facilitate approvals.

Thank you for taking the time to review our environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.



received  
7-12-96



STATE OF HAWAII  
OFFICE OF HAWAIIAN AFFAIRS  
711 KAPIOLANI BOULEVARD, SUITE 500  
HONOLULU, HAWAII 96813-5248  
PHONE (808) 584-1888  
FAX (808) 584-1885

June 25, 1996


Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Blvd., 2nd. Floor  
Honolulu, HI 96814

Dear Ms. Suzuki:

Thank you for your letter of June 12, 1996 and for the opportunity to review the Draft Environmental Assessment (DEA) for the Waikapu Tank Site Exploratory Well, Island of Maui. The Department of Water Supply, County of Maui is proposing to drill and test an exploratory well in Waikapu in a County owned parcel. This deep well is intended to overcome problems associated with increasing salinity of water pumped from existing County owned Mokuhanu, Waihee, and Waiehu Heights wells.

The Office of Hawaiian Affairs (OHA) has no objections to the proposed exploratory drilling as it apparently bears no adverse impacts on adjacent lands nor upon existing flora or fauna and no known archaeological remains exist in the area. Please contact me, or Linda K. Delaney, INR Division Officer (594-1938), or Luis A. Manrique (594-1755), should you have any questions on this matter.

Sincerely yours,

  
Martha Ross  
Deputy Administrator

LM:lm

1388 KAPOLANI BOULEVARD / 2ND FLOOR-HONOLULU, HAWAII 96814 / PH. (808) 944-1821 / FAX (808) 948-8339

September 6, 1996

Ms. Martha Ross, Deputy Administrator  
Office of Hawaiian Affairs  
711 Kapiolani Boulevard, Suite 500  
Honolulu, Hawaii 96813-5249

Dear Ms. Ross:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 25, 1996 on the DEA. We note that you have no objections to the proposed project.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.





## University of Hawai'i at Mānoa

Environmental Center  
A Unit of Water Resources Research Center  
Crawford 317 • 2550 Campus Road • Honolulu, Hawaii 96822  
Telephone: (808) 956-7361 • Facsimile: (808) 956-3960

July 23, 1996  
EA: 00145

**Received**  
7-23-96

Mr. David Craddick  
County of Maui  
Department of Water Supply  
P.O. Box 1109  
Wailuku, Hawaii 96793-7109

Dear Mr. Craddick:

Draft Environmental Assessment (EA)  
Waikapu Tank Site Exploratory Well  
Waikapu, Maui

Existing County of Maui wells (Mokuhanu, Waihee, and Waiehu Heights Wells) tapping the Iao basal aquifer have shown an increase in salinity due to localized upconing of salt water caused by the high pumping rate. To alleviate this problem, new deep well sources are desired so that pumping can be more evenly distributed. Accordingly, the Department of Water Supply (DWS), proposes to drill and test an exploratory well for a new ground water source within the Iao aquifer. Based on preliminary investigations, the scope of the work includes the following:

- 1) Drilling an 18-inch diameter cased well to a depth of approximately 820 feet below ground elevation at the existing DWS Waikapu 300,000 gallon tank site on Waiko Road;
- 2) installing approximately 820 feet of 18-inch steel casing (bottom 80 feet perforated), and;
- 3) pump testing the aquifer from a range of 500 to 1400 gallons per minute.

This review was completed with the assistance of Paul Berkowitz and Tom Hawley, Environmental Center.

Our reviewers note several areas of deficiency within the draft EA which bear significantly on the prospects for adequate assessment of the proposed

Mr. David Craddick  
July 23, 1996  
Page 2

project. Much crucial information is lacking from the draft EA about the proposed exploratory well and about surrounding wells and other uses of the Iao aquifer. These deficiencies, noted below, must be rectified in the final EA.

### Page 1, Section B: Background Information

The background information provided in the draft EA generally delineates where the proposed well is located relative to the aquifer boundaries. However, both hydrological and geological characteristics of the aquifer, other than sustainable yield, are unspecified. As a result, it is difficult to assess the likelihood that a new well located half a mile from existing wells at Waikapu may lead to a deterioration of water quality in the Waikapu wells.

### Page 9, Section E: Water Quality

The draft EA states, "... the exploratory well may be a potential source of potable water." No mention is made, however, as to whether a new EA will be prepared if the proposed exploratory well is converted to production. If no new EA is planned, then all potential effects to the Iao aquifer need to be discussed at this stage of the environmental assessment process. The draft EA also fails to specify the water quality and quantity criteria that would warrant a conversion to production. We strongly urge the preparation of a second EA once sufficient data become available. Without another EA, comprehensive public review is essentially precluded because so little information is presently available.

### Page 10, Section B: Long-Term Impacts

The draft EA states, "The proposed new source, once on-line, will allow the pumping of the aquifer to be more evenly distributed." Our reviewers point out that as water is pumped, salt water intrusion will still occur, though perhaps not quite so unevenly. How will the proposed well affect overall salt concentrations? Further, how will the proposed well affect the level of the water table?

### General Comments

Other areas of the draft EA require improvement in the final version. The document fails to specify current use or pumpage data for the North Waihee aquifer, stating only that current demand for the Central Maui Water System is equal to the Iao Aquifer's sustainable yield of 20 mgd. Inclusion of information about the North Waihee aquifer would clarify the region's water system needs and capabilities. What is the sustainable yield of the North Waihee aquifer and how

September 6, 1996

Mr. John T. Harrison, Environmental Coordinator  
Environmental Center  
University of Hawaii  
Crawford 317  
2550 Campus Road  
Honolulu, Hawaii 96822

Dear Mr. Harrison:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated July 23, 1996 on the DEA. Our responses to your comments are as follows:

1. Page 1, Section B: Background Information

Waikapu Wells 1 and 2 were drilled by the State for exploratory purposes and are used as observation wells. These exploratory drillings showed that the Iao basal aquifer is composed of highly permeable Wailuku basalts which dip beneath a thick wedge of caprock formations consisting of alluvial slopewash deposits eroded from the mass of West Maui. In Waikapu Well 1, Wailuku Basalts were not encountered to its total depth of 1,020 feet or (-) 502 feet below sea level. The relative low permeability of the weathered formations encountered by Waikapu Well 2, between sea level and (-) 150 feet, msl, is evidenced by test results showing a yield of 100 gpm with a drawdown of 40 feet, or a specific well capacity of only 2.5 gpm per foot of drawdown. Similarly, Waikapu Well 1 test results yielded a specific well capacity of 2.0 gpm per foot of drawdown. Experience has shown that weathering can greatly reduce the permeability of basalt aquifers and their yield to wells. A well drilled at the Waikapu Tank site is expected to penetrate the more permeable unweathered basalts.

2. Page 9, Section E: Water Quality

The DEA is for the drilling and testing of the Waikapu Tank Site Exploratory Well. If the test results from the project is positive, the well will be developed into a groundwater source. At that time an environmental assessment will be prepared for the well's development. Specifying the water quality and quantity criteria that would warrant a conversion to production before the pump test is conducted and analyzed is too premature at this time. The proposed new well is expected to yield water with acceptable chloride levels since the well will be located away from the Molokau and Waihee Well Fields. The well will be pump tested from a range of 500 to 1400 gallons per minute.

FUKUNAGA & ASSOCIATES, INC.



Mr. David Craddick  
July 23, 1996  
Page 3

much water is currently being drawn from it? Our reviewers also suggest inclusion of the kind of maps frequently used for draft EAs by the City and County of Honolulu Board of Water Supply, which show all aquifers and their boundaries while listing the sustainable yield in parentheses. The accompanying text then lists current pumpage rates to show how close to sustainable yield the aquifers already are. Such information must be provided in the final EA and should compare demand figures to sustainable yields for both aquifers.

We also reiterate the importance of preparing a second draft EA to discuss the effects on the Iao aquifer should the proposed exploratory well be converted to production. The present draft EA lacks several important data regarding water quality and quantity. An exploratory well is simply a test, which by itself may entail minimal impacts. Conversion to production, however, could significantly impact the Iao aquifer--impacts which cannot be adequately addressed from the information contained in the present draft EA. Only upon preparation of a new draft EA will the public be afforded comprehensive knowledge about the proposed project and thus be able to adequately assess its potential impacts.

Thank you for the opportunity to comment.

Sincerely,

John T. Harrison  
Environmental Coordinator

cc: OEOC  
Roger Fujioka  
✓ Fukunaga and Associates, Inc.  
Paul Berkowitz  
Tom Hawley

Mr. John T. Harrison  
September 6, 1996  
Page 2

3. Page 10, Section B: Long-Term Impacts

In order to develop the aquifer in an optimum manner, new deepwell sources need to be located so that pumpage is more evenly distributed throughout the aquifer. The new sources will minimize salt water intrusion by permanently reducing pumpage at the Mokuahu Well Fields.

4. General Comments

The sustainable yield of the Waihee Aquifer is 8 million gallons per day. The aquifer extends from Waihee Valley to Kahakuloa Valley. Ground water development within the bank of Waihee but have not been developed into production wells. Withdrawal from the other private wells in the area is estimated to be a few thousand gallons per day. Given the potential for groundwater development in the Waihee Aquifer, the Maui County, Department of Water Supply is developing wells in the aquifer.

The above information including a map showing the aquifers and their boundaries will be incorporated in the final environmental assessment. Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

LINDA CROCKETT LINGLE  
Mayor



COUNTY OF MAUI  
PLANNING DEPARTMENT  
200 S. HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

July 15, 1996

received  
7-17-96

DAVID W. BLANE  
Director  
GWEN OHASHI HIRAGA  
Deputy Director

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

RE: DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR WAIKAPU  
TANK SITE EXPLORATORY WELL

Thank you for the opportunity to comment on the above-referenced project.

The proposed action is in keeping with the General Plan of the County of Maui, 1991 Update, which states, "To provide an adequate supply of potable and irrigation water to meet the needs of Maui County's residents." The facility also supports a major goal of the Wailuku-Kahului Community Plan by supporting the storage and delivery of an adequate supply and quality of water.

The review of the DEA for the proposed tank site and exploratory well has not identified any significantly adverse impacts based on the Significance Criteria listed in Section 11-200-12, of the Environmental Impact Statement Rules. Therefore, the Planning Department has no further comments this project.

Should additional clarification be required, please contact Mr. Don Schneider of this office at (808) 243-7735.

Very truly yours,

*David W. Blane*  
DAVID W. BLANE  
Director of Planning

DWB:DAS:cmp  
cc: Colleen Suyama, Planning Program Manager-Land Use Management Division  
Don Schneider, Staff Planner  
General File  
Project File (g:\planning\ahdon\waukank.dea)

1388 KAPOLAHU BOULEVARD / 2ND FLOOR-HONOLULU, HAWAII 96814 / PH: (808) 944-1821 / FAX: (808) 946-9139

September 6, 1996

Mr. David Blane, Director  
Planning Department  
County of Maui  
250 S. High Street  
Wailuku, Hawaii 96793

Dear Mr. Blane:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated July 15, 1996 on the DEA. We note that the proposed project is in line with the General Plan of the County of Maui, and the Wailuku-Kahului Community Plan.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA ASSOCIATES, INC.

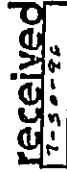


LINDA CROCKETT LINGLE  
Mayor  
CHARLES JENCKS  
Director  
DAVID C. GOODE  
Deputy Director  
AYRON SHIRAKOTO, P.E.  
Chief Staff Engineer



COUNTY OF MAUI  
DEPARTMENT OF PUBLIC WORKS  
AND WASTE MANAGEMENT  
LAND USE AND CODES ADMINISTRATION  
250 SOUTH HIGH STREET  
WAILUKU, MAUI, HAWAII 96793

RALPH HAGAMINE, L.S., P.E.  
Land Use and Codes Administration  
EASSE MILLER, P.E.  
Wastewater Reclamation Division  
LLOYD P.C.W. LEE, P.E.  
Engineering Division  
Solid Waste Division  
BRIAN HASHIRO, P.E.  
Highways Division



July 23, 1996

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kapiolani Blvd. Second Floor  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

SUBJECT: Draft Environmental Assessment  
WAIKAPU TANK SITE EXPLORATORY WELL  
TMK:(2) 3-5-004:099

We reviewed the subject application and have no comments at this time.

Sincerely,

*Ralph M. Jencks*  
CHARLES JENCKS  
Director of Public Works  
and Waste Management

da Engineering Division  
cc: Land Use and Codes Administration  
Solid Waste Division  
Wastewater Reclamation Division

g:\luc\cm\wks\spu.aa

1388 WAIKAPU TANK SITE EXPLORATORY WELL / 2ND FLOOR / HONOLULU, HAWAII 96814 / PH: (808) 944-1821 / FAX: (808) 946-9339

September 6, 1996  
Mr. Charles Jencks, Director  
Department of Public Works and Waste Management  
County of Maui  
250 S. High Street  
Wailuku, Hawaii 96793

Dear Mr. Jencks:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated July 23, 1996 on the DEA offering no comments.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

*Valerie Suzuki*  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.





DEPARTMENT OF  
PARKS AND RECREATION  
COUNTY OF MAUI

1580-C KAAHUMANU AVENUE  
WAILUKU, HAWAII 96791

LINDA CROCKETT LINGLE  
Mayor

HENRY OLIVA  
Director

ALLEN SHISHIDO  
Deputy Director

PLANNING & DEVELOPMENT  
(808) 243-7931

**received**  
6/24/96

June 20, 1996

Valerie Suzuki, Engineer  
Fukunaga & Associates, Inc.  
1388 Kapiniani Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

**SUBJECT:** Draft Environmental Assessment for Waikapu Tank Site Exploratory Well

We have reviewed the Draft Environmental Assessment for the above-referenced project and have no objections.

If you require additional information, please contact Patrick Matsui, Chief of Parks Planning and Development, at 243-7387.

Sincerely,

HENRY OLIVA  
Director

PTM

c: Patrick Matsui

1329 KAPOLAN BOULEVARD / 210 ROOF-HONOLULU, HAWAII 96814 / PH. (808) 944-1821 / FAX (808) 946-9139

September 6, 1996

Mr. Henry Oliva, Director  
Department of Parks and Recreation  
County of Maui  
1580-C Kaahumanu Avenue  
Wailuku, Hawaii 96793

Dear Mr. Oliva

**Subject:** Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your agency's comments dated June 20, 1996 on the DEA. We note that you have no objections to the proposed project.

Thank you for taking the time to review the environmental documents.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.







received  
6/26/96

June 24, 1996

Ms. Valerie Suzuki  
Fukunaga & Associates, Inc.  
1388 Kaplalani Boulevard, 2nd Floor  
Honolulu, Hawaii 96814

Dear Ms. Suzuki:

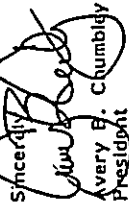
I am in receipt of your Draft Environmental Assessment for the drilling and testing of Waikapu Tank Site Exploratory Well, TMK 3-5-04:99, Waikapu, Maui, Hawaii.

As the surrounding land owner and in response to being identified under Section VI page 13 as a "private" agency or person to be consulted, I would submit the following concern which will need to be addressed:

Under "1. Project Description, Section C Proposed Project, subsection 3, page four (4); the well will be tested by pumping a range of 500 to 1,400 gallons per minute", where will this volume of water be dispersed? If it is to be put back into our Wahee Ditch which is in close proximity to the tank site, I am concerned about the chloride levels and other quality issues.

Waikapu Agribusiness will be happy to assist in whatever way possible. I will be assigning Clayton Suzuki to be your contact person.

Thank you.

Sincerely,  
  
Avery B. Chumbley  
President

ABC:am

cc: W. K. Tallett  
C. S. Suzuki

1388 KAPOLANI BOULEVARD / 2ND FLOOR / HONOLULU, HAWAII 96814 / PH. (808) 944-1221 / FAX (808) 946-9139

September 6, 1996

Mr. Avery B. Chumbley, President  
Waikapu Agribusiness Co., Inc.  
P.O. Box 520  
Waikapu, Hawaii 96793-0520

Dear Mr. Chumbley:

Subject: Drilling and Testing of the Waikapu Tank Site Exploratory Well  
Draft Environmental Assessment (DEA)

We are in receipt of your comments dated June 24, 1996 on the DEA. We concur with your concern over where the water from the pump test will be discharged. The most practical location to discharge the water would be Waikapu Stream located approximately 1600 feet south of the well site. The Maui County, Department of Water Supply would like to work with your staff to determine a feasible way to transport the well water from the well site to Waikapu Stream over Waikapu Agribusiness Company's lands.

Thank you for your timely response and continuing cooperation.

Sincerely yours,

FUKUNAGA & ASSOCIATES, INC.

  
Valerie Suzuki

cc: Department of Water Supply, Maui County

FUKUNAGA & ASSOCIATES, INC.



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