**CHECKLIST**

- **WELL CONSTRUCTION PERMIT**
- **PUMP INSTALLATION PERMIT**

**WELL NAME or LOCATION:** Kaupulehu - Patomac Investment Associates, Well 2

**WELL NUMBER:** 4757-02

**OWNER or OPERATOR:**

**ADDRESS:**

<table>
<thead>
<tr>
<th>WELL LOCATIONS</th>
<th>Action</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>4757-01, 4757-02</td>
<td>received</td>
<td>10/3/89</td>
</tr>
</tbody>
</table>

**WELL Locations moved to correct locations on maps per:**

- TOM NANCE
  - 2/21/91

<table>
<thead>
<tr>
<th>Date sent</th>
<th>Date application approved or disapproved</th>
<th>Date applicant notified of decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/10/89</td>
<td>10/23/89</td>
<td>1/11/90</td>
</tr>
<tr>
<td>10/5/89</td>
<td>10/19/89</td>
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</tr>
<tr>
<td>10/6/89</td>
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<td></td>
</tr>
</tbody>
</table>

**REMARKS:** Landowner: Kamehameha Schools/Bishop Estate
PUMP INSTALLATION PERMIT

for

Kaupulehu Irrigation Well 2
Well No. 4757-02
Kaupulehu, Hawaii

TO: Kaupulehu Land Company
P.O. Box 1119
Kailua-Kona, HI 96745

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 install a 550 gallons per minute pump in Kaupulehu Irrigation Well 2 (Well No. 4757-02), is approved subject to the following conditions:

1. The Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, before any work covered by this permit commences.

2. The permit shall be for installation of a 550 gpm capacity, or less, pump in the well. A means to accurately measure water levels, acceptable to the Commission, shall be provided.

3. The proposed use 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 pump water from the 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.

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

5. The applicant shall provide and maintain an approved meter or other appropriate device or means for measuring and reporting total water usage. Water usage shall be measured on a monthly basis and reported to the Commission.
PUMP INSTALLATION PERMIT
Well No. 4757-02

6. This permit may be revoked if work is not started within six (6) 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 two years from the date of permit approval.

7. An as-built sectional drawing of the pump installation shall be submitted to the Commission within thirty (30) days after completion of work.

8. The permit application and staff submittal approved by the Commission at its meeting on May 18, 1994 shall be incorporated herein by reference.

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed.

Applicant’s Signature: Roger A. Harris Date: 6-17-94
Printed Name: ROGER A. HARRIS
Firm or Title: Director of Planning, Kaupulehu Land Company

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

cc: USGS
Department of Health
Safe Drinking Water Branch
Ground Water Protection Program
Wastewater Branch
Hawaii Department of Water Supply
PUMP INSTALLATION PERMIT

for

Kaupulehu Irrigation Well 2
Well No. 4757-02
Kaupulehu, Hawaii

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Applicant's Signature: ___________________________ Date: __________

Printed Name: ________________________________

Firm or Title: __________________________

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

cc: USGS
Department of Health
  Safe Drinking Water Branch
  Ground Water Protection Program
  Wastewater Branch
Hawaii Department of Water Supply
Mr. Thomas Arizumi, Chief  
Environmental Management Division  
State Department of Health  
Five Waterfront Plaza  
500 Ala Moana Blvd., Suite 250  
Honolulu, Hawaii 96813

Attn: Mr. Dennis Tulang

Dear Mr. Arizumi:

Well Construction and Pump Installation Permit Applications

Please review the following permit applications pursuant to your area of concern and submit your comments to us by **APR 21 1994**.

<table>
<thead>
<tr>
<th>Island</th>
<th>Well Name</th>
<th>Well No.</th>
<th>Application Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>Mauna Lani Salt Water Well 1</td>
<td>5651-02</td>
<td>Pump Installation</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Mauna Lani Salt Water Well 2</td>
<td>5651-03</td>
<td>Pump Installation</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Kaupulehu Irrigation Well 1</td>
<td>4757-01</td>
<td>Pump Installation</td>
</tr>
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<td>Kaluanui III</td>
<td>3554-06</td>
<td>Well Construction</td>
</tr>
<tr>
<td>Kauai</td>
<td>Kilauea-KPG III</td>
<td>1225-03</td>
<td>Well Construction</td>
</tr>
</tbody>
</table>

Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Sincerely,

RAE M. LOUI  
Deputy Director

Response:
- ☒ We have no objections
- () Not subject to our regulatory authority & permit
- () Comments attached
- () Additional information requested
- () Extended review period requested

Contact Person: Ron Kajiwara  
Signed: Ron Kajiwara  
Phone: 586-4990  
Date: 4/20/94
April 15, 1994

MEMORANDUM

TO: Rae M. Loui, Deputy
Commission of Water Resource Mgt.

FROM: Don Hibbard, Administrator
State Historic Preservation Division

SUBJECT: Kaupulehu Irrigation Well 1 and 2
Kaupulehu, North Kona, Island of Hawaii
TMK: 7-2-03:3

Paul Rosendahl, Ph.D., Inc. conducted an archaeological inventory survey of the area in 1990 and recorded five sites in the general vicinity of both well sites (PHRI Report 897-102192).

Before we can make any determination of the possible effect of the proposed action on the sites in this area we need better location maps for the well sites and information regarding the access to the wells.

PM:amk
REF: WRM-KY

MAR 30 1994

TO: Honorable Hoaliku L. Drake, Director Department of Hawaiian Home Lands
Mr. Clayton H.W. Hee, Chairman & Trustee At Large Office of Hawaiian Affairs

FROM: Keith W. Ahue, Chairperson

SUBJECT: Well Construction & Pump Installation Permit Applications

Please review the following permit applications and submit your comments to us by APR 21 1994.

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<td>Well Construction</td>
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Should you have any questions, please contact the Commission on Water Resource Management staff at 587-0225.

Enc.

Response:
(X) We have no objections
( ) Not subject to our regulatory authority & permit
( ) Comments attached
( ) Additional information requested
( ) Extended review period requested

Contact Person: Darrell Yagodich  
Phone: 586-3836

Signed: Darrell Yagodich  
Date: 4/21/94
DATE: August 5, 1992

TO: Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 373
Honolulu, Hawaii 96809

ATTENTION: Ed Sakoda

SUBJECT: Kaupeluhu - PIA Well No. 2 = State Well No. 4757-02

We herewith transmit the following:

1 Set Completed Well Driller’s Report and final pump test data for this well. The well was constructed by Roscoe Moss Company.

Remarks:

We herewith transmit the above documents for your records. This should satisfy your requirement for this well. Please feel free to call me if there are any questions regarding this matter.

Sincerely,
Tom Nance Water Resources Engineering

Greg Fukumitsu, P.E.

cc: Roger Harris - PIA
State of Hawaii
DEPARTMENT OF LAND & NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT
DRILLER'S REPORT

DESCRIPTION

Date of report 12/11/90
Person filing report L.H. Runnells

A. OWNER Kaajima
NAME Kaupulehu #1 = Well No. 4752707
ISLAND Hawaii

B. GENERAL LOCATION Kaupulehu, Kona, Hawaii

C. DRILLING COMPANY Roscoe Moss Company

D. TYPE OF RIG Cable tool
DRILLING COMPLETED 12/90
DRILLER Rodney Couch

E. ELEVATION, msl: Top of drilling platform ...868 ft. Bench mark and method used to determine
Height of drilling platform above ground surface ...0 ft. elevation:

F. HOLE SIZE: ...12 inch dia. to ...982 ft. below drilling platform.
...12 inch dia. to ...982 ft. below drilling platform.
...12 inch dia. to ...982 ft. below drilling platform.

G. CASING INSTALLED: ...12 in. I.D. x ...312 in. wall solid section to ...972 ft. below drilling platform.
...12 in. I.D. x ...312 in. wall perforated section to ...982 ft. below drilling platform.

H. ANNULUS: Grouted ...0 ft. to ...500 ft. below drilling platform.
Gravel packed ...500 ft. to ...982 ft. below drilling platform.

I. PERMANENT PUMP INSTALLATION:

1. Pump type, make, serial no. Capacity g.p.m.
Motor type, H.P., voltage, r.p.m.
Depth of pump intake setting ft. below
Depth of bottom of airline ft. below

which elevation is ft.

HYDROLOGY

J. INITIAL WATER LEVEL ...862 ft. below drilling platform. Date of measurement ...10/29/90

K. INITIAL CHLORIDE: ppm, total depth of well ft. below drilling platform

L. PUMPING TESTS: Reference point (R.P.) used: which elevation is ft.
Date 11/19/90
Start water level 862 ft. below R. P.
End water level 862 ft. below R. P.
Depth of well 908 ft. below R. P.

<table>
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<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Cl-(ppm)</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
<th>Cl-(ppm)</th>
<th>Temp. °F</th>
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M. DRILLER'S LOG:

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<td>522 to 536</td>
<td>Black Rock</td>
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<td>9 to 67</td>
<td>Reddish Brown Cinders</td>
<td>536 to 544</td>
<td>Grey Rock Loose</td>
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<tr>
<td>67 to 139</td>
<td>Med. Hard Rock</td>
<td>544 to 646</td>
<td>Red Rock Blue &amp; Grey</td>
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<td>139 to 185</td>
<td>Clinkers Cinders</td>
<td>636 to 685</td>
<td>Red Lava</td>
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<td>185 to 223</td>
<td>Grey Rock</td>
<td>646 to 728</td>
<td>Hard Grey Rock</td>
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<td>223 to 270</td>
<td>Hard Rock</td>
<td>728 to 780</td>
<td>Red &amp; Brown Rock</td>
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<td>270 to 365</td>
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<td>780 to 844</td>
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<td>365 to 460</td>
<td>Very Hard Rock</td>
<td>844 to 871</td>
<td>Red &amp; Brown Rock</td>
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<td>460 to 472</td>
<td>Red Grey Rock</td>
<td>871 to 928</td>
<td>Hard AA Grey</td>
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<td>892 to 909</td>
<td>Brown Sandstone</td>
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<td>Reddish Rock</td>
<td>909 to 924</td>
<td>Hard Grey Rock</td>
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</tbody>
</table>

N. REMARKS:

For Drillers Use
INSTRUCTIONS: Send three (3) copies to Manager-Chief Engineer, Division FOR OFFICIAL USE
DRILLER'S REPORT  
Kaupulehu #1  
Page 2

Subsurface Formation (cont.)

<table>
<thead>
<tr>
<th>Depth, ft.</th>
<th>Rock Description &amp; Remarks</th>
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</thead>
<tbody>
<tr>
<td>924 to 945</td>
<td>Brown Rock Hard</td>
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<tr>
<td>945 to 949</td>
<td>Grey Rock Hard</td>
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<tr>
<td>949 to 958</td>
<td>Grey &amp; Brown Rock</td>
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<tr>
<td>958 to 965</td>
<td>Brown Sandstone</td>
</tr>
<tr>
<td>965 to 967</td>
<td>Red Cinders</td>
</tr>
<tr>
<td>967 to 969</td>
<td>Red &amp; Brown Sand</td>
</tr>
<tr>
<td>969 to 973</td>
<td>Brown Cinders &amp; Sand</td>
</tr>
<tr>
<td>973 to 982</td>
<td>Brown &amp; Red Cinder Clinkers</td>
</tr>
</tbody>
</table>

12/4/90 Water Level 862  
Total Depth 982  
Pump tested well 24 hours.
**PUMPING TEST RECORD**

for

Kajima Well  
(Name)

Well 1 = Well No. 4557-02  
(No.)

Hawaii Island 3389R Project or Job No. Dec 4 19 90

Description of Well--

1. Elevation: ground surface 865 ft., top of casing 865 ft., rotary table ___ ft., referenced to ___ benchmark.
2. Total depth of well 780 ft.; or ___ ft. elevation, msl
3. 12 in. solid casing to ____ ft. depth, perforated to ____ ft. depth
4. Static water level on ____ 19 ft. below ground surface, top of casing; or ____ ft. elevation msl measured _____ method

Description of Pump and Pump Setting--

5. ___ type pump with ___ stage bowl assembly
6. Gasoline diesel, electric, power with ___ horsepower
7. Shaft speed: ___ rpm at ___ gpm flow
8. Depth of pump intake: ___ ft. below ___; or ___ ft. elev. msl
9. Depth of airline bottom: ___ ft. below ___; or ___ ft. elev. msl
10. Center of gage: ___ ft. elev., msl. Flow measured with ____

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Sample No.</th>
<th>Pumping rate (gpm)</th>
<th>Airline (feet)</th>
<th>Drawdown (feet)</th>
<th>Chlorides (ppm)</th>
<th>Temp. (°F)</th>
<th>Cond. (mmhos 25°C)</th>
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<td>5:00</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td>2.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1:00 AM</td>
<td>5:00</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td>2.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2:00 AM</td>
<td>4:80</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td>2.80</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sheet No. 1 of
PUMPING TEST RECORD
for
Kagina Well

(Hawaiian Island) Project or Job No. 3387819

Description of Well--
1. Elevation: ground surface 3.5 ft., top of casing 8.65 ft., rotary table 10 ft., referenced to benchmark.
2. Total depth of well 100 ft.; or 100 ft. elevation, msl
3. 12 in. solid casing to 100 ft. depth, perforated to 50 ft. depth.
4. Static water level on 19 ft. below ground surface, top of casing; or 100 ft. elevation msl measured method.

Description of Pump and Pump Setting--
5. ___ type pump with ___ stage bowl assembly
6. Gasoline diesel, electric, power with ___ horsepower
7. Shaft speed: ___ rpm at ___ gpm flow
8. Depth of pump intake: ___ ft. below ___; or ___ ft. elev. msl
9. Depth of airline bottom: ___ ft. below ___; or ___ ft. elev. msl

Test conducted by ___.

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Sample No.</th>
<th>Pumping rate (gpm)</th>
<th>Airline (feet)</th>
<th>Drawdown (feet)</th>
<th>Chlorides (ppm)</th>
<th>Temp. (°F)</th>
<th>Cond. (mmhos 25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 pm</td>
<td>1</td>
<td>500</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 pm</td>
<td>2</td>
<td>815</td>
<td>14</td>
<td>5.27</td>
<td>2.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5:00 pm</td>
<td>3</td>
<td>520</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6:00 pm</td>
<td>4</td>
<td>500</td>
<td>14</td>
<td>5.27</td>
<td></td>
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<tr>
<td>7:00 pm</td>
<td>5</td>
<td>520</td>
<td>14</td>
<td>5.27</td>
<td>2.80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:00 pm</td>
<td>6</td>
<td>510</td>
<td>14</td>
<td>5.27</td>
<td></td>
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<td>9:00 pm</td>
<td>7</td>
<td>510</td>
<td>14</td>
<td>5.27</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sheet No. 1 of ___.
TO: PIA-Kona Ltd. Partnership  
P.O. Box 803  
Kamuela, HI 96743

REVOCATION OF WELL CONSTRUCTION PERMIT
Previously issued on January 11, 1990, for  
Kaupulehu-PIA Well 2  
Well No. 4757-02  
Kaupulehu, North Kona, Hawaii

On January 11, 1990, the Commission on Water Resource Management issued you a permit to construct and test Well No. 4757-02 within Tax Map Key 7-2-03:3 for golf course irrigation use. The permit was valid for two years from the date of issuance and required that a well completion report be submitted within 30 days after completion of the well.

As of this date, no well completion report or other evidence has been received by the Department which indicates that the subject well was ever constructed. Accordingly, we conclude that the well was not constructed within the allowable period, which has now expired, and that the permit should be revoked.

You are hereby notified in accordance with H.A.R. §13-168-12(k) that the permit to construct the above-mentioned well shall be revoked within 60 days of the date of this letter unless you can show good cause that it should not be revoked. If the well has already been constructed, you must notify us of this before the permit is revoked and provide the information specified by the well construction permit conditions. Please contact our Regulation Branch at (808) 587-0225 if you have any questions.

Sincerely,

RAE M. LOUI
Deputy Director

BR:ky
**Driller's Report**

**Date of report:** 12/11/90  
**Person filing report:** L. H. Runnells

**A. Owner:** Kajima  
**WELL NAME:** Kaupulehu  
**Island:** Hawaii

**B. General Location:** Kaupulehu, Kona, Hawaii

**C. Drilling Company:** Roscoe Moss Company

**D. Type of Rig:** cable tool  
**Drilling completed:** 12/90  
**Driller:** Coach

**E. Elevation, msl:** Top of drilling platform: 868 ft.  
**Bench mark and method used to determine:**

<table>
<thead>
<tr>
<th>Height of drilling platform above ground surface</th>
<th>ft. elevation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>868</td>
</tr>
</tbody>
</table>

**F. Hole size:**

<table>
<thead>
<tr>
<th>Diameter (inch)</th>
<th>Below drilling platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>892 ft.</td>
</tr>
<tr>
<td>12</td>
<td>982 ft.</td>
</tr>
</tbody>
</table>

**G. Casing installed:**

<table>
<thead>
<tr>
<th>Section</th>
<th>Below drilling platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 in. I.D. x 312 in. wall solid</td>
<td>872 ft.</td>
</tr>
<tr>
<td>12 in. I.D. x 312 in. wall perforated</td>
<td>892 ft.</td>
</tr>
</tbody>
</table>

**Type of perforation:** Lower

**H. Annulus:**

- Grouted: 0 ft. to 500 ft. below drilling platform.
- Gravel packed: 500 ft. to 892 ft. below drilling platform.

**I. Permanent Pump Installation:**

- **Pump type, make, serial no.:** Capacity: g.p.m.
- **Motor type, H.P., voltage, r.p.m.:**
- **Depth of pump intake setting:** ft. below which elevation is ft.
- **Depth of bottom of airline:** ft. below which elevation is ft.

**Hydrology**

**J. Initial Water Level:** 862 ft. below drilling platform. Date of measurement: 10/29/90

**K. Initial Chloride:** ppm, total depth of well below drilling platform

**L. Pumping Tests:**

<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>Draw down (ft.)</th>
<th>Cl (ppm)</th>
<th>Temp °F</th>
<th>Date</th>
<th>Start water level</th>
<th>End water level</th>
<th>Depth of well</th>
<th>Rate (gpm)</th>
<th>Draw down (ft.)</th>
<th>Cl (ppm)</th>
<th>Temp °F</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/17/90</td>
<td>862 ft. below R. P.</td>
<td>862 ft. below R. P.</td>
<td>908 ft. below R. P.</td>
<td>Elapsed Time (hours)</td>
<td>Rate (gpm)</td>
<td>Draw down (ft.)</td>
<td>Cl (ppm)</td>
<td>Temp °F</td>
<td>11/3/90</td>
<td>862 ft. below R. P.</td>
<td>862 ft. below R. P.</td>
<td>949 ft. below R. P.</td>
<td>8:00 to 4:00</td>
<td>250</td>
<td>29</td>
</tr>
</tbody>
</table>

**Subsurface Formation**

**M. Driller's Log:**

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level</th>
<th>Depth (ft.)</th>
<th>Rock Description &amp; Remarks</th>
<th>Water Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 9</td>
<td>Blue AA Cinders</td>
<td>ft. 522</td>
<td>to 536</td>
<td>Black Rock</td>
<td>ft.</td>
</tr>
<tr>
<td>9 to 67</td>
<td>Reddish Brown Cinders</td>
<td>ft. 536</td>
<td>to 544</td>
<td>Grey Rock Loose</td>
<td>ft.</td>
</tr>
<tr>
<td>67 to 139</td>
<td>Med. Hard Rock</td>
<td>ft. 544</td>
<td>to 646</td>
<td>Hard Rock Blue &amp; Grey</td>
<td>ft.</td>
</tr>
<tr>
<td>139 to 185</td>
<td>Clinkers Cinders</td>
<td>ft. 646</td>
<td>to 685</td>
<td>Red Lava</td>
<td>ft.</td>
</tr>
<tr>
<td>185 to 223</td>
<td>Grey Rock</td>
<td>ft. 685</td>
<td>to 728</td>
<td>Hard Grey Rock</td>
<td>ft.</td>
</tr>
<tr>
<td>223 to 270</td>
<td>Hard Rock</td>
<td>ft. 728</td>
<td>to 780</td>
<td>Red &amp; Brown Rock</td>
<td>ft.</td>
</tr>
<tr>
<td>270 to 365</td>
<td>Grey Rock</td>
<td>ft. 780</td>
<td>to 844</td>
<td>Hard Grey Rock</td>
<td>ft.</td>
</tr>
<tr>
<td>460 to 472</td>
<td>Red Grey Rock</td>
<td>ft. 871</td>
<td>to 898</td>
<td>Hard AA Grey</td>
<td>ft.</td>
</tr>
<tr>
<td>472 to 500</td>
<td>Hard Blue Rock</td>
<td>ft. 898</td>
<td>to 909</td>
<td>Brown Sandstone</td>
<td>ft.</td>
</tr>
<tr>
<td>500 to 522</td>
<td>Reddish Rock</td>
<td>ft. 909</td>
<td>to 992</td>
<td>Hard Grey Rock</td>
<td>ft.</td>
</tr>
</tbody>
</table>

**N. Remarks:**

**Final Depth:** 162 ft

**Instructions:** Send three (3) copies to: Manager-Chief Engineer, Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809.


**State of Hawaii**

**Department of Land & Natural Resources**

**Division of Water and Land Development**

**FOR OFFICIAL USE**

**Latitude:** 19° 47' 54"  
**Longitude:** 155° 57' 38"

**Well No.:** 8-4757-02
Subsurface Formation (cont.)

<table>
<thead>
<tr>
<th>Depth, ft.</th>
<th>Rock Description &amp; Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>924 to 945</td>
<td>Brown Rock Hard</td>
</tr>
<tr>
<td>945 to 949</td>
<td>Grey Rock Hard</td>
</tr>
<tr>
<td>949 to 958</td>
<td>Grey &amp; Brown Rock</td>
</tr>
<tr>
<td>958 to 965</td>
<td>Brown Sandstone</td>
</tr>
<tr>
<td>965 to 967</td>
<td>Red Cinders</td>
</tr>
<tr>
<td>967 to 969</td>
<td>Red &amp; Brown Sand</td>
</tr>
<tr>
<td>969 to 973</td>
<td>Brown Cinders &amp; Sand</td>
</tr>
<tr>
<td>973 to 982</td>
<td>Brown &amp; Red Cinder Clinkers</td>
</tr>
</tbody>
</table>

12/4/90  Water Level 822  
Total Depth 982  
Pump tested well 24 hours.
# Pumping Test Record

**Well No.** 4757-09

**Location:** Island 3889R

**Project or Job No.:** Dec 4 1990

**Description of Well:**
1. Elevation: ground surface 625 ft., top of casing 865 ft., rotary table east of reference to benchmark.
2. Total depth of well 920 ft., or 70 ft. elevation, msl.
3. 12 in. solid casing to 12 ft. depth, perforated to 19 ft. depth.
4. Static water level on 19 ft. below ground surface, top of casing or 40 ft. elevation, msl.

**Description of Pump and Pump Setting:**
5. **Type pump with stage bowl assembly**
6. Gasoline diesel, electric, power with horsepower
7. Shaft speed: rpm at qpm flow
8. Depth of pump intake: 920 ft. below; or 70 ft. elev. msl.
9. Depth of airline bottom: 920 ft. below; or ft. elev. msl.

**Date & Time** | **Sample No.** | **Pumping rate (gpm)** | **Airline (feet)** | **Drawdown (feet)** | **Chlorides (ppm)** | **Temp. (°F)** | **Cond. (mmhos 25°C)**
--- | --- | --- | --- | --- | --- | --- | ---
12:00 PM | | | | | | | |
1:00 PM | | | | | | | |
2:00 PM | | | | | | | |
3:00 PM | | | | | | | |
4:00 PM | | | | | | | |
5:00 PM | | | | | | | |
6:00 PM | | | | | | | |
7:00 PM | | | | | | | |
8:00 PM | | | | | | | |
9:00 PM | | | | | | | |
10:00 PM | | | | | | | |
11:00 PM | | | | | | | |
12:00 PM | | | | | | | |
1:00 PM | | | | | | | |
2:00 PM | | | | | | | |
3:00 PM | | | | | | | |
4:00 PM | | | | | | | |
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11:00 AM | | | | | | | |
12:00 PM | | | | | | | |
1:00 PM | | | | | | | |
2:00 PM | | | | | | | |
3:00 PM | | | | | | | |
4:00 PM | | | | | | | |
5:00 PM | | | | | | | |
6:00 PM | | | | | | | |
7:00 PM | | | | | | | |
8:00 PM | | | | | | | |
9:00 PM | | | | | | | |
**PUMPING TEST RECORD**

**Kogima**

**Well 1**

**Hawaii Island**

**Kapoho**

**Project or Job No. 3329819**

**Description of Well**

1. Elevation: ground surface 865 ft., top of casing 865 ft.,
   rotary table ____ ft., referenced to ____ benchmark.
2. Total depth of well ____ ft.; or ____ ft. elevation, msl
3. ____ in. solid casing to ____ ft. depth; perforated to ____ ft. depth
4. Static water level on ____ ft. below ground surface; top of casing; or ____ ft. elevation msl
   measured _______ method

**Description of Pump and Pump Setting**

5. ____ type pump with ____ stage bowl assembly
6. Gasoline diesel, electric, power with ____ horsepower
7. Shaft speed: ____ rpm at ____ gpm flow
8. Depth of pump intake: ____ ft. below ____; or ____ ft. elev. msl
9. Depth of airline bottom: ____ ft. below ____; or ____ ft. elev. msl
10. Center of gage: ____ ft. elev., msl. Flow measured with _______

<table>
<thead>
<tr>
<th>Date &amp; Time</th>
<th>Sample No.</th>
<th>Pumping rate (gpm)</th>
<th>Airline (feet)</th>
<th>Drawdown (feet)</th>
<th>Chlorides (ppm)</th>
<th>Temp. (°F)</th>
<th>Cond. (mmhos 25°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:00 AM</td>
<td>500</td>
<td>14</td>
<td>5.27</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4:00 AM</td>
<td>575</td>
<td>14</td>
<td>5.77</td>
<td>280</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>5:00 AM</td>
<td>590</td>
<td>14</td>
<td>5.77</td>
<td>280</td>
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<td></td>
</tr>
<tr>
<td>6:00 AM</td>
<td>500</td>
<td>14</td>
<td>5.77</td>
<td></td>
<td></td>
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<tr>
<td>7:00 AM</td>
<td>520</td>
<td>14</td>
<td>5.77</td>
<td>280</td>
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<tr>
<td>8:00 AM</td>
<td>510</td>
<td>14</td>
<td>5.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:00 AM</td>
<td>510</td>
<td>14</td>
<td>5.77</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WELL CONSTRUCTION PERMIT
for
Kaupulehu-PIA Well 2
Well No. 4757-02
Kaupulehu, North Kona, Hawaii

TO: PIA-Kona Ltd. Partnership
P.O. Box 803
Kamuela, Hawaii 96743

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 and test Well No. 4757-02 within Tax Map Key: 7-2-03:3 for golf course irrigation use is approved, subject to the following conditions:

1. The Division of Water and Land Development (DOWALD), Geology-Hydrology Section, shall be notified at 548-7543, before any work covered by this permit commences.

2. The permit shall be for construction and testing only. No permanent pump may be installed and no water used from the well without the necessary pump installation permit from the Commission.

3. The proposed use shall not adversely affect existing legal uses and appurtenant rights in the area.

4. The following shall be submitted to DOWALD within 30 days after completion of the well:

   a. Well Completion Report form.

   b. Elevation (referenced to mean sea level) survey by a Hawaii-licensed surveyor.

   c. As-built sectional drawing of the well.

   d. Plot plan and map showing the exact location of the well.

   e. Complete pumping test record; including time, pumping rate, drawdown, chloride content, and water quality data.
WELL CONSTRUCTION PERMIT
Well No. 4757-02

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

6. This permit may be revoked if work is not started within six months of date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

JAN 11 1990
Date of Issuance

cc: USGS
Department of Health,
   Drinking Water Branch
   Ground Water Protection Program
Hawaii Dept. of Water Supply
Tom Nance Water Resources Engineering

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management
December 11, 1989

PIA-Kona Ltd. Partnership
P.O. Box 803
Kamuela, Hawaii 96743

Gentlemen:

The Commission on Water Resource Management will be acting on your permit application for Kaupulehu-PIA Well 2 at its regular meeting on December 13, 1989, at 2:00 p.m. in Room 132, Kalanimoku Bldg., 1151 Punchbowl Street, Honolulu:

Your application will be included on the agenda as Item 9 (attached).

You or your representative are invited to attend the meeting.

Sincerely,

MAYANU TAGOMORI
Deputy Director

ES:ko
Encl.
cc: Tom Nance Water Resources Engineering
November 7, 1989

PIA-Kona Ltd. Partnership
P.O. Box 803
Kamuela, Hawaii 96743

Gentlemen:

The Commission on Water Resource Management will be acting on your permit application for Kaupulehu-PIA Well 2 at their regular monthly meeting on November 15, 1989, on the Island of Hawaii at 9:30 a.m. in the University of Hawaii Campus Center, Conference Rooms 306 and 307 located at Kawili Street entrance, Hilo, Hawaii.

Your application will be included on the agenda as Item 11 (attached).

You or your representative are invited to attend the meeting.

Sincerely,

[Signature]

MANABU TACOMORI
Deputy Director

ES:bm
Enc.
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 PERMIT APPLICATION
KAUPULEHU-PIA WELL 2
STATE WELL NO. 4757-02
KAUPULEHU, NORTH KONA, HAWAII

Thank you for the opportunity to comment on the well drilling permit for the proposed well. We offer the following comments:

1. Because the well will be intended for golf course irrigation only, it will not be subject to the Department's Administrative Rules, Title 11, Chapter 20, "Potable Water Systems".

2. The proposed well lies above the UIC line. Land areas above the UIC line are considered to contain underground sources of drinking water. Thus, it is essential that the proposed 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.

3. The proposed well lies approximately 1 mile upgradient of existing drinking water wells (Kona Village water system, wells 4858-02 and 4858-03). The Kona Village wells withdraw brackish water which is desalinated with electrodialysis. Because golf course irrigation typically requires heavy aquifer pumpage, operation of the proposed well should not be allowed to degrade the water quality of the existing drinking water wells, especially with regards to salinity.
4. There are many golf course activities which might contribute to groundwater contamination. Among the activities which should not be allowed to contaminate groundwater are the following:

   a. Application of biocides, and fertilizers

   b. Storage of fuel for vehicles (especially underground storage)

   c. Maintenance of vehicles and equipment (cleaning, refueling, lubrication, etc.)

If any of these activities is planned, mitigative measures to assure that groundwater contamination will not occur must be included.

5. As a precautionary measure, monitoring wells should be installed throughout the golf course, especially in areas downgradient of effluent irrigation and areas following drainage ways. The design and siting of the monitoring wells should be reviewed by the Department of Health. The monitoring wells should be periodically sampled and tested for compounds associated with effluent irrigation, fertilizers, and biocides. If any detrimental compounds are found, the owners must be made responsible to immediately correct the situation or face the possibility of a shutdown.

6. Wastewater disposal activities must comply with all pertinent rules and regulations in the event that the project does not connect to an existing, approved wastewater treatment works.

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

Very truly yours,

[Signature]

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

cc: Roger Harris
    Potomac Investment Association
    P.O. Box 803
    Kamuela, Hawaii 96743
October 19, 1989

Mr. Manabu Tagomori, Deputy Director  
State Department of Land and Natural Resources  
Commission on Water Resources Management  
P.O. Box 621  
Honolulu, HI 96809

WELL CONSTRUCTION PERMIT APPLICATION  
KAUPULEHU-PIA WELL 2 (WELL NO. 4757-02)

We have no objections to the proposed well that will be used for golf course irrigation purposes.

H. William Sewake  
Manager  
GK
October 16, 1989

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

SUBJECT: WELL CONSTRUCTION PERMIT APPLICATION
Kaupulehu-PIA Well 2 (Well No. 4757-02)
TMK: 7-2-03: 3

We have reviewed the subject permit application and have no objections to the proposed well construction.

ROBERT K. YANABU, Division Chief
Engineering Division

STT/acs
REF: WL-BM

OCT 1999

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

Attention: Mr. Thomas Arizumi, Drinking Water Program

Dear Dr. Lewin:

Well Construction Permit Application

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168-12(c), we are sending you a copy of the following permit application:

Kaupulehu-PIA Well 2 (Well No. 4757-02)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Nanabu Tagomori at 548-7533.

Very truly yours,

WILLIAM W. PATY

Enc.
October 6, 1989

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

Dear Mr. Sewake:

Well Construction Permit Application

We are sending you a copy of the following permit application for your review and comments:

Kaupulehu-PIA Well 2 (Well No. 4757-02)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Ed Sakoda at 548-7543.

Sincerely,

[Signature]

NANABU TAGOMORE
Deputy Director

ES:bm
Enc.
October 6, 1989

Mr. Hugh Y. Ono
Chief Engineer
Department of Public Works
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Ono:

Well Construction Permit Application

We are sending you a copy of the following permit application for your review and comments:

Kaupulehu-PIA Well 2 (Well No. 4757-02)

Please submit your comments to us, orally or in writing, within three weeks from the date of this letter.

If you have any questions, please contact Ed Sakoda at 548-7543.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:bm
Enc.
October 6, 1989

PIA-Kona Ltd. Partnership
P.O. Box 803
Kamuela, Hawaii 96743

Gentlemen:

We acknowledge receipt of your Well Construction Permit Application and $25.00 filing fee to construct and test Kaupulehu-PIA Well 2 (Well No. 4757-02).

My staff is processing the application and will contact your staff should there be any questions.

Sincerely,

MANABU TAGOMORI
Deputy Director

ES:bm
Mr. William Paty, Chairman  
Commission on Water Resource Management  
Department of Land & Natural Resources  
P. O. Box 373  
Honolulu, Hawaii  96809  

Dear Mr. Paty:

Well Drilling Permit Application in Kaupulehu, North Kona, Hawaii

On behalf of Potomac Investment Associates, we are pleased to submit the enclosed drilling permit application for a proposed golf course irrigation well at Kaupulehu in North Kona. This application is for a second golf course well. An application for the first well was submitted previously and we hope to receive approval for it at the Commission's October meeting. Both wells will be required to adequately irrigate the planned golf course.

If you need additional information, please contact Roger Harris of Potomac Investment Associates (at 885-1035) or me.

Sincerely,

Tom Nance  

TN:lt  
cc: Roger Harris  
Enclosures
APPLICATION FOR

X WELL CONSTRUCTION PERMIT
PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96807. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 541-1542. Hydrology/Geology Section for assistance.

1. WELL LOCATION
Island Hawaii Tax Map Key 7-2-03:3
Address Kaupulehu, North Kona, Hawaii
(Attach a USGS map (scale 1"=2000') and property tax map showing well location referenced to established property boundaries.)

2. WELL OWNER
Firm Name Potomac Investment Assoc.
Contact Person Roger Harris
Address P. O. Box 803
Kamuela, Hawaii 96743
Phone 885-1035

LANDOWNER
Firm Name Kamehameha Schools/Bernice
Contact Person Sidney Keliipuleole
Address 567 South King Street
Honolulu, Hawaii 96813
Phone 523-6200

3. PROPOSED CONTRACTOR FOR:  Well Drilling Pump Installation
Name To Be Determined
Address
Phone
Contractor's License No.

4. PROPOSED WORK
Drill New Well
Deepen
Alter
Install New Pump
Seal
Replace Pump
Redrill
Abandon
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.)
Domestic (individual, noncommercial water systems)
Irrigation (specify) Golf Course
Military
Industrial
Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 500,000 gallons per day

7. PROPOSED PUMP INFORMATION
Pump Type: Vertical Turbine
Motor: Diesel Gas Electric: 200
Rated Pump Capacity 350 gallons per minute (gpm)

Well Owner (print) PIA-Kona Ltd Property
Signature Roger Harris
Date 3-15-89

Landowner (print) Kamehameha Schools/Bernice
Signature
Date

For Official Use Only:
Field Checked By Latitude
Date Longitude State Well No.
Briefly describe the proposed work:

Drilling and pump testing of the well will be undertaken. Depending on these results, the well may ultimately supply water for golf course irrigation.

PROPOSED SECTION OF WELL

Elevation at top of casing 882 ft., msl.

Cement Grout 500 ft.

Hole Dia. 18 in.

Total Depth 920 ft.

Rock Packing 420 ft.

Ground Elev. 880 ft., msl*

Solid Casing:
- Material: Steel (ASTM A-242)
- Length: 880 ft.
- Diameter: 12 in.
- Wall thickness: 0.375 in.

Casing: /X/Perforated / /Screen
- Material: Steel (ASTM A-242)
- Length: 40 ft.
- Diameter: 12 in.
- Wall thickness: 0.3125 in.
- Openings: 60 sq. in./L.F.

Open Hole:
- Length: None
- Diameter: ________________ 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.
BELT COLLINS AND ASSOCIATES
680 ALA MOANA BLVD., STE. 200
HONOLULU, HI 96813

Oct. 2, 1989

EXACTLY 25 AND 00CTS

TO THE ORDER OF
DEPT. OF LAND & NATURAL RESOURCES

APPLICATION FEE: KAUPULEHU -PIA WELL 2 (Well No. 4757-02)

PAY ______________________________________________________ DOLLARS $25.00*

DATE

DESCRIPTION

AMOUNT

DRILLING PERMIT APPLICATION: KAUPULEHUE (054.0500) $25.00