## Checklist

### Well Name or Location:
- Waihean Golf Course, Island: Hawaii

### Well Number:
- 0235-01

### Owner/Operator:
- Firm Name: OTAKA, INC.
- Contact Person: PATRICIA TANAKA
- Address: 2571 LEMON RD, HONOLULU, HI 96815
- Phone: 974-4067

### Landowner:
- Firm Name: SAME

### Dates:
- Date application received: 4 March 1991
- Date acknowledged receipt/request more info: 12 March 1991
- Date application accepted: 23 March 1991
- Suspense date (90 days): 22 June 1991
- Date filing fee deposited: 22 June 1991

### Application sent to following:

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### Additional Dates:
- Date agenda due: 
- Date submittal due: 
- Date submittal sent to applicant: 
- Date application approved or disapproved: 
- Date applicant notified of decision: 

### REMARKS:
| FROM: Ryan | DATE: 12/26/22 | SUSPENSE DATE: | |

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Monthly Water Use Reporting for Well No. 6235-01

This letter is a follow up to a phone conversation between you and Ryan Imata of Commission staff on December 2, 2002. We are transmitting a copy of the Monthly Water Use Report form for your use. You will need to turn this form in on a monthly basis, with quantities of water pumped based on meter readings at the beginning and end of the month to provide your total usage for the month.

This is also a reiteration of our letter to you dated January 22, 2001, stating that the failure to report monthly water usage may result in fines of up to $1000 per day.

If you have any questions, please contact Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai).

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

RI:ss
Attachment
CERTIFIED MAIL

Mr. Vernon Evangelista
Golf Course Superintendent
Waimea Country Club
P.O. Box 2155
Kamuela, HI 96743

Dear Mr. Evangelista:

Water Use Reporting From Waimea CC Well (Well No. 6235-01)

A review of our records show that Waimea Country Club has not submitted water use reports to the Commission on Water Resource Management (CWRM) since March 1994. Well operators are required to report monthly water use to CWRM. Under the Hawaii Administrative Rules §13-168-7 of the State Water Code Chapter 174C:

(b) The owner or operator of any well or stream diversion works or battery of such water sources shall file a report of total water usage on a regular monthly (calendar or work schedule) basis to the Commission on forms provided by the Commission on or before the end of the month following the month for which water usage is to be reported. The report may include other use-related information such as type of use, salinity, and water level, as may be deemed appropriate and reasonable by the Commission.

We ask that you resume reporting water use from Waimea CC well (Well No. 6235-01) to CWRM on a monthly basis. If there are any pumping records since March 1994, please submit these for our records. A copy of the official monthly water use report form is enclosed for your use. Failure to report water use is a violation of the State Water Code and the well owner may be subject to fines of up to $1000 per day.

If you have any questions or need assistance in filling out the water use report form, contact Mr. Neal Fujii of my staff at 808-587-0264.

Sincerely,

LINNEL T. NISHIOKA
Deputy Director

Enclosure
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Print your name, address, and ZIP Code in this box.

COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. Box 621
Honolulu, Hawaii 96809

First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10
June 18, 1999

Mr. Milton D. Pavao, Manager  
Department of Water Supply  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Mr. Pavao:

SUBJECT: EMERGENCY APPROVAL FOR THE WAIMEA COUNTRY CLUB WELL  
STATE WELL NO. 8-6235-01

The Department of Health, Safe Drinking Water Branch, acknowledges receipt of your June 14, 1999 letter regarding the emergency use of the Waimea Country Club Well. Due to the serious drought condition in the South Kohala water system, the Department of Health hereby grants conditional approval for the use of the Waimea Country Club well as drinking water source until midnight, December 31, 1999. In addition, the use of these wells as drinking water sources shall be subject to the following conditions:

1. The Waimea Country Club Well shall deliver potable water of the quality in compliance with Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems. The water quality shall be subject to verification by the Department of Health.

2. The Hawaii Department of Water Supply, in its operation of the Waimea Country Club Well, shall comply with all other relevant provisions of Hawaii Administrative Rules, Title 11, Chapter 20, Rules Relating to Potable Water Systems.

3. The Hawaii Department of Water Supply shall notify the Department of Health of any condition which may arise or be revealed that may contaminate the sources and pose a threat to human health.

4. The Waimea Country Club Well shall be properly disinfected prior to entry into the distribution system.
5. This emergency approval does not imply acceptance of the future engineering report for the Waimea Country Club Well. The Hawaii Department of Health will evaluate the report and may require additional data or information when it is submitted for our review and approval.

The Department of Health reserves the right to suspend or revoke this conditional approval upon either a finding of violation on any of the above conditions or a determination of a threat to public health from factors which may arise in the future. Thank you for your attention and concern to these matters.

If you should have any questions, please contact Ms. Queenie Komori of the Safe Drinking Water Branch, Engineering Section, at 586-4258.

Sincerely,

GARY GILL
Deputy Director for Environmental Health

QK:gm

c: Charley Ice, DLNR
SDWB Monitoring Section
SDWB Enforcement Section
Glenn Tomori, East Hawaii SDWB Sanitarian
April 29, 1996

Ms. Rae M. Loui, Deputy Director
Commission on Water Resource Management
Department of Land & Natural Resources
State of Hawaii
P. O. Box 621
Honolulu, HI 96809

Subject: Waimea Country Club Well No. 6235-01
Pump and Pumping Rate

Dear Ms. Loui:

In response to your letter of February 23, 1996, we have again reviewed our records. The pump installation is a nominal 500 gpm (see attachments) pump. It has not been altered from the original pump as described on the well completion report. A stop watch check of the actual flow rate shows a rate of 540 gpm through the meter. This slightly higher rate is the result of system hydraulic operations placed in service after the pump was installed and permit received. This results in a slight decrease in pumping head (TDH).

The Department of Water reported a rate of 590 gpm in their letter of February 2, 1996, however, we believe that this was taken from the rate needle (which is incorrect) and not the totalizer.

We hope the above information is useful. Please let me know if more information is needed or if you require further action on our part.

Thank you for your patience in this matter.

Sincerely yours,

Pat Tanaka
Director - Special Projects

A New Tradition in Hawaiian Hospitality

HAWAIIAN REGENT HOTEL
2552 Kalakaua Avenue
Honolulu, Hawaii 96815
Phone: (808) 922-5511
Fax: (808) 921-5255

HAWAIIAN WAIKIKI BEACH HOTEL
2570 Kalakaua Avenue
Honolulu, Hawaii 96815
Phone: (808) 922-2511
Fax: (808) 923-3650

KONA SURF RESORT & COUNTRY CLUB
78-128 Ehukai Street
Kailua-Kona, Hawaii 96740
Phone: (808) 322-3411
Fax: (808) 322-3245

KONA COUNTRY CLUB
78-7000 Alii Drive
Kailua-Kona, Hawaii 96740
Phone: (808) 322-2595
Fax: (808) 322-3361

FAIRWAY VILLA RESORT
2345 Ala Wai Boulevard
Honolulu, Hawaii 96815
Phone: (808) 923-1364
PUMPING TESTS: Referenc.

KERR WATER SOURCE DEVELOPMENT, J.V.

DATE OF WELL COMPLETION 12-3-91 DATE OF PUMP INSTALLATION 11-5-91

G. GROUND ELEVATION (meas) 2814.05 ft.

Top of Drilling Platform (meas) 2520.13 ft.

Height of drilling platform above ground surface 6.05 ft.

Bank mark and method used to determine ground elevation 2810.5 ft.

H. TOTAL DEPTH OF WELL BELOW GROUND 1413 ft.

I. HOLE SIZE: 22" Inch dia. from 0 ft. to 1415 ft. below ground

Inch dia. from 0 ft. to 1415 ft. below ground

J. CASING INSTALLED: 14 in. I.D. x 250 ft. wall solid section to 1135 ft. ft. below ground

Type of perforation Standard louvered perforation - 17/8 x 2 3/8", 2" center, 60 holes per foot

K. ANNULUS:

Grounded from 0 ft. to 1152 ft. below ground

Gravel packed from 1194 ft. to 1152 ft. below ground

L. PERMANENT PUMP INSTALLATION:

Pump type, make, serial No. Neuger 8 stage PN102, no Serial #

Capacity 500 gpm

Motor type, H.P., volts, r.p.m. Attlantic 250 HP, 400 V, 294 Amps, 2460 RPM

Depth of pump intake section 1212 ft. below ground elevation

Depth of bottom of casing 1212 ft. below ground elevation

M. PROPOSED USE

Water Supply/Irrigation

Initial Water Level 1157 ft. below ground.

Initial Chloride 10 ppm.

Initial Date 11-19-91

P. PUMPING TESTS: Reference point (R.P.) used: Ground which elevation is 2814.05 ft.

Date 11-19-91

Start water level 1157 ft. below R. P.

End water level 1158.3 ft. below R. P.

Depth of well 1415 ft. below R. P.

Elapsed time (hours) Draw. Cl. Temp.

Rate (gpm) 0.1 8 64

Elapsed time (hours) Rate (gpm) Draw. Cl. Temp.

Q. DRILLER'S LOG:

Depth, ft. Rock Description & Remarks Water Level, ft.

0 to 121 Mixed layers/cinder 729 to 760 Firm

121 to 168 Hard 760 to 787 Firm

168 to 176 Soft/Hardy 787 to 855 Firm to soft/mixed

176 to 215 Firm/mixed beds 855 to 910 soft to medium

215 to 267 Mixed beds w/firm 910 to 922 firm

267 to 290 Loose/unconsolidated 922 to 977 mixed w/firm

290 to 367 very soft 977 to 1020 soft/firm/soft

392 to 628 loose/ratty 1020 to 1068 hard rock

628 to 667 soft to firm 1068 to 1378 red/cinder/cone 1137

667 to 702 Sandy firm 1378 to 1408 Hard to loose & soft

702 to 729 Soft 1408 to 1423 Loose & soft

REMARKS:

Submitted by (print) C. Dale Strongquist

Signature C. Dale Strongquist

Date 12-17-91

FIGURE 6
REF:CWRM-KY

Ms. Patricia M. Tanaka
Director, Special Projects
Otaka, Inc.
2571 Lemon Road
Honolulu, HI 96815

Dear Ms. Tanaka:

Pump Installation and Well Completion Report

Thank you for sending the Pump Installation and Well Completion report for Waimea Country Club Well No. 6235-01. You have completed the conditions required under the Well Construction and Pump Installation Permit that was issued to you on May 29, 1991.

If you have any additional questions, please contact Ms. Rae M. Loui at 587-0214.

Very truly yours,

WILLIAM W. PATY

cc: Waimea Water Services
EQUIPMENT IDENTIFICATION
and DESCRIPTION

PUMPS

-Pleuger PN102
-8 Stage
-Serial Number: None
-Design Point: 500 GPM @ 1300' TDH
-9.56" O.D.

MOTOR

-250 HP Hitachi
-9.125" O.D.
-Serial Number: G892010H
-460v, 294 amps, 3460 RPM @ Full Load

CABLE

-Conductor size: 350 MCM
-Insulation: Neoprene
-Jacket: EPR Hypalon
-O.D.: 0.97"
-Wt.: 1309#/1000'

CONTROL PANEL

-250 HP, size 6
-400 amp max.
-480 volts
Reda Pump Performance Curve
1 Stage — PN102 — 60 Hz
PN Series — 3500 RPM

T.D.H. AT 500 GPM = 1264 FEET

8 STAGES

T D P M  0  100  200  300  400  500  600  700  800  900  1000
m³/day  1000  2000  3000  4000  5000

6PM = BPD/34.3

Capacity
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Steve Bowles called 4/12 & faxed him background info on this. He said he would be responding in writing about pump specs and that it is rated @ 500 gpm.
April 5, 1996

Ms. Lyann Mizuno
Commission on Water Resource Management
Dept. of Land and Natural Resources
P. O. Box 621
Honolulu, HI  96809

Re: Waimea Country Club Well

Dear Ms. Mizuno:

Please accept my apologies for not replying sooner. Per our phone conversation, I am currently trying to locate the specifications for the pump; however, it appears that the pump has a capacity of 500 gpm, according to our records. We will continue to search for the specifications and will contact the manufacturer for more information.

I should be able to respond to your inquiry by 4/19.

Thank you for your patience in this matter.

Sincerely yours,

Patricia M. Tanaka
Director - Special Projects
TO Ray

DATE 4/12/96 TIME 11:28 AM

WHILE YOU WERE OUT

M Steve Bolds

of

Phone 885-5941

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RETURNED YOUR CALL

Message

Asker what was going on w/well.

Operator
TO ________________________

DATE 3/27/46  TIME ________________________

WHILE YOU WERE OUT

M Pat Tanaka

of Otake Inc.

Phone 924 - 4067

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RETURNED YOUR CALL


Operator
Ms. Patricia M. Tanaka  
Director, Special Projects  
Otaka, Inc.  
2571 Lemon Road  
Honolulu, Hawaii 96815

Dear Ms. Tanaka:

It has come to our attention that you may be in violation of your pump installation permit for the Waimea Country Club Well (Well No. 6235-01). Condition No. 4 of the Well Construction/Pump Installation Permit, which was issued to you on May 29, 1991, states that the permit is for installation of a 500 gallons per minute (gpm) capacity, or less, pump. Your Well Completion Report, dated December 17, 1991, also indicates that the installed pump has a capacity of 500 gpm.

However, the enclosed letter from the County of Hawaii, Department of Water Supply informs us that a 590 gpm pump was installed. If this is the case, please submit an after-the-fact Pump Installation Permit Application (enclosed) by March 23, 1996 or you may be subject to fines. If this is an error, please provide us with information verifying the capacity of the installed pump reported on your Well Completion Report.

If you have any questions, please call Lyann Mizuno at (808) 587-0255.

Sincerely,

RAE M. LOUI  
Deputy Director

LM:fc

Enclosures
February 2, 1996

Ms. Rae M. Loui, Deputy Director  
State of Hawaii  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, HI 96809

SOUTH KOHALA DROUGHT  
ALTERNATE SOURCES

We are still in a drought condition for our South Kohala system. Our Waikoloa Reservoirs storage level is down to 59 million gallons (total storage capacity is 150 MG). We are proceeding with the planning and implementation of several emergency and temporary projects using existing wells in the area. These wells are not owned by the Department.

Following is a description of the projects and the wells:

1. Waimea Country Club Well (Well No. 6235-01)  
   This well is outfitted with a 590-GPM pumping unit and is used by Waimea Country Club for their golf course irrigation purposes. The connection into our system has been completed.
   
   We are planning to use this well for about four days pumping time each week.

2. Parker Ranch Well (Well No. 6239-01)  
   A temporary deepwell pumping unit rated at about 300 GPM is currently being installed.
   
   We plan to operate this pumping unit continuously.

3. Puukapu Deepwell (Well No. 6337-01)  
   This project is currently under contract with the Department of Land and Natural Resources, State of Hawaii. Upon project completion and acceptance, the deepwell pumping system will be turned over to the Department of Agriculture (DOA) for their Lalamilo Irrigation Water System.

   Water brings progress...
We have received approval of the pumped well water on an interim basis until such time that the DOA will need the source water for their irrigation system.

The deepwell pump is rated at 1,000 GPM. We are planning to use this water on a continuous basis.

For more clarifications, please contact Mr. Gary Kawasaki at 969-1421.

Milton D. Pavao, P.E.
Manager.

GK
**WELL COMPLETION REPORT**

**A. STATE WELL NO.** 6235-01  
**WELL NAME** Irrigation Well  
**ISLAND** Hawaii  
**B. LOCATION** Mud Lane, Waimea  
**TAX MAP KEY** 4-7-07:7

**C. WELL OWNER** Otaka, Inc.  
**D. DRILLING OR PUMP INSTALLATION CONTRACTOR** KKRC Water Source Development, J.V.  
**E. TYPE OF RIG** Rotary - National T-32  
**DRILLER** Robert J. Richardson  
**F. DATE OF WELL COMPLETION** (12-3-91)  
**DATE OF PUMP INSTALLATION** (11-5-91)

**G. GROUND ELEVATION (mL):** 2814.05 ft.

**H. TOTAL DEPTH OF WELL BELOW GROUND:** 1415 ft.

**I. HOLE SIZE:** 22" Inch dia. from 0 ft. to 1415 ft. below ground  
Inch dia. from 1415 ft. to 1415 ft. below ground  
Inch dia. from 1415 ft. to 1415 ft. below ground

**J. CASING INSTALLED:**
- 14 ft. I.D. x 2.250 in. wall solid section to 1198 ft. below ground  
- 15 in. I.D. x 2.250 in. wall perforated section to 1398 ft. below ground  
Type of perforation: Standard louvered perforation - 1/4" X 2 3/8", 2" center, 60 holes per foot

**K. ANNULUS:**
Grouted from 0 ft. to 1152 ft. below ground  
Gravel packed from 1152 ft. to 1152 ft. below ground

**L. PERMANENT PUMP INSTALLATION:**
- Pump type, make, serial No.: Pleuger 8 stage PN02, no Serial #  
- Capacity: 500 gpm  
- Motor type, H.P., voltage, r.p.m.: Hitachi, 250 HP, 460 V, 294 Amps, 3460 RPM  
- Depth of pump intake setting: 1322 ft. below Ground Level which elevation is 2814.05 ft.  
- Depth of bottom of airline: 1290 ft. below Ground Level which elevation is 2814.05 ft.

**M. PROPOSED USE:** Water Supply/Irrigation

**N. INITIAL WATER LEVEL:** 1157 ft. below ground.  
**O. INITIAL CHLORIDE:** ppm

**P. PUMPING TESTS:** Reference point (R.P.) used: Ground which elevation is 2814.05 ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>End water level</th>
<th>Depth of well</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
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</thead>
<tbody>
<tr>
<td>11-19-91</td>
<td>1157</td>
<td>1158.3</td>
<td>1415</td>
<td>250</td>
<td>7.4</td>
<td>80</td>
<td>to 0</td>
</tr>
<tr>
<td>to</td>
<td>1157</td>
<td>1158.3</td>
<td>1415</td>
<td>250</td>
<td>7.4</td>
<td>80</td>
<td>to 0</td>
</tr>
<tr>
<td>to</td>
<td>Waimea Water Services will be sending</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
<td>to</td>
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<tr>
<td>to</td>
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**Q. DRILLER'S LOG:**

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<tr>
<th>Depth, ft.</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level, ft.</th>
<th>Depth, ft.</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level, ft.</th>
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</thead>
<tbody>
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<td>0 to 121</td>
<td>Mixed layers/cinder</td>
<td>729 to 760</td>
<td>Firm</td>
<td>729</td>
<td>760</td>
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<tr>
<td>121 to 168</td>
<td>Hard</td>
<td>760 to 787</td>
<td>Firm &amp; soft</td>
<td>760</td>
<td>787</td>
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<tr>
<td>168 to 176</td>
<td>Soft/Ratty</td>
<td>787 to 855</td>
<td>Firm to soft/mixed</td>
<td>855</td>
<td>910</td>
</tr>
<tr>
<td>176 to 215</td>
<td>Firm/mixed beds</td>
<td>855 to 910</td>
<td>soft to medium</td>
<td>910</td>
<td>922</td>
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<tr>
<td>215 to 267</td>
<td>Mixed beds w/firm</td>
<td>910 to 922</td>
<td>firm</td>
<td>922</td>
<td>977</td>
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<tr>
<td>267 to 290</td>
<td>Loose-unconsolidated</td>
<td>922 to 977</td>
<td>mixed w/firm</td>
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<td>1020</td>
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<tr>
<td>290 to 392</td>
<td>very soft</td>
<td>1020 to 1068</td>
<td>soft/firm/soft</td>
<td>1068</td>
<td>1378</td>
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<tr>
<td>392 to 628</td>
<td>loose/ratty</td>
<td>1068 to 1378</td>
<td>hard rock</td>
<td>1378</td>
<td>1090</td>
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<tr>
<td>628 to 667</td>
<td>soft to firm</td>
<td>1090</td>
<td>red cinder zone 1157</td>
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</table>

**STATE OF HAWAI'I**  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
**Division of Land and Natural Resources**  
**Office of Water Resource Management**

**INSTRUCTIONS:** Please print or type and submit completed report within 30 days of well completion to the Division of Water & Land Development, P.O. Box 373, Honolulu, HI 96809. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 548-1543, Hydrology. Geology Section for assistance.
Ms. Patricia M. Tanaka  
Director, Special Projects  
Otaka, Inc.  
2571 Lemon Road  
Honolulu, Hawaii 96815

Dear Ms. Tanaka:

It has come to our attention that you may be in violation of your pump installation permit for the Waimea Country Club Well (Well No. 6235-01). Condition No. 4 of the Well Construction/Pump Installation Permit, which was issued to you on May 29, 1991, states that the permit is for installation of a 500 gallons per minute (gpm) capacity, or less, pump. Your Well Completion Report, dated December 17, 1991, also indicates that the installed pump has a capacity of 500 gpm.

However, the enclosed letter from the County of Hawaii, Department of Water Supply informs us that a 590 gpm pump was installed. If this is the case, please submit an after-the-fact Pump Installation Permit Application (enclosed) by March 23, 1996 or you may be subject to fines. If this is an error, please provide us with information verifying the capacity of the installed pump reported on your Well Completion Report.

If you have any questions, please call Lyann Mizuno at (808) 587-0255.

Sincerely,

RAE M. LOUI  
Deputy Director

LM:fc

Enclosures
Mr. Milton D. Pavao, Manager  
County of Hawaii  
Department of Water Supply  
25 Aupuni Street  
Hilo, Hawaii 96720  

Dear Mr. Pavao:

Thank you for your letter of February 2, 1996, in which you describe the steps being taken by the DWS to meet the demands of the South Kohala drought condition through the use of alternative sources. All three wells that were mentioned already have pump installation permits from the Commission on Water Resource Management. Please note that the Parker Ranch Well is Well No. 6239-02 and not 6239-01, as indicated in your letter.

Since there are no water management areas on the island of Hawaii, and the proper permits have been issued, you do not need to notify us of such action in the future. Thank you for keeping us apprised of the situation in this region.

If you have any questions, please call Lyann Mizuno at (808) 587-0255.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

LM:fc
February 2, 1996

Ms. Rae M. Loui, Deputy Director  
State of Hawaii  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, HI  96809

SOUTH KOHALA DROUGHT  
ALTERNATE SOURCES

We are still in a drought condition for our South Kohala system. Our Waikoloa Reservoirs storage level is down to 59 million gallons (total storage capacity is 150 MG). We are proceeding with the planning and implementation of several emergency and temporary projects using existing wells in the area. These wells are not owned by the Department.

Following is a description of the projects and the wells:

1. **Waimea Country Club Well (Well No. 6235-01)**

   This well is outfitted with a 590-GPM pumping unit and is used by Waimea Country Club for their golf course irrigation purposes. The connection into our system has been completed.
   
   We are planning to use this well for about four days pumping time each week.

2. **Parker Ranch Well (Well No. 6239-01)**

   A temporary deepwell pumping unit rated at about 300 GPM is currently being installed.
   
   We plan to operate this pumping unit continuously.

3. **Puukapu Deepwell (Well No. 6337-01)**

   This project is currently under contract with the Department of Land and Natural Resources, State of Hawaii. Upon project completion and acceptance, the deepwell pumping system will be turned over to the Department of Agriculture (DOA) for their Lalamilo Irrigation Water System.

   ... Water brings progress...
We have received approval of the pumped well water on an interim basis until such time that the DOA will need the source water for their irrigation system.

The deepwell pump is rated at 1,000 GPM. We are planning to use this water on a continuous basis.

For more clarifications, please contact Mr. Gary Kawasaka at 969-1421.

Milton D. Pavao, P.E.
Manager

GK
Ms. Patricia M. Tanaka
Director, Special Projects
Otaka, Inc.
2571 Lemon Road
Honolulu, HI 96815

Dear Ms. Tanaka:

Pump Installation and Well Completion Report

Thank you for sending the Pump Installation and Well Completion report for Waimea Country Club Well No. 6235-01. You have completed the conditions required under the Well Construction and Pump Installation Permit that was issued to you on May 29, 1991.

If you have any additional questions, please contact Ms. Rae M. Loui at 587-0214.

Very truly yours,

WILLIAM W. PATY

cc: Waimea Water Services
August 17, 1992

Mr. William Paty
Chairperson
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Waimea Country Club Well No. 6235-01
Permanent Pump

Dear Mr. Paty:

In December of 1991, the final driller's Well Completion Report was submitted to your office by KKRC Water Development JV. On April 24, 1992, Waimea Water Services submitted a detailed report, on our behalf, to Mr. Glenn Bauer of CWRM. We completed our testing program in June of 1992, and have converted the test pump to a permanent pump installation.

We have included water level measuring (via air line) and a flow meter in our installation and have begun monthly pumpage reporting.

We are requesting your final approval as required under the Well Construction and Pump Installation Permit (also attached).

Sincerely yours,

Patricia M. Tanaka
Director - Special Projects

attachment
TO: Otaka, Inc.  
2571 Lemon Road  
Honolulu, HI 96815  

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct, test, and install a pump in Waimea Golf Course Well (Well No. 6235-01) for golf course irrigation, is approved subject to the following conditions:

1. The Division of Water Resource Management (DWRM), P.O. Box 373, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The proposed well construction and pump installation shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

3. If historic remains such as artifacts, shell or charcoal deposits, burials, and stone platforms, pavings, or walls are found during construction, the applicant shall stop work in the immediate area and contact the State Historic Preservation Division immediately. They will assess the situation and make recommendations for mitigative action, if needed.

4. The permit shall be for construction, testing, and installation of a 500
gallons per minute capacity, or less, pump in the well, as determined by the pumping test results. The applicant shall submit to DWRM the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage on a monthly basis.

6. The following shall be submitted to DWRM within 30 days after completion of the work:
   a. Well Completion Report.
   b. As-built sectional drawing of the well.

7. The applicant shall comply with all applicable laws, rules, and ordinances.

8. This permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within 24 months from the date of permit issuance.

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

MAY 29 1991
Date of Issuance

cc: USGS
    Department of Health
        Safe Drinking Water Branch
        Ground Water Protection Program
    Hawaii Department of Water Supply
    Waimea Water Services
DATE: 4/29/92

TO: Glenn Brown

FROM: John

FAX #: 808-885-7851

TOTAL PAGES INCL. COVER PAGE: 18

CALL 885-5941 SHOULD YOU HAVE PROBLEMS WITH THIS TRANSMISSION. MAHALO.
To: Pat Tanaka
Fr: John Stubbart
Re: Waimea Country Club Well Report
Date: 24 Dec 91

The Well Report for the Waimea Country Club Well (State Well No. 6235-01) is enclosed for your information and use. A copy of the "Well Completion Report" has been transmitted to the Division of Water Resource Management, D.L.N.R., State of Hawaii. Under separate cover WWS has transmitted a copy of the Brewer Water Quality Analysis dated Dec. 05, 1991 to the same office.

With the well complete you will need to establish a reporting program to certain State office of use and quality. The conditions of your permit require you to report your use monthly and to provide a monitoring program.

As indicated in the attached report, a continuous aquifer test of at least 72 hours should be conducted once electric power is provided to the well.

The pump operations should be carefully thought out to extend the life of the equipment. The pump should not be turned off and on in a cyclic manner. The controls should be set up to allow long pumping periods into appropriately sized storage.

Waimea Water Services can assist you with these and other operating needs. Please contact me if you have any questions.

We have appreciated working with you and wish you success in your projects.
WAIMEA COUNTRY CLUB
WELL # 1
State Well No. 6235-01
AS BUILT
DECEMBER 1991

Prepared by
WAIMEA WATER SERVICES

and

ISLAND RESOURCES
WAIMEA COUNTRY CLUB
WELL #1
State Well No. 6235-01

TABLE OF CONTENTS

AS BUILT REPORT
PUMP AS BUILT
HYDROGEOLOGIC SECTION
WELL SECTION
PUMP TEST GRAPHS
WATER QUALITY DATA
ALIGNMENT CHART
As indicated in the attached well drilling report, the Waimea Country Club well #1 is intended to supply up to 600,000 gallons per day (gpd) for purposes of golf course irrigation. The well was designed and budgeted to be drilled to sea level or slightly below. Based on the original water study at the time of the land purchase, (Bowles 1990), it was suspected the land might be situated above a buried extension of the Kohala Mountain (Figure 1). The Kohala Mountain, in the vicinity of Waipio Valley, is known to contain numerous volcanic dikes and faults within the lavas of the Pololu volcanic series. Such volcanic barriers cause groundwater to be impounded at elevations of up to 3000 feet above sea level. These vast storage compartments contain as much as a trillion gallons of groundwater. The percolating rainfall passes through these compartments enroute to sea. The Waimea Country Club well has tapped into a previously unknown but suspected extension of this resource.

Well drilling (the 12 inch pilot hole) commenced July 8, 1991. Water was first struck at a depth of about 350 feet, where the bore penetrated through the fresher surface lavas which appear to be inter-fingered Mauna Kea and Kohala lavas. Immediately below these fresh lavas is the weathered surface of Pololu Volcanic series of the Kohala Mountain. The first water was perched on this weathered surface and as the hole was deepened, the water level followed the depth of the boring. The 12 inch bore tapped major groundwater body at a depth of 1170' or an elevation of about 1650 feet.

The 12 inch bore was video taped and a pump test was run on August 19, 1991. No measurable drawdown was detected at 300 gpm during the 70 minute test. Water quality was sampled during the test. The following data was recorded:

- Temperature: 66 degrees fahrenheit
- Conductivity: 224 EC (start) to 193 EC (end)
- Chloride: 15 to 20 mg/l
- TDS: 97.2 (end)

Based on the evidence provided by the testing, rock cuttings and video taping, a conclusion was reached that the bore had tapped a high level groundwater compartment contained within the lavas of the Kohala Mountain. The yield and water quality during the preliminary test were excellent and it was decided to redesign the well by reducing the planned depth by approximately 1400 feet and because of the falling water, extend the grout seal to about the water table of 1170 feet. The changes were made to facilitate the possible use of the well as a potable source in the future.

P.O. Box 1656 • Kamuela, Hawaii 96743
POSSIBLE HYDROGEOLOGIC SECTION

See map 5 of Bowles and Nance 1985 for location

FIGURE 1B
The well was reamed to a diameter of 24 inches, cased and grouted by November 22, 1991. The As Built dimensions of the well are shown in Figure 2. It was decided, based on test results of the 12 inch bore, to purchase and install a 500 gpm (gallons per minute) pumping unit. This pump was installed by November 11, 1991.

A series of pumping tests were run between November 19 to 21, 1991. The results of these tests are contained in Figure 3. Water quality analysis are listed in Figure 4. Both the yield and quality are excellent. The well can readily be pumped at a continuous rate of 500 gpm for extended periods. The well is capable of producing at rates in excess of 1500 gpm if required in the future.

Upon completion of the permanent electrical connection of the pump, it is recommended that the well be pumped on continuous basis for at least 76 hours. This test should be performed under control of an experienced hydrogeologist in order to establish aquifer characteristics. Such a test was not possible in the November testing sequence as a result of noise complaints from the nearby residents.


P.O. Box 1656 - Kamuela, Hawaii 96743
WAIMEA COUNTRY CLUB

WELL # 1
State Well No. 6235-01

PUMP
AS BUILT

The Waimea Country Club well #1 pump was purchased from and installed by the KKRC Water Development Joint Venture. The pump package was assembled by the REDA pump company and consists of deep set 250 hp, 460 volt, submersible pump, motor, cable, control panel, column and column valves. Figure 2 shows the installed dimensions of the pump.

Upon casing, a series of tests were run to evaluate the plumbness and alignment. These tests, as called for in the specifications, consisted of running a 40 foot long pump dummy, caging and use of Totco punch system. The plot of the Totco results are shown in Figure 5. The well survey results indicated that the uni-directional total is within the standard deviation of 20.4 inches per hundred as recommended by AWWA (American Water Works Association).

A manual, complete with warranty information, pump curves, and necessary electrical and hydraulic specifications is included with this report. The report should be filed in appropriate locations including an on-site location, such as the golf course maintenance office.

A complete well head piping system has not yet been designed. By State law, the piping must include an appropriate water meter and water level measuring access. In addition, all pumpage must be reported to the Division of Water Resource Management on a regular basis monthly.

The contracted drillers Well Completion Report is attached as Exhibit 6. This report was sent to the State as required.
WELL SECTION

WAIKEA COUNTRY CLUB
WELL U-1
State Well No. 6259-31

NOTE TO SCALE
DEC. 91

1152', CONCRETE FILL

281.4' TO 2514'
Existing ground level

16' or 30' CONDUCTOR W/ 28 YDS GRUBB.

22' MIN. DIA.

4" MIN. ANGULAR SPACE

14' ID. 8.268 THICK SOLID WELL CASING

6" NPT COLUMN PIPE (18.97K/ft)
20'POINT 62 PINTS TOTAL

CONCRETE FILL OF ANGULAR SPACE

WATER LEVEL AT 1157' DEPTH

AGGREGATE 3/8' GRAVEL

MAX COMMERCIAL CEMENT BAGGIES 3' APART

SHALLOW AIR LINE

DEEP AIR LINE

LOW CHECK VALVE

PERFORATED WELL SCREEN 14' ID

PUMP INTAKE

AUXILIARY

CASEING SHOE

FIGURE 2
WAIMEA COUNTRY CLUB
19 NOV - 21 NOV 91 AT 540 GPM

TIME - DAYS OF TEST

* DRAWDOWN
WAIMEA COUNTRY CLUB
19 NOV - 21 NOV 91 AT 540 GPM
WAIMEA COUNTRY CLUB
19 NOV - 21 NOV 91 AT 540 GPM

FLOW RATE IN GPM

TIME - DAYS OF TEST

FLOW RATE - GPM
**LABORATORY ANALYSIS REPORT**

Environmental Services Division

**CLIENT:** WAIMEA WATER SERVICES  
P.O. Box 326  
Waimea, Hawaii 96743

**ATTN:** JOHN STUBBART

**JOB NUMBER:** 5772

**DATE:** DEC. 05, 1991

**SAMPLE LOCATION:** WAIMEA COUNTRY CLUB

Date Sampled: 11/22/91  
Date Received: 11/22/91

**Matrix:** WATER

**SAMPLE #:** IRRIGATION WELL

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<tr>
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<th>Reporting Limits mg/l</th>
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**ND = NOT DETECTED**

Page 1 of 2

Approved By: [Signature]
WELL VARIATION

Made with 1.5 degree Totco

FIGURE 5
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<td>ND</td>
<td>12/02/91</td>
<td>0.0001</td>
<td>8080</td>
</tr>
<tr>
<td>Toxaphene</td>
<td>ND</td>
<td>12/02/91</td>
<td>0.0005</td>
<td>8080</td>
</tr>
<tr>
<td>2,4-D</td>
<td>ND</td>
<td>12/05/91</td>
<td>0.005</td>
<td>8150</td>
</tr>
<tr>
<td>2,4,5-TP (Silvex)</td>
<td>ND</td>
<td>12/05/91</td>
<td>0.001</td>
<td>8150</td>
</tr>
</tbody>
</table>

ND = NOT DETECTED
well plumbness graphing
WAI MEA COUNTRY CLUB WELL

<table>
<thead>
<tr>
<th>feet</th>
<th>reading % of degrees</th>
<th>plumbness from center</th>
<th>accum. total inches</th>
<th>Accum. total feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>0.25</td>
<td>5.1</td>
<td>5.1</td>
<td>0.425</td>
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<tr>
<td>200</td>
<td>0.25</td>
<td>5.1</td>
<td>10.2</td>
<td>0.85</td>
</tr>
<tr>
<td>300</td>
<td>0.25</td>
<td>5.1</td>
<td>15.3</td>
<td>1.275</td>
</tr>
<tr>
<td>400</td>
<td>0.25</td>
<td>5.1</td>
<td>20.4</td>
<td>1.7</td>
</tr>
<tr>
<td>500</td>
<td>0.5</td>
<td>10.2</td>
<td>30.6</td>
<td>2.55</td>
</tr>
<tr>
<td>600</td>
<td>0.83</td>
<td>16.932</td>
<td>47.532</td>
<td>3.961</td>
</tr>
<tr>
<td>700</td>
<td>0.83</td>
<td>16.932</td>
<td>64.464</td>
<td>5.372</td>
</tr>
<tr>
<td>800</td>
<td>0.41</td>
<td>8.364</td>
<td>72.828</td>
<td>6.069</td>
</tr>
<tr>
<td>900</td>
<td>0.66</td>
<td>13.464</td>
<td>86.292</td>
<td>7.191</td>
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<tr>
<td>1000</td>
<td>0.75</td>
<td>15.3</td>
<td>101.592</td>
<td>8.466</td>
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<tr>
<td>1100</td>
<td>0.45</td>
<td>9.18</td>
<td>110.772</td>
<td>9.231</td>
</tr>
</tbody>
</table>

1 degree = 1.7' = 20.4"
APR-29-1992 08:52 FROM KUAHEA WATER SERVICES TO 15870219 P.17

INSTRUCTIONS: Please print or type and submit completed report within 10 days of well completion to the Division of Water & Land Development, P.O. Box 372, Honolulu, HI 96813. An abridged drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 144-1120, Hydrology, Geology section for assistance.


Date 11-19-91
Start water level 1157 ft. below R. P.
End water level 1153.3 ft. below R. P.
Depth of well 1145 ft. below R. P.
Time of reading 6:14 PM
Elevation 1150.5 ft.
Depth of well 1145 ft. below R. P.
Temp. 64°F

Q. DRILLER’S LOG:

<table>
<thead>
<tr>
<th>Depth ft.</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level ft.</th>
<th>Rock Description &amp; Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 121</td>
<td>Mixed layers/clayey</td>
<td>729 to 760</td>
<td>Firm &amp; sand</td>
</tr>
<tr>
<td>121 to 169</td>
<td>Hard</td>
<td>780 to 787</td>
<td>Firm &amp; soft</td>
</tr>
<tr>
<td>168 to 176</td>
<td>Soft/Ratty</td>
<td>787 to 855</td>
<td>Firm to soft/mixed</td>
</tr>
<tr>
<td>176 to 213</td>
<td>Mixed/media/soft</td>
<td>855 to 910</td>
<td>Soft to medium</td>
</tr>
<tr>
<td>213 to 243</td>
<td>Mixed media/soft</td>
<td>910 to 977</td>
<td>Firm</td>
</tr>
<tr>
<td>243 to 262</td>
<td>Mixed media/soft</td>
<td>977 to 1020</td>
<td>Soft/medium</td>
</tr>
<tr>
<td>262 to 290</td>
<td>Mixed media/soft</td>
<td>1020 to 1068</td>
<td>Mixed w/soft</td>
</tr>
<tr>
<td>290 to 328</td>
<td>Mixed media/soft</td>
<td>1068 to 1378</td>
<td>Hard rock</td>
</tr>
<tr>
<td>328 to 637</td>
<td>Mixed media/soft</td>
<td>1378 to 1400</td>
<td>Mixed media/soft</td>
</tr>
<tr>
<td>637 to 705</td>
<td>Mixed media/soft</td>
<td>1400 to 1423</td>
<td>Loose &amp; soft</td>
</tr>
<tr>
<td>705 to 750</td>
<td>Mixed media/soft</td>
<td>1423 to 1450</td>
<td>Loose &amp; soft</td>
</tr>
</tbody>
</table>

REMARKS: Submitted by Spratt C. Dale Strongman  Date 12-19-91

KREC WATER SOURCE DEVELOPMENT, J.V.  Partner

TOTAL P.17
<table>
<thead>
<tr>
<th>TO:</th>
<th>INIT:</th>
<th>PLEASE:</th>
<th>REMARKS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. SAKODA</td>
<td>K. Oshiro</td>
<td>See Me</td>
<td>Glenn - could you send any pump test info, etc. of Waimea</td>
</tr>
<tr>
<td>S. Samuels</td>
<td>R. Hardy</td>
<td>Call</td>
<td>G. C. Well to:</td>
</tr>
<tr>
<td>Q. T. Than</td>
<td>Glen</td>
<td>Review &amp; Comment</td>
<td>Craig Emerson 968-6704 (call first - FAX no. is same as tel. no.)</td>
</tr>
<tr>
<td>R. LOUI</td>
<td>S. Kokubun</td>
<td>Take Action</td>
<td>He's thinking of drilling a well in the vicinity.</td>
</tr>
<tr>
<td>G. MATSUMOTO</td>
<td>Y. SHIROMA</td>
<td>Investigate &amp; Report</td>
<td>thanks, RO</td>
</tr>
</tbody>
</table>
To: Ed Sakoda  
Division of Water Resource Management  

Fr: John Stubbart  

Re: Well No. 6235-01  
Waimea Country Club Well Water Quality Data  

Date: 24 Dec 91  

Enclosed is the water quality data done by Brewer for well No. 6235-01. I have enclosed a copy of the Well Completion Report already filed by the drilling contractor.
TO: STATE OF HAWAII
Division of Water & Land Dev.
PO Box 373
Honolulu HI 96809

DATE: 12-17-91

ATTN: ________________________

WE ARE SENDING YOU HEREWITH xx
UNDER SEPARATE COVER ______
THE FOLLOWING ITEMS:

____ Plans ______ Shop Drawings ______ Purchase Order
____ Specifications ______ Samples ______ Copy of Letter
____ Change Order ______ Other ________________

THESE ARE TRANSMITTED AS CHECKED BELOW:

____ For Approval ______ Approved as Submitted
xx For Your Use ______ Approved as Noted
____ As Requested ______ Returned for Corrections
____ For Review & Comment ______ Other ____________________

REMARKS: ____________________________________________
_____________________________________________________
_____________________________________________________
_____________________________________________________

COPY TO: Pat Tanaka, OTAKA, INC.; John Stubbart, WAIMEA WATER SERVICES

SIGNED: _________________________
Project Secretary

P.O. Box 5685 • Kailua-Kona, Hawaii 96745-5685 • Telephone (808) 324-1420 • Fax (808) 322-9497
**WELL COMPLETION REPORT**

**INSTRUCTIONS:** Please print or type and submit completed report within 35 days of well completion to the Division of Water & Land Development, P.O. Box 373, Honolulu, HI 96809. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 548-1543, Hydrology, Geology Section for assistance.

<table>
<thead>
<tr>
<th>A. STATE WELL NO.</th>
<th>B. LOCATION</th>
<th>C. WELL OWNER</th>
<th>D. DRILLING OR PUMP INSTALLATION CONTRACTOR</th>
<th>E. TYPE OF RIG</th>
<th>F. DATE OF WELL COMPLETION</th>
<th>G. GROUND ELEVATION</th>
<th>H. TOTAL DEPTH OF WELL BELOW GROUND</th>
</tr>
</thead>
<tbody>
<tr>
<td>6235-01</td>
<td>Mud Lane, Waimea</td>
<td>Okura, Inc.</td>
<td>KKRC WATER SOURCE DEVELOPMENT, J.V.</td>
<td>National T-32</td>
<td>11-5-91</td>
<td>2814.05 ft.</td>
<td>1415 ft.</td>
</tr>
</tbody>
</table>

**I. HOLE SIZE:**
- 22" inch dia. from 0 ft. to 1415 ft. below ground
- 20" inch dia. from 0 ft. to 1415 ft. below ground

**J. CASING INSTALLED:**
- 14' in. I.D. x 250 ft. in well solid section to 1198 ft. below ground
- 14' in. I.D. x 250 ft. in well perforated section to 1398 ft. below ground

**K. ANNULUS:**
- Grouted from 0 ft. to 1152 ft. below ground
- Gravel packed from 1194 ft. to 1152 ft. below ground

**L. PERMANENT PUMP INSTALLATION:**
- Pump type: make, serial No. Pleuger 8 stage PN102, no Serial #
- Capacity: 500 gpm
- Motor type, H.P., voltage, r.p.m. 400 v. 294 AMPS, 3460 R.P.M.
- Depth of pump intake setting: 1415 ft. below ground level
- Depth of bottom of slitting: 2814.05 ft. below ground level

**M. PROPOSED USE:**
- Water Supply/Irrigation

**N. INITIAL WATER LEVEL:**
- Date and time of measurement: 8-14-91, 10:00 AM

**O. INITIAL CHLORIDE:**
- Date and time of sampling: 11-21-91, 10:00 PM

**P. PUMPING TESTS:**
- Reference point (R.P.) used: Ground which elevation is 2814.05 ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>End water level</th>
<th>Depth of well</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Temp. (F)</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Temp. (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-19-91</td>
<td>1157 ft. below R. P.</td>
<td>1158.3 ft. below R. P.</td>
<td>1415 ft. below R. P.</td>
<td>240 h.</td>
<td>55 ft.</td>
<td>86 F.</td>
<td>240 h.</td>
<td>55 ft.</td>
<td>86 F.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Q. DRILLER'S LOG:**

<table>
<thead>
<tr>
<th>Depth, ft.</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level, ft.</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level, ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 121</td>
<td>Mixed layers/cinder</td>
<td>729 to 760</td>
<td>Firm</td>
<td>760 to 787</td>
</tr>
<tr>
<td>121 to 168</td>
<td>Hard</td>
<td>760 to 787</td>
<td>Firm &amp; soft</td>
<td>855 to 910</td>
</tr>
<tr>
<td>168 to 176</td>
<td>Soft/Batty</td>
<td>787 to 855</td>
<td>Firm to soft/mixed</td>
<td>910 to 922</td>
</tr>
<tr>
<td>176 to 215</td>
<td>Firm/mixed beds</td>
<td>922 to 977</td>
<td>soft to medium</td>
<td>1020 to 1068</td>
</tr>
<tr>
<td>215 to 267</td>
<td>Mixed beds</td>
<td>1068 to 1378</td>
<td>mixed w/firm</td>
<td>1378 to 1408</td>
</tr>
<tr>
<td>267 to 290</td>
<td>Loose/unconsolidated</td>
<td>1408 to 1423</td>
<td>red cinder zone 1157</td>
<td>1423 to 1448</td>
</tr>
<tr>
<td>290 to 320</td>
<td>Very soft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>320 to 628</td>
<td>loose/ratty</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>628 to 667</td>
<td>Soft to firm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>667 to 698</td>
<td>fairly firm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>698 to 729</td>
<td>Soft</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**REMARKS:**

Submitted by (print) C. Dale Stromquist

Signature: C. Dale Stromquist

Title: Partner

Date: 12-17-91

Commodity Water Resource Management
Department of Land and Natural Resources
Division of Water Resource Management

- KKRC WATER SOURCE DEVELOPMENT, J.V.
- Partner
WAIMEA COUNTRY CLUB WELL - AS BUILT
WELL NO. 6296-01

GND EL: 2814.00

- 14' ID x .250 casing
- 22" open hole
- 1'6" of 30" conductor w/20 yds grouting

LST 6" note 18.97#/ft.
20' 6" (19.7' total)

(1657' MSL) ▼ 1157'

- Water Table 1194' (1197')
- Cement blankets
- 20' L 1198'

- DTW?
- Bottom of casing

- 1197' Upper Check Valve
- Aggregate Bridge w/30' gravel seal
- 1194' Seal to 1192'

- 1122' Shallow Air Line
- 1295' Deep Air Line
- 1295' Low Check Valve
- Pump intake 1222'
- Louvered casing
- Bottom of casing 1398'
- Casing shoe

TD 22" Hole e 1915'
**State of Hawai`i**

**Commission on Water Resource Management**

**Division of Water Resource Management**

**WELL COMPLETION REPORT**

**INSTRUCTIONS:** Please print or type and submit completed report within 30 days of well completion in the Division of Water & Land Development, P.O. Box 313, Honolulu, HI 96809. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 548-7544, Hydrology, Geology Section for assistance.

<table>
<thead>
<tr>
<th>A. STATE WELL NO.</th>
<th>6235-01</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. LOCATION</td>
<td>Mad Lane, Wai`ema</td>
</tr>
<tr>
<td></td>
<td>ISLAND OF HAWAI`I</td>
</tr>
<tr>
<td>C. WELL OWNER</td>
<td>Otaka, Inc.</td>
</tr>
<tr>
<td>D. DRILLING OR PUMP INSTALLATION CONTRACTOR</td>
<td>KKRC WATER SOURCE DEVELOPMENT, J.V.</td>
</tr>
<tr>
<td>E. TYPE OF RIG Rotary - National T-32</td>
<td></td>
</tr>
<tr>
<td>F. DATE OF WELL COMPLETION</td>
<td>12-3-91</td>
</tr>
<tr>
<td>G. DATE OF PUMP INSTALLATION</td>
<td>11-5-91</td>
</tr>
<tr>
<td>H. GROUND ELEVATION (ma)</td>
<td>2814.05 ft</td>
</tr>
<tr>
<td>I. TOTAL DEPTH OF WELL BELOW GROUND</td>
<td>1415 ft</td>
</tr>
<tr>
<td>J. CASING INSTALLED:</td>
<td>14 in. I.D. x 250 in. well solid section to 1198 ft. below ground</td>
</tr>
<tr>
<td></td>
<td>12 in. I.D. x 250 in. well perforated section to 1498 ft. below ground</td>
</tr>
<tr>
<td>K. ANNULUS:</td>
<td>Grouted from 0 ft. to 1152 ft. below ground</td>
</tr>
<tr>
<td>L. PERMANENT PUMP INSTALLATION:</td>
<td>Pump type, make, serial No Pneumatic 8 stage PN102, no Serial #</td>
</tr>
<tr>
<td></td>
<td>Capacity 500 ppm</td>
</tr>
<tr>
<td></td>
<td>Motor type, H.P., voltage, R.P.M. ETL Tested, 250 H.P., 460 V, 2940 RPM</td>
</tr>
<tr>
<td></td>
<td>Depth of pump intake setting 242 ft. below Ground Level which elevation is 2814.05 ft.</td>
</tr>
<tr>
<td>M. PROPOSED USE</td>
<td>Water Supply/Irrigation</td>
</tr>
<tr>
<td>N. INITIAL WATER LEVEL</td>
<td>1157 ft. below ground</td>
</tr>
<tr>
<td>O. INITIAL CHLORIDE</td>
<td>5 ppm</td>
</tr>
<tr>
<td>P. PUMPING TESTS:</td>
<td>Reference point (R.P.) used: Ground which elevation is 2814.05 ft.</td>
</tr>
<tr>
<td>Q. DRILLER'S LOG:</td>
<td>Depth, ft.</td>
</tr>
<tr>
<td></td>
<td>Rock Description &amp; Remarks</td>
</tr>
<tr>
<td>R. REMARKS:</td>
<td>Depth, ft.</td>
</tr>
</tbody>
</table>

**Remarks:**

Submitted by (print) C. Dale Stromquist

Signature C. Dale Stromquist

Date 12-17-91
INSTRUCTIONS: Please print or type and submit completed report within 30 days of well completion to the Division of Water and Land Development, P.O. Box 313, Honolulu, HI 96809. An as-built drawing of the well and chemical analysis, if available, should also be submitted. If necessary, phone 588-7331. Hydrology, Geology Section for assistance.

A. STATE WELL NO. 6239-01  
B. LOCATION  
C. WELL OWNER  
D. DRILLING OR PUMP INSTALLATION CONTRACTOR  
E. TYPE OF DRILLING MACHINERY - National T-32  
F. DATE OF WELL COMPLETION  
G. GROUND ELEVATION (well) 2014.05 ft.  
H. TOTAL DEPTH OF WELL BELOW GROUND  
I. HOLE SIZE:  
J. CASING INSTALLED:  
K. ANNHULUS:  
L. PERMANENT PUMP INSTALLATION:  
M. PROPOSED USE  
N. INITIAL WATER LEVEL  
O. INITIAL CHLORIDE  
P. PUMPING TESTS: Reference point (R.P.) used:  
Q. DRILLER'S LOG:  
R. REMARKS:  

Submitted by (Print)  C. Dale Strongquist  
Title  
Signature  
Date 12-17-91  

FIGURE 6
CLIENT: WAIMEA WATER SERVICES  
P O Box 326  
Waimea, Hawaii 96743

ATTN: JOHN STUBBART  
JOB NUMBER: 5772

DATE: DEC. 05, 1991

SAMPLE LOCATION: WAIMEA COUNTRY CLUB

 Date Sampled: 11/22/91  
Date Received: 11/22/91

<table>
<thead>
<tr>
<th>ANALYSIS</th>
<th>RESULT</th>
<th>ANALYSIS DATE</th>
<th>Reporting Limits mg/l</th>
<th>METHOD NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.002</td>
<td>206.3</td>
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<tr>
<td>Barium</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.1</td>
<td>208.1</td>
</tr>
<tr>
<td>Cadmium</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.005</td>
<td>213.1</td>
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<tr>
<td>Chromium</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.01</td>
<td>218.1</td>
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<tr>
<td>Lead</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.01</td>
<td>239.1</td>
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<td>Mercury</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.0002</td>
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<td>Selenium</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.002</td>
<td>270.3</td>
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<td>Silver</td>
<td>ND</td>
<td>11/27/91</td>
<td>0.01</td>
<td>272.1</td>
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<td>Calcium</td>
<td>0.71</td>
<td>11/27/91</td>
<td>0.01</td>
<td>215.2</td>
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<tr>
<td>Sodium</td>
<td>0.93</td>
<td>11/27/91</td>
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<td>236.1</td>
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<td>Iron</td>
<td>ND</td>
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<td>243.1</td>
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<tr>
<td>Manganese</td>
<td>0.01</td>
<td>11/27/91</td>
<td>0.01</td>
<td></td>
</tr>
<tr>
<td>Potassium</td>
<td>1.03</td>
<td>11/27/91</td>
<td>0.01</td>
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<td>11/27/91</td>
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<tr>
<td>Nitrogen, Nitrate</td>
<td>0.29</td>
<td>11/25/91</td>
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<td>Chloride</td>
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<td>Sulfides</td>
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<td>Sulfate</td>
<td>4</td>
<td>11/26/91</td>
<td>1</td>
<td>375.4</td>
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<td>Fluoride</td>
<td>0.07</td>
<td>11/26/91</td>
<td>0.05</td>
<td>340.2</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>0.17</td>
<td>11/27/91</td>
<td>0.10</td>
<td></td>
</tr>
</tbody>
</table>

ND = NOT DETECTED

Approved By: [Signature]
**LABORATORY ANALYSIS REPORT**

**CLIENT:** WAIMEA WATER SERVICES  
P O Box 326  
Waimea, Hawaii 96743  

**SAMPLE LOCATION:** WAIMEA COUNTRY CLUB  

**DATE:** DEC. 05, 1991  

**DATE SAMPLED:** 11/22/91  
**DATE RECEIVED:** 11/22/91  

**MATRIX:** WATER  
**SAMPLE #:** IRRIGATION WELL

### ANALYSIS

<table>
<thead>
<tr>
<th></th>
<th>RESULT</th>
<th>Analysis Date</th>
<th>Reporting Limits mg/l</th>
<th>METHOD NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Dissolved Solids</strong></td>
<td>64</td>
<td>11/25/91</td>
<td>1</td>
<td>160.1</td>
</tr>
<tr>
<td><strong>pH (units)</strong></td>
<td>8.0</td>
<td>11/22/91</td>
<td>1</td>
<td>150.1</td>
</tr>
<tr>
<td><strong>Alkalinity (mg CaCO3/l)</strong></td>
<td>57</td>
<td>11/22/91</td>
<td>1</td>
<td>310.1</td>
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<tr>
<td><strong>Hardness (mg CaCO3/l)</strong></td>
<td>4.1</td>
<td>11/25/91</td>
<td>0.5</td>
<td>130.2</td>
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<tr>
<td><strong>Silica</strong></td>
<td>37.3</td>
<td>11/25/91</td>
<td></td>
<td>370.1</td>
</tr>
<tr>
<td><strong>Conductivity (umhos/cm)</strong></td>
<td>150</td>
<td>11/25/91</td>
<td></td>
<td>120.1</td>
</tr>
</tbody>
</table>

| **Endrin**             | ND     | 12/02/91      | 0.00002                | 8080          |
| **Lindane**            | ND     | 12/02/91      | 0.00002                | 8080          |
| **Methoxichlor**       | ND     | 12/02/91      | 0.0001                 | 8080          |
| **Toxaphene**          | ND     | 12/02/91      | 0.0005                 | 8080          |
| **2,4-D**              | ND     | 12/05/91      | 0.005                  | 8150          |
| **2,4,5-TP (Silvex)**  | ND     | 12/05/91      | 0.001                  | 8150          |

**ND = NOT DETECTED**

Page 2 of 2

Approved By: [Signature]

*Signature*
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. BOX 621
HONOLULU, HAWAII 96809

WELL CONSTRUCTION/PUMP INSTALLATION PERMIT

for
Waimea Golf Course Well
Well No. 6235-01
Waimea, Hawaii

TO: Otaka, Inc.
2571 Lemon Road
Honolulu, HI 96815

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct, test, and install a pump in Waimea Golf Course Well (Well No. 6235-01) for golf course irrigation, is approved subject to the following conditions:

1. The Division of Water Resource Management (DWRM), P.O. Box 373, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The proposed well construction and pump installation shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct and pump water from a well shall not constitute a determination of correlative water rights. The permittee is notified and by this provision understands that the quantity of water taken from the well could be reduced by the Commission in the future. This permit is not a commitment that the pump capacity permitted here or even some lesser amount is guaranteed in the future.

3. If historic remains such as artifacts, shell or charcoal deposits, burials, and stone platforms, pavings, or walls are found during construction, the applicant shall stop work in the immediate area and contact the State Historic Preservation Division immediately. They will assess the situation and make recommendations for mitigative action, if needed.

4. The permit shall be for construction, testing, and installation of a 500
gallons per minute capacity, or less, pump in the well, as determined by the pumping test results. The applicant shall submit to DWRM the test results and proposed permanent pump information, based on the test, for approval by the Chairperson. No permanent pump may be installed and no water used from the well without the Chairperson's approval.

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage on a monthly basis.

6. The following shall be submitted to DWRM within 30 days after completion of the work:
   a. Well Completion Report.
   b. As-built sectional drawing of the well.

7. The applicant shall comply with all applicable laws, rules, and ordinances.

8. This permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work proposed in the permit application shall be completed within 24 months from the date of permit issuance.

MAY 29 1991
Date of Issuance

cc: USGS
    Department of Health
    Safe Drinking Water Branch
    Ground Water Protection Program
    Hawaii Department of Water Supply
    Waimea Water Services

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management
Otaka, Inc.
2571 Lemon Road
Honolulu, HI 96815

Dear Applicant:

The Commission on Water Resource Management will be acting on your permit application(s) at its meeting on May 15, 1991, at 9:00 a.m., at the Wailuku Community Center, Wailuku, Maui.

The agenda and submittal(s) concerning your application(s) are enclosed for your information.

You or your representative are invited to attend the meeting.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:fc
Encl.
DATE: 17 Apr 91
TO: ED SAKANO
FROM: JOHN STUBBART
FAX #: 808-883-7851
TOTAL PAGES INCL. COVER PAGE: 3
CALL 885-5941 SHOULD YOU HAVE PROBLEMS WITH THIS TRANSMISSION. MAHALO.
To: Ed Sakoda  
Division of Water Resource Management  
DLNR  
Fr: John Stubbart  
Re: Waimea Golf Course Well  
Letter from Dept. of Public Works  
Date: 16 Apr 91  

In regards to your fax concerning the letter from the Department of Public Works about the Waimea Golf Course Well being within a one-quarter mile radius of an existing drywell, we wish to make the following response.

We do not believe that the proximity of the drywell to the well poses a problem. The performance of the drywell should not have any significant impact on the well. The well will have its annulus grouted to a minimum of 500 feet or to water level, whichever is shallower. The well is also intended for irrigation use.

However, if it is required, the well can be moved beyond the 1/4 mile radius as shown in the attached map.

cc: Pat Tanaka  
Sidney Fuki
To: Pat Tanaka  
Otaka Inc.  

Fr: John Stubbart  

Re: State Dept. of Health Memo  

Date: 4 Apr 91  

The memo directed to Mr. Paty from the department of Health will be included in the recommendations from the Water Commission when we go in for approval. The items noted will be addressed as follows:

1. If the well is to be used as a potable source the owner will notify the Safe Drinking Water Branch.

2. There are no plans, as we know, to use water from a potable water system supplement the irrigation. If this were done with this well, BCA would need to provide sufficient system engineering to handle the concerns expressed.

3. The well will be designed to prevent the possibility of groundwater contamination from groundwater at the well site.

Call if you have any questions.
DATE: 16-APL-91
TO: ED SAHOTA - DLNR
FAX #: 548-6052
FROM: JOAN STUBBECK
FAX #: 808-885-7851
TOTAL PAGES INCL. COVER PAGE: 3
CALLED 885-5941 SHOULD YOU HAVE PROBLEMS WITH THIS TRANSMISSION. MAHALO.

DRAFT - CALL ME WITH COMMENTS
To: Ed Sakoda  
Division of Water Resource Management  
DLNR

Fr: John Stubbart

Re: Waimea Golf Course Well  
Letter from Dept. of Public Works

Date: 16 Apr 91

In regards to your fax concerning the letter from the Department of Public Works about the Waimea Golf Course Well being within a one-quarter mile radius of an existing drywell, we wish to make the following response.

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However, if it is required, the well can be moved beyond the 1/4 mile radius as shown in the attached map.

cc: Pat Tanaka  
Sidney Fuki
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name: Steve Bowles
Company: Waimea Water Services
From: Ed Sakada
Date: 4-16-91 Time: 8:59 am

Message: Any comments on letter from Dept of Public Works re: Waimea Golf Course Well?

Total number of pages (including Transmittal Page): 3

If you do not receive all of the pages legibly, please call back: (808) 548-7449

Sending Facsimile Number: (808) 548-6022
Receiving Facsimile Number: (885-7851)

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE) COULD NOT BE SENT

** COUNT **
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*** SEND ***

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<th>COMMENT</th>
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<tbody>
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<td>4-16-91</td>
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<td>3</td>
<td>E205/ OK</td>
</tr>
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TOTAL 0:02'15" 3
March 18, 1991

MR MANABU TAGOMORI
DEPUTY DIRECTOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P O BOX 621
HONOLULU HI  96809

SUBJECT:  WELL CONSTRUCTION PERMIT APPLICATION

We have reviewed the subject permit applications and have no objections to the following proposed wells being constructed:

1.  DWS-Honokohau Exploratory Well
    Well No. 4188-02
    TMK:  7-4-05:02

2.  DWS-Pil honua Wall 3 Exploratory
    Well No. 4208-01
    TMK:  2-8-09:03

3.  DWS-Waiaha Exploratory Well
    Well No. 3958-01
    TMK:  7-5-14:18

The following proposed well will be constructed within a one-quarter mile radius from an existing drywell, as shown on the attached map. The proposed well should be relocated and resubmitted for further review.

1.  Waimea GOLF COURSE WELL
    Well No. 6286-01
    TMK:  4-7-09:17

Since this department does not keep track of privately owned drywells, your department should verify the presence of any private drywells in these areas.

ROBERT K. YANABU, Division Chief
Engineering Division

Attachment

CH:st

TRANSMISSION REPORT

THIS DOCUMENT (REDUCED SAMPLE ABOVE)
WAS SENT

** COUNT **
# 3

*** SEND ***

<table>
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</tr>
</tbody>
</table>

TOTAL 0:01'57"  3  XEROX TELECOPIER 7020
FACSIMILE TRANSMITTAL PAGE

Please deliver the following pages to:

Name:  Steve Bowles
Company:  Waimea Water Services
From:  Ed Sakoda
Date:  4-16-91  Time:  8:59 am
Message:  Any comments on letter from Dept. of Public Works re: Waimea Golf Course Well?

Total number of pages (including Transmittal Page):  3

* * * * * * *

If you do not receive all of the pages legibly, please call back: (808) 548-7643

Sending Facsimile Number:  (808) 548-6052
Receiving Facsimile Number:  (885-7851)
March 18, 1991

MR MANABU TAGOMORI
DEPUTY DIRECTOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P O BOX 621
HONOLULU HI  96809

SUBJECT: WELL CONSTRUCTION PERMIT APPLICATION

We have reviewed the subject permit applications and have no objections to the following proposed wells being constructed:

1. DWS-Honokohau Exploratory Well
   Well No. 4158-02
   TMK: 7-4-05:02

2. DWS-Pihonua Well 3 Exploratory
   Well No. 4208-01
   TMK: 2-5-09:03

3. DWS-Waiaha Exploratory Well
   Well No. 3858-01
   TMK: 7-5-14:16

The following proposed well will be constructed within a one-quarter mile radius from an existing drywell, as shown on the attached map. The proposed well should be relocated and resubmitted for further review.

1. Waimea Golf Course Well
   Well No. 6235-01
   TMK: 4-7-07:17

Since this department does not keep track of privately owned drywells, your department should verify the presence of any private drywells in these areas.

ROBERT K. YANABU, Division Chief
Engineering Division

Attachment

CKY:st 961-8327
MEMORANDUM

TO: Manabu Tagomori, Deputy Director
    Commission on Water Resource Management

FROM: Don Hibbard, Administrator
    State Historic Preservation Division

SUBJECT: Well Construction and Pump Installation Permit --
          Occasional Irrigation of Golf Turf (Otaka, Inc.)
          Waikoeo, Hamakua, Hawaii
          TMK: 4-7-07: 17

HISTORIC PRESERVATION PROGRAM CONCERNS:

We believe that construction of this proposed well will have "no effect" on historic sites. According to our records, no archaeological survey has taken place in the project area. However, a survey conducted nearby on similar terrain found no historic sites. Also, the probability of archaeological sites in this area is relatively low because historic records indicate that the area was forested during much of the prehistoric period and remains are scant in such areas.

If historic remains such as artifacts, shell or charcoal deposits, burials, and stone platforms, pavings, or walls are found during construction, please direct the applicant to stop work in the immediate area and contact the State Historic Preservation Division at 587-0047 immediately. Our office will assess the situation and make recommendations for mitigative action, if needed.
March 22, 1991

The Honorable William W. Paty, Chairperson
Commission on Water Resource Management
Department of Land and Natural Resources
State of Hawaii
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Paty:

SUBJECT: WELL CONSTRUCTION AND PUMP INSTALLATION PERMIT APPLICATION
WAIMEA GOLF COURSE WELL
STATE WELL NO. 6235-01
KAMUELA, HAWAII

Thank you for the opportunity to review and comment on the subject document. We have examined the application and have the following comments to offer:

1. The application indicates that the subject well will be used for golf course irrigation. Thus, the Department's Administrative Rules, Title 11, Chapter 20, "Potable Water Systems," are not applicable. However, if the proposed use were to change, the applicant must notify the Safe Drinking Water Branch.

2. If the irrigation system is supplemented with potable water, adequate measures must be taken to eliminate cross-connections and backflow conditions. The potable and non-potable water systems should be clearly labeled and physically separated by an air gap or an approved backflow preventer to avoid contaminating the potable water supply.

3. The proposed well is situated above the Underground Injection Control (UIC) line. Land areas above the UIC line are considered to contain underground sources of drinking water. Thus, it is essential that the well be designed and constructed to prevent the possibility of groundwater contamination. For example, the well should have a concrete well pad and full grouting to prevent seepage or floodwaters from migrating down the well shaft.
Mr. William W. Paty  
Page 2  
March 22, 1991

If you should have any questions, please contact the Safe Drinking Water Branch at 543-8258.

Very truly yours,

JOHN C. LEWIN, M.D.  
Director of Health

cc: Patricia Tanaka  
Otaka, Inc.
2571 Lemon Road  
Honolulu, HI 96815
March 19, 1991

State Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

WELL CONSTRUCTION AND PUMP INSTALLATION PERMIT APPLICATIONS
APPLICANT: DWS-HONOKOHAU EXPL. WELL - 4158-02; DWS-PIIHOUNUA WELL 3 EXPL. - 4208-01; DWS-WAIHA EXPL. WELL - 3858-01; WAIMEA GOLF COURSE WELL - 6235-01

We have reviewed the subject applications and have no comments.

H. William Sewake
Manager

WA

... Water brings progress...
Mr. Thomas K. Kaulukukui, Sr.
Chairman & Trustee-At-Large
Office of Hawaiian Affairs
1600 Kapiolani Blvd., Suite 1500
Honolulu, Hawaii 96814

Attn: Ms. Linda Delaney, Land & Natural Resources Division

Dear Mr. Kaulukukui:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

<table>
<thead>
<tr>
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<td>Kuilima Resort Golf Course</td>
<td>4159-03</td>
<td>Well and Pump</td>
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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Honorable John C. Lewin, M.D.
Director
Department of Health
State of Hawaii
1250 Punchbowl Street
Honolulu, Hawaii 96813

Attn: Mr. Thomas Arizumi, Drinking/Water Branch

Dear Dr. Lewin:

Well Construction and Pump Installation Permit Application(s)

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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Honorables Hoaliku L. Drake
Director
Department of Hawaiian Home Lands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mrs. Drake:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
Dear Mrs. Drake:

Well Construction and Pump Installation Permit Application(s)

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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact Manabu Tagomori, Deputy Director at 548-7533.

Very truly yours,

[Signature]

WILLIAM W. PATY

Enc.
Ms. Patricia Tanaka  
Otaka, Inc.  
2571 Lemon Road  
Honolulu, Hawaii 96815

Dear Ms. Tanaka:

We have received your application and filing fee for a permit to construct and install a pump in a well (Well No. 6235-01) at Kamuela, Hawaii (TMK 4-7-07:17). We are reviewing the application for completeness.

Should you have questions, please call the Regulation Branch of the Division of Water Resource Management at 548-7541.

Sincerely,

[Signature]

MANABU TAGOMORI  
Deputy Director

NF: mh
MEMORANDUM

TO: Don Hibbard, Director
   Historic Preservation Program

FROM: Manabu Tagomori, Deputy Director
   Commission on Water Resource Management

SUBJECT: Well Construction and Pump Installation Permit Application(s)

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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact our Regulation Branch at 548-7541.

DN:bm
Enc.
Mr. Bruce C. McClure  
Chief Engineer  
Department of Public Works  
County of Hawaii  
25 Aupuni Street  
Hilo, Hawaii 96720

Dear Mr. McClure:

Well Construction and Pump Installation Permit Application(s)

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Please review the application(s) pursuant to your area of concern and submit your comments to us, orally or in writing, by March 29, 1991.

Should you have any questions, please contact our Regulation Branch at 548-7541.

Sincerely,

[signature]

MANABU TAGOMORI  
Deputy Director

DN:bm  
Enc.
Mr. William Sewake, Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii  96720

Dear Mr. Sewake:

Well Construction and Pump Installation Permit Application(s)

Transmitted for your review and comment is a copy of the following permit application(s):

<table>
<thead>
<tr>
<th>Island</th>
<th>Well Name</th>
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Sincerely,

[Signature]

MANABU TAGOMORI
Deputy Director

DN:bm
Enc.
APPLICATION FOR

WELL CONSTRUCTION PERMIT
X PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print in ink and send complete application with attachments to the Division of Water and Land Development, P.O. Box 217, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $22.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 422-1740, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island HAWAII Tax Map Key 4-7-07:17
Address (H/A) KAMUELA, HI 96743

(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

WAIMEA GOLF COURSE WELL

2. WELL OWNER

Firm Name OTAKA, INC. Landowner (print) SAME
Contact Person PATRICIA TANAKA
Address 2571 LEMON RD.
Honolulu, HI 96815
Phone 929-4047

3. PROPOSED CONTRACTOR FOR: ☑ Well Drilling ☑ Pump Installation

Name TO BE SELECTED BY BID Contractor's License No.
Address

4. PROPOSED WORK

☒ Drill New Well ☑ Deepen ☑ Redrill
☑ Alter ☑ Seal ☑ Abandon
☒ Install New Pump ☑ Replace Pump ☑ Modify Pump

(Briefly describe the proposed work and fill in the diagram on the back of this form.)

5. PROPOSED USE

☒ Municipal (including hotels, stores, etc.) ☑ Military
☑ Domestic (individual, noncommercial water systems) ☑ Industrial
☒ Irrigation (specify) OCCASIONAL GOLF ☑ Other (specify) __________

6. PROPOSED AMOUNT OF WITHDRAWAL $50,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: ☑ Vertical Turbine ☑ Submersible ☑ Centrifugal
Motor: ☑ Diesel ☑ Gas ☑ Electric: 500 Rated Horsepower
Rated Pump Capacity __________ gallons per minute (gpm)

Signed: OTAKA, INC.
Date 2/28/91

Signature

For Official Use Only:
Field Checked By_________________________ Latitude_________________________
Date 2/28/91 Longitude_________________________
Hydrologic Unit_________________________
State Well No. 6235-01
Quad Map No H-35
BRIEFLY DESCRIBE THE PROPOSED WORK:

FOR OCCASIONAL GOLF TURF IRRIGATION.
DIKE, PERCHED, OR BASAL LENS WATER
(SEE ATTACHED DESCRIPTION OF PROJECT)

PROPOSED SECTION OF WELL

Elevation at top of casing

--- ft., msl.

Ground Elev. 2800 --- ft., msl

Cement Grout 500 ft. ---

Hole Dia. 18 in. ---

Total Depth 2800 ft. ---

Rock Packing 2160 ft. ---

Solid Casing:

Material STEEL

Length 2800 or less ft.

Diameter 14 in.

Wall thickness 0.375 in.

Casing: Perforated D/B Screen

Material Corten Steel

Length 40 ft.

Diameter 14 in.

Wall thickness 0.315 in.

Openings 17.3 sq. in./l.f.

Open Hole:

Length UNKNOWN

Diameter 13 in.

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
**PAY** *****Twenty-five and No/100*****

**DATE**  
2/28/91  
$ 25.00**

**TO THE ORDER OF**  
Department of Land and Natural Resources

**2/28/91 Permit for well at Waimea Golf Course**

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**CHECK NUMBER** 773

**FIRST HAWAIIAN BANK**  
KEALAKEKUA BRANCH  
KEALAKEKUA, HI 96750  
59-101-1213

**FIRST HAWAIIAN BANK**  
KEALAKEKUA BRANCH  
KEALAKEKUA, HI 96750  
59-101-1213

**OTAKA, INC.**  
PROJECT ACCOUNT  
2571 LEMON RD.  
HONOLULU, HI 96815

**PAYEE** *****Twenty-five and No/100*****

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HONOLULU, HI 96815
WAIMEA GOLF COURSE WELL

The purpose of the well is as follows:

1. To provide supplemental irrigation at a pumping rate of up to 500 gpm or 600,000 gpd.

2. If located, to provide a supplemental supply of fresh, potable water of up to 25,000 gallons per day.

Because the well is to be drilled where no previous wells exist (see map and cross section; Stephen P. Bowles, Island Resources Ltd, Maps #5 and Figure #1), construction will consist of two phases.

PHASE 1

1. Drill a pilot hole of 10" diameter to a depth of up to 2800 feet to locate perched, dike confined, or basal water.

2. Test pump the pilot hole at a rate of up to 300 gpm.

3. Based on results of test pumping, design final casing dimensions and depths.

PHASE 2

1. Ream the pilot hole out to a diameter of up to 20" maximum and a maximum depth of 2800 feet.

2. Install final casing with a maximum inside diameter of 14" to a maximum depth of up to 2800 feet.

3. Test pump well.

4. Install the permanent dump capable of producing at a rate of up to 500 gpm.

(see diagram attached - Waimea Golf Course Well Drilling Program Phasing)
WAIMEA GOLF COURSE WELL DRILLING PROGRAM PHASING

CONSTRUCT EXPLORATION 10" PILOT HOLE TO DETERMINE WATER LEVEL, QUALITY, & QUANTITY. DIKED, PERCHED, OR BASAL LENS WATER MAY BE FOUND IN THIS AREA.

REAM HOLE TO NEEDED DIMENSIONS BASED ON PILOT HOLE FINDINGS AND IRRIGATION NEEDS.

PLACE CASING BASED ON GEOLOGIC FINDINGS AND TYPE OF WATER FOUND. SOILS OR OTHER FORMATIONS COULD CAUSE TURBIDITY.
POSSIBLE HYDROGEOLOGIC SECTION

not to scale