**SECTION 1: WELL LOCATION INFORMATION**

<table>
<thead>
<tr>
<th>Island</th>
<th>Aquifer System</th>
<th>Aquifer Sector</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAWAII</td>
<td>SW.MAUNA LOA</td>
<td>KEALAKEKUA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Proposed Use</th>
<th>Proposed Withdrawal</th>
<th>System Sustainable Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>38</td>
</tr>
</tbody>
</table>

**SECTION 2: WELL SECTION DATA** *(enter data in grey cells only)*

<table>
<thead>
<tr>
<th>Elevation at top of casing</th>
<th>Solid Casing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Material</td>
</tr>
<tr>
<td></td>
<td>Designation</td>
</tr>
<tr>
<td></td>
<td>Length</td>
</tr>
<tr>
<td></td>
<td>Diameter</td>
</tr>
<tr>
<td></td>
<td>Wall Thickness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ground Elevation</th>
<th>Rock Packing</th>
<th>Hole Diameter</th>
<th>Total Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft., m.s.l.</td>
<td>ft.</td>
<td>ft.</td>
<td>ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated Head</th>
<th>Calculated Aquifer Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft., m.s.l.</td>
<td>82 ft.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>County Water Supply (Y/N ?)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

| SECTION 3: CHECKLIST *(values to check are shaded)* |

**Well Depth**

- Theoretical Thickness of Aquifer: 82 ft.
- 1/4 Aquifer Thickness: 20.5 ft.

**Depth of Well below Sea Level**: 6 ft.  
*Okay* *(refer to HWCPIS Section 2.2)*

**Well Casing**

- Minimum Wall Thickness
  - Material: PVC  
  - County or Non-County: non-county  
  - Minimum Thickness per standards: 0.276 in.  
  - Wall Thickness Provided: 0.276 in.  
  *Okay* *(refer to HWCPIS Section 2.4 c)*

- Minimum Length of Solid Casing
  - 90% of ground to top of aquifer: 88.2 ft.  
  - Length of solid casing Provided: 106 ft.  
  *Okay* *(refer to HWCPIS Section 2.4 d)*

**Casing Material**: Sch 80  
*Okay* *(refer to HWCPIS Section 2.4 e)*

**Annular Space**

- Depth of Grouting
  - Calculated Depth of Grouting: 68.6 ft.  
  - Depth of Grouting provided: 75 ft.  
  *Okay* *(refer to HWCPIS Section 2.6 d)*

- Thickness of Annular Space: 1.75 in.  
*Too small* *(refer to HWCPIS Section 2.6 d)*

---

Page 1
### SECTION 1: WELL LOCATION INFORMATION

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<tbody>
<tr>
<td>Proposed Withdrawal</td>
<td>0</td>
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<td>System Sustainable Yield</td>
<td>38</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Data Point</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevation at top of casing</td>
<td>ft., m.s.l.</td>
</tr>
<tr>
<td>Ground Elevation</td>
<td>ft., m.s.l.</td>
</tr>
<tr>
<td>Cement Grout</td>
<td>ft.</td>
</tr>
<tr>
<td>Rock Packing</td>
<td>in.</td>
</tr>
<tr>
<td>Hole Diameter</td>
<td>ft.</td>
</tr>
<tr>
<td>Total Depth</td>
<td>ft.</td>
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<td>ft., m.s.l.</td>
</tr>
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</table>

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<tr>
<td>Theoretical Thickness of Aquifer</td>
<td>82 ft.</td>
</tr>
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<td>1/4 Aquifer Thickness</td>
<td>20.5 ft.</td>
</tr>
<tr>
<td>Depth of Well below Sea Level</td>
<td>6 ft. okay (refer to HWCPIS Section 2.2)</td>
</tr>
<tr>
<td>Well Casing</td>
<td></td>
</tr>
<tr>
<td>Minimum Wall Thickness</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>PVC</td>
</tr>
<tr>
<td>County or Non-County</td>
<td>Non-county</td>
</tr>
<tr>
<td>Minimum Thickness per standards</td>
<td>0.276 in.</td>
</tr>
<tr>
<td>Wall Thickness Provided</td>
<td>0.276 in. okay (refer to HWCPIS Section 2.4 c)</td>
</tr>
<tr>
<td>Minimum Length of Solid Casing</td>
<td></td>
</tr>
<tr>
<td>90% of ground to top of aquifer</td>
<td>34.2 ft.</td>
</tr>
<tr>
<td>Length of solid casing Provided</td>
<td>41 ft. okay (refer to HWCPIS Section 2.4 d)</td>
</tr>
<tr>
<td>Casing Material</td>
<td>Sch 50</td>
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<tr>
<td>Annular Space</td>
<td></td>
</tr>
<tr>
<td>Depth of Grouting</td>
<td></td>
</tr>
<tr>
<td>Calculated Depth of Grouting</td>
<td>26.6 ft.</td>
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<tr>
<td>Depth of Grouting provided</td>
<td>35 ft. okay (refer to HWCPIS Section 2.6 c)</td>
</tr>
<tr>
<td>Thickness of Annular Space</td>
<td>1.75 in. too small (refer to HWCPIS Section 2.6 d)</td>
</tr>
</tbody>
</table>
Hey Bob!

We need a couple of things from your office.

First off, we need the Surveyor's signature and chloride information on the Well Completion Report Part I for the Hokukano Monitor Wells (Well Nos. 3057-01 and 3157-01).

We also need the Well Completion Report Part I and pump test results for the Parker 1 Well (5548-01). It also seems that this pump was installed without a pump installation permit.

That's it for now. Give me a call at 587-0255 if you have any questions.

Thanks,

Ryan
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Thanks,

Ryan
<table>
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<tr>
<th>Approved Well No.</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction</th>
<th>Pump Installation</th>
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<tbody>
<tr>
<td>1/4/2000</td>
<td>4459-03</td>
<td>HiliHili Irr 1</td>
<td>HiliHili Development LLC</td>
<td>C-16543</td>
<td>WELL</td>
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<td>1/14/2000</td>
<td>6753-02</td>
<td>Kaupalaoa-Gordy</td>
<td>Dennis D. Gordy</td>
<td>C-16543</td>
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<td>1/18/2000</td>
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<td>7/18/2001</td>
<td>5548-01</td>
<td>Parker 1</td>
<td>West Hawaii Water Co.</td>
<td>C-16543</td>
<td>BOTH</td>
<td>8/13/2001</td>
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<td>7/24/2001</td>
<td>6734-02</td>
<td>Jacob's</td>
<td>D &amp; J Enterprises</td>
<td>C-16543</td>
<td>BOTH</td>
<td>8/13/2001</td>
</tr>
<tr>
<td>Approved Well No.</td>
<td>Well Name</td>
<td>Applicant</td>
<td>Driller</td>
<td>Type</td>
<td>Well Construction</td>
<td>Pump Installation</td>
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<td>------------------</td>
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<td>--------------------------------</td>
<td>---------</td>
<td>------</td>
<td>-------------------</td>
<td>-------------------</td>
</tr>
</tbody>
</table>
**TRANSMITTAL LETTER**

**To:** Ryan Imata  
Commission on Water Resource Management  
P.O. Box 621  
Honolulu, HI 96809

**From:** Nancy Burns

**Date:** September 11, 2000

Enclosed please find the following:

<table>
<thead>
<tr>
<th>Copies:</th>
<th>Title:</th>
<th>Dated:</th>
</tr>
</thead>
</table>
| 1 (Original) | Well Construction Permit  
Hokukano Monitor 1 & 2, Well Nos [REDACTED] & [REDACTED] | 9.8.00 |

**Remarks:**  
Cc: Steve Bowles  
Copy to File

Transmittal No. 00911-04
WELL CONSTRUCTION PERMIT
Hokukano Monitor 1 & 2, Well Nos. 3157-01 & 3057-01

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management’s Administrative Rules, Section 13-168, entitled “Water Use, Wells, and Stream Diversion Works”, this document permits the construction and testing of Hokukano Monitor 1 & 2 (Well Nos. 3157-01 & 3057-01) at Halekii St., Island of Hawaii, TMK 6-1-4: 3, subject to the Hawaii Well Construction & Pump installation Standards (12/31/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1 1/2-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pumping test worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

3. In basal ground water, the depth of the well may not exceed one-fourth (1/4) of the theoretical thickness (41 times initial head) of the basal ground water unless otherwise authorized by the Chairperson.

4. The permittee, well operator, and/or well owner shall incorporate mitigation measures to prevent construction debris from entering the aquatic environment, to schedule work to avoid periods of high rainfall, and to revegetate any cleared areas as soon as possible.

5. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee, well operator, and/or well owner shall stop work and contact the Department’s Historic Preservation immediately.

6. The proposed well construction 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 the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) 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 records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

11. If the well is not to be used it must be properly capped. If the well is to be abandoned then the permittee, well operator, and/or well owner must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

12. The permittee, its successors, and assigns shall indemnify, defend, and hold the State of Hawaii harmless from and against any loss, liability, claim, or demand for property damage, personal injury, or death arising out of any act or omission of the applicant, assigns, officers, employees, contractors, and agents under: this permit or relating to or connected with the granting of this permit.

13. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: June 27, 2000
Expiry Date: June 27, 2002

TIMOTHY E. JOHNS, Chairperson
Commission on Water Resource Management

Permittee's Signature: Nancy E. Burns
Firm or Title: 1250 Oceanide Partners

Driller's Signature: C-57 License # C-14513
Firm or Title: WA!E 142G

Printed Name: Nancy E. Burns
Date: 8/30/00

Printed Name: C-57 License # C-14513
Date: 9/20/00

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment

USGS
Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branches
Hawaii Department of Water Supply
Mr. Bob Stuit
Hokulia
78-6831 Alii Dr., K-15
Kailua-Kona, HI 96740

Dear Mr. Stuit:

Well Construction Permit
Hokukano Monitor 1 & 2 (Well Nos. 3157-01 & 3057-01)

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s) that authorize well construction activities but excludes installation work for your permanent pump. As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 13:

Special Conditions

1. The annular space shall be a minimum of 3" per Section 2.6d of the Hawaii Well Construction and Pump Installation Standards.

This permit does not authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (1/23/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."

"Permanent pump installation for capacities between 0-70 gpm and where the proposed use is for private individual needs in non-ground-water management areas may be allowed prior to the final pump installation permit issuance. When required as a condition of the well construction permit, subsequent pumping tests shall validate the acceptability of the permanent pump. The permanent pump installed prior to final pump installation permit issuance is subject to removal if the testing shows that a smaller pump is required to reduce the potential of affecting neighboring wells and localized upconing at the applicant's well."
If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.

Please sign and have the contractor sign both permit originals and return one for our files. Also, copies of the aquifer pump test worksheet and the well completion report form are enclosed for your use.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. Please provide all the information in this packet to your well drilling contractor. The permittee, well operator, and/or well owner are responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well(s), submits a completed Part I of the Well Completion Report form (enclosed) within sixty (60) days after the well construction work is completed. Be advised that you may be subject to fines of up to $1000 per day for any violations of your permit conditions starting from the permit approval date.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000, extension 70255.

Aloha,

TIMOTHY E. JOHNS
Chairperson

Enclosures
WELL CONSTRUCTION PERMIT
Hokukano Monitor 1 & 2, Well Nos. 3157-01 & 3057-01

In accordance with Department of Land and Natural Resources, Commission on Water Resource Management's Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", this document permits the construction and testing of Hokukano Monitor 1 & 2 (Well Nos. 3157-01 & 3057-01) at Haleiwa St., Island of Hawaii, TMK 6-1-4: 3, subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97) which include but are not limited to the following conditions:

1. The Chairperson of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 11/4-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

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6. The proposed well construction 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 the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) 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 records, including time, pumping rate, drawdown, chloride content, and other data.

8. The permittee, well operator, and/or well owner shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

9. The well construction permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (January 23, 1997; HWCPIS). If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result.

10. The permit may be revoked by the Commission if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The work proposed in the well construction permit application shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Chairperson upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Chairperson no later than three (3) months prior to the date the permit expires. If the commencement date is not met, the Commission may revoke the permit after giving the permittee, well operator, and/or well owner notice of the proposed action and an opportunity to be heard.

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12. The permittee, its successors, assigns, officers, employees, contractors, and agents under this permit to relitigate or connected with the granting of this permit.

13. Special conditions in the attached cover transmittal letter are incorporated herein by reference.

Date of Approval: June 27, 2000
Expiration Date: June 27, 2002

TIMOTHY E. JOHNS, Chairperson
Commission on Water Resource Management

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 and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ___________________________     Date: ________________
Printed Name: ___________________________     Firm or Title: ________________
Driller's Signature: ___________________________     C-57 License #: ________________     Date: ________________
Printed Name: ___________________________     Firm or Title: ________________

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.

Attachment
c. USGS
   Department of Health/ Safe Drinking Water, Wastewater, and Clean Water Branch
   Hawaii Department of Water Supply
HOKULI'A
AN EXCEPTIONAL
MASTER-PLANNED COMMUNITY

1250 OCEANSIDE PARTNERS
ANNOUNCES RELOCATION OF ITS OFFICES TO

KEAOUHOU SHOPPING CENTER
SUITE K-15
78-6831 ALII DRIVE
KAILUA-KONA, HAWAI'I 96740

TELEPHONE: 324-1500 FACSIMILE: 324-0171

AS OF MARCH 29, 1999
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 521, Honolulu, Hawaii 96809. Application must be accompanied by 3 copies and a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. The Commission may not accept incomplete applications. For assistance, call the Regulation Branch at 808-684-7325.

For further information and updates to this application form, visit http://www.state.hi.us/ldrperm.

APPLICANT INFORMATION: (Fill out all three, if applicable, and place a check next to the primary contact)

1. (a) WELL OWNER: Hokul'a Contact Person: Bob Stuit Phone: (808) 324-1500
   Mailing Address: 78-6831 Alii Dr., K-15, Kailua-Kona, HI 96740
   Fax: (808) 324-0171 E-mail: rstuit@hokulia.com

2. (b) LANDOWNER: Hokul'a Contact Person: Bob Stuit Phone: (808) 324-1500
   Mailing Address: 78-6831 Alii Dr., K-15, Kailua-Kona, HI 96740
   Fax: (808) 324-0171 E-mail: rstuit@hokulia.com

3. (c) CONTRACTOR: To Be Determined Contact Person: Phone:
   Mailing Address:
   Fax:
   E-mail:
   Lic #: (circle one: C-57, C-57a, or A)

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: Hokukano Monitoring Wells #1 & #2 Island: Hawaii
   Address Bottom of Halekii St. Tax Map Key: 8 - 1 - 04 - 3
   Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1:24,000) and include the name of the quad map, and (b) a property tax map, showing well location referenced to established property boundaries.

3. PROPOSED WORK: (check all that apply)
   □ New Well □ Modify Existing Well □ Abandon/Seal
   □ Install New Pump* □ Modify Pump*
   *State Well No.:
   (If unknown, please call Commission at 808-684-7225)

4. CONSTRUCTION: □ Drilled □ Dug □ Shaft □ Tunnel
   Is this well part of a battery of wells? □ Yes □ No (Please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: NA gallons per minute
   Pump Type (Check one):
   □ Deep Well Turbine □ Rotary □ Propeller
   □ Submersible □ Rotary-Displacement □ Reciprocating
   □ Centrifugal □ Rotary-Gear □ Impulse

6. PROPOSED USE: (check all that apply)
   □ Municipal (including hotels, stores, etc.) □ Industrial
   □ Domestic (individual, noncommercial water system) □ No. of Dwelling Units:
   □ Irrigation (crop) □ No. of Acres:
   □ Military □ Other (explain): Monitor

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: __________ gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
   □ Flowmeter □ Open-pipe □ Weir □ Orifice □ Other (explain)

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: □ COUP □ SMAP □ EIS □ EA □ None □ Other (explain)

9. REMARKS, EXPLANATIONS: Purpose to monitor any impact on groundwater quality from golf course.

I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within (2) years of the approval date, 2) the contractor shall submit to the Commission a well completion/abandonment report within 60 days after the completion date of the permitted work, 3) monthly water use data shall be submitted to the Commission: 4) such approval shall not constitute a determination of cumulative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner: Hokul'a Signature: __________________________ Date: 5/19/00
Landowner: Hokul'a Signature: __________________________ Date: 5/19/00
Contractor: To Be Determined Signature: __________________________ Date: __________________________

For official use only
Latitude: __________________________ Aquifer System No.:
Longitude: __________________________ State Well No.:

WCPIPA Form 5/200
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

Hokukano Monitoring Well #1

Elevation at top of casing: 41 ft., msr

Minimum of Z Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)

Ground Elevation: 40 ft., msr

Solid Casing: (≤ 90% x (Ground Elev. - Water Level Elev.))

- Total Length: 41 ft.
- Nominal Diameter: 2.5 in.
- Wall Thickness: 0.276 in.
- Bottom Elevation: 0 ft., msr

Open Casing:

- Total Length: 5 ft.
- Nominal Diameter: 2.5 in.
- Wall Thickness: 0.276 in.
- Bottom Elevation: 5 ft., msr

Note: Neither bentonite nor mud should be used in saturated zone during drilling

Open Hole:

- Length: NA ft.
- Diameter: NA in.
- Bottom Elevation: NA ft., msr

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,

\[ \text{Bottom Elevation of Well Limit} = \frac{(\text{Water Elevation} - \text{Elevation})}{4} \]

Example: Estimated +2 ft. Water Level Elev. - Bottom Elevation of Well Limit = \( \left( \frac{2}{4} \right) \) = -1.5 ft.

**Solid Casing Material:**

Carbon Steel: compliant with (check one or more): 3 ANSI/AWWA C200 4 API Spec. 5L 5 ASTM A53 6 ASTM A139

And compliant with (check one or more): 7 ASTM A242 8 Type E 9 Type S 10 Grade B 11 Other

Stainless Steel: (check one): 12 ASTM A409 (production wells) 13 ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 14 Schedule 40 15 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one) 16 Schedule 40 17 Schedule 80 18 Schedule 120

Thermoset Plastic: (check one) 19 Filament Wound Resin Pipe conforming to ASTM D2996

- Centrifugally Cast Resin Pipe conforming to ASTM D2997
- Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296

**Open Casing Material:**

Carbon Steel: compliant with (check one or more): 20 ANSI/AWWA C200 21 API Spec. 5L 22 ASTM A53 23 ASTM A139

And compliant with (check one or more): 24 ASTM A242 25 Type E 26 Type S 27 Grade B 28 Other

Stainless Steel: (check one): 29 ASTM A409 (production wells) 30 ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) 31 Schedule 40 32 Schedule 80

PVC Plastic conforming to ASTM F480 and (ASTM D1785 or ASTM D2241): (check one) 33 Schedule 40 34 Schedule 80 35 Schedule 120

Thermoset Plastic: (check one) 36 Filament Wound Resin Pipe conforming to ASTM D2996

- Centrifugally Cast Resin Pipe conforming to ASTM D2997
- Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

For PVC Carbon Thermoset Plastic:
- Thermoset Plastic
- Carbon SIMI
- PVC Solid

- Minimum of 2" Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)
- Ground Elevation: 100 ft.

Solid Casing: [± 90% x (Ground Elev - Water Level Elev)]
- Total Length: 106 ft.
- Nominal Diameter: 2.5 in.
- Wall Thickness: 0.276 in.
- Bottom Elevation: 0 ft.

Open Casing:
- Length: NA ft.
- Diameter: NA in.
- Bottom Elevation: NA ft.

Solid Casing Material:
- Carbon Steel: compliant with (check one or more):\ANSI/AWWA C200\API Spec. 5L\ASTM A53\ASTM A139
- Stainless Steel: (check one):\ASTM A419 (production well)\ASTM A312 (monitor well)
- ABS Plastic conforming to ASTM F490 and ASTM D1527: (check one)
- Steel or Reinforced Plastic Motor Pressure Pipe conforming to ASTM D3985

Open Casing Material:
- Carbon Steel: compliant with (check one or more):\ANSI/AWWA C200\API Spec. 5L\ASTM A53\ASTM A139
- Stainless Steel: (check one):\ASTM A419 (production well)\ASTM A312 (monitor well)
- PVC Plastic conforming to ASTM F490 and ASTM D1527: (check one)
- Steel or Reinforced Plastic Motor Pressure Pipe conforming to ASTM D3985

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*The approximate elevation must be referenced to mean sea level (MSL) at the time of application (ing). Final elevations of well components shall be submitted in the Well Completion/Well Abandonment report to the HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS to ensure that your as-built is in compliance with applicable standards.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or, 

Bottom Elevation of Well Limit = (Water Elevation - Ground Elev) / 4

Example: Estimated 2 ft. Water Level Elev. 

Bottom Elevation of Well Limit = (2 - 41.125) ft. = 39.125 ft.
Location Map – Monitor Well 2
# PUBLIC RECORD DATA

**TMK # 3-8-1-4-3**

| **Owner:** | 1250 OCEANSIDE PARTNERS |
| **Tax Payer:** | 1250 OCEANSIDE PARTNERS |
| **Tax Bill:** | 74-5620 A PALANI ROAD, KAILUA-KONA, HI |
| **Assessed Value Exemption:** | Land: $2,490,500 $0 1,282.22 ac Land Use: 0 |
| **Total Building:** | Buildings: 1 PITT Code: 500 Land Use: 0 |

| **SALES** | 2/13/1989 DEED -MF ANDERSON LYLE $2,670,000 B/P 22854/42 |
| **5/28/1996 DEED** | 1250 OCEANSIDE PARTNERS *(PARTITION DEED)* $0 Doc 96-074240 |

This information has been supplied by third parties and has not been independently verified by Hawaii Information Service and is, therefore, not guaranteed.

http://webresearch.../SearchTMK.asp?ACT=REQ&PAGE=0&FRM=15&REMAIN_FRAMES 5/30/00
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
APPLICATION FOR PERMIT

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form)

2. WELL NAME: Hokukano Monitoring Wells #1 & #2 Hawaii
    Address Bottom of Halekii St.
    Tax Map Key: Zone 8 - 1 - 04 - 3
    Property Map: (a) 2.5-Mile Series USGS topographic map (scale 1:24,000)
    and include the name of the map, and (b) a property tax map, showing
    well location referenced to established property boundaries.

3. PROPOSED WORK: (check all that apply)
    ☑ Construct New Well
    ☑ Install New Pump* 
    ☑ Modify Existing Well*
   ☑ Modify Pump*
   ☑ Abandon/Seal*
   ☑ Other (explain) Monitor

4. CONSTRUCTION:
   ☑ Drilled ☑ Dug ☑ Shaft ☑ Tunnel
   Is this well part of a battery of wells? ☑ Yes ☑ No (Please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: NA gallons per minute
   Pump Type (Check one):
   ☑ Deep Well Turbine ☑ Rotary ☑ Propeller
   ☑ Submersible ☑ Rotary-Displacement ☑ Reciprocating
   ☑ Centrifugal ☑ Rotary-Gear ☑ Impulse

6. PROPOSED USE: (check all that apply)
   ☑ Domestic (individual, noncommercial water system)
   ☑ No. of Dwelling Units:
   ☑ Irrigation (crop)
   ☑ No. of Acres:
   ☑ Municipal (including hotels, stores, etc.)
   ☑ Industrial
   ☑ Other (explain) Monitor

7. (a) PROPOSED AMOUNT OF WITHDRAWAL: gallons per day
(b) METHOD OF FLOW MEASUREMENT:
   ☑ Flowmeter ☑ Open-pipe ☑ Weir ☑ Orifice ☑ Other (explain)

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: ☑ CDUP ☑ SIAF ☑ EIS ☑ EA ☑ None ☑ Other (explain)

9. REMARKS, EXPLANATIONS: Purpose to monitor any impact on groundwater quality from golf course.

I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed within two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 90 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of corrosive water rights and shall not guarantee the pump capacity.

Well Owner Hokulī'a Signature ______________________
Date __/__/____
Landowner Hokulī'a Signature ______________________
Date __/__/____
Contractor To Be Determined Signature ______________________
Date __/__/____

For official use only
Latitude ______________________
Longitude ______________________
Aquifer System No. ______________________
State Well No. ______________________

WCPIPA Form 5/20

**Solid Casing Material:**

- **Carbon Steel:** compliant with (check one or more):
  - ANSI/AWWA C200
  - API Spec. 5L
  - ASTM A53
  - ASTM A139
  - Other
- And compliant with (check one or more):
  - ASTM A242
  - Type E
  - Type S
  - Grade B
  - Other
- **Stainless Steel:** (check one):
  - ASTM A409 (production wells)
  - ASTM A312 (monitor wells)
- **ABS Plastic** conforming to ASTM F480 and ASTM D1527: (check one)
  - Schedule 40
  - Schedule 80
- **PVC Plastic** conforming to ASTM F480 and ASTM D1785 (or ASTM D2241): (check one)
  - Schedule 40
  - Schedule 80
  - Schedule 120

**Open Casing Material:**

- **Carbon Steel:** compliant with (check one or more):
  - ANSI/AWWA C200
  - API Spec. 5L
  - ASTM A53
  - ASTM A139
  - Other
- And compliant with (check one or more):
  - ASTM A242
  - Type E
  - Type S
  - Grade B
  - Other
- **Stainless Steel:** (check one):
  - ASTM A409 (production wells)
  - ASTM A312 (monitor wells)
- **ABS Plastic** conforming to ASTM F480 and ASTM D1527: (check one)
  - Schedule 40
  - Schedule 80
- **PVC Plastic** conforming to ASTM F480 and ASTM D1785 (or ASTM D2241): (check one)
  - Schedule 40
  - Schedule 80
  - Schedule 120
- **Thermoset Plastic:** (check one)
  - Filament Wound Resin Pipe conforming to ASTM D2996
  - Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  - Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  - PTFE Fluorocarbon Tubing conforming to ASTM D3296
  - FEP Fluorocarbon Tubing conforming to ASTM D3296

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**For non-salt water Basalt Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or: Bottom Elevation of Well Limit = \( \frac{\text{Water Elevation} - \text{Water Level Elev.}}{4} \)**

Example: Estimated +2 ft. Water Level Elev. \( \rightarrow \) Bottom Elevation of Well Limit = \( 2 \cdot \frac{\text{Well Elevation}}{4} = 18.5 \text{ ft.} \)
10. PROPOSED WELL SECTION

(Please attach schematic if different from drawing provided below)

Elevation at top of casing: \(101\) ft, \\(\text{m}\)

Hole Diameter: \(6\) in.

Minimum of 2 Radii & &\(4\)" Thick Concrete Pad (to contain benchmark surveyed to nearest \(0.01\) ft.)

Ground Elevation: \(100\) ft, \\(\text{m}\)

Cement Grout: \(75\) ft.

(min. 70% of distance from ground elevation to top of water surface or \(500\) ft., whichever is less.)

Annular space between hole and casing (min. 3"):

\(3\) in.

Rock or Gravel Packing:

\(\text{NA}\)

Material:

\(\square\) Crushed Basalt

\(\square\) Rounded Gravel

Estimated Water Level Elevation: 

\(2\) ft, \\(\text{m}\)

Solid Casing: \(> 90\% \times (\text{Ground Elev.} - \text{Water Level Elev.})\)

Total Length: \(106\) ft.

Nominal Diameter: \(2.5\) in.

Wall Thickness: \(0.276\) in.

Bottom Elevation: 

\(0\) ft, \\(\text{m}\)

Open Casing: \(\square\) Perforated \(\square\) Screen

Total Length: \(5\) ft.

Nominal Diameter: \(2.5\) in.

Wall Thickness: \(0.276\) in.

Bottom Elevation: 

\(-5\) ft, \\(\text{m}\)

Open Hole:

Length: 

\(\text{NA}\)

Diameter: 

\(\text{NA}\)

Bottom Elevation: 

\(\text{NA}\)

Solid Casing Material:

Carbon Steel: compliant with (check one or more):

\(\square\) ANSI/AWWA C200

\(\square\) API Spec. 5L

\(\square\) ASTM A53

\(\square\) ASTM A139

And compliant with (check one or more):

\(\square\) ASTM A242

\(\square\) Type E

\(\square\) Type S

\(\square\) Grade B

\(\square\) Other

Stainless Steel: (check one):

\(\square\) ASTM A409 (production wells)

\(\square\) ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one):

\(\square\) Schedule 40

\(\square\) Schedule 80

PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one):

\(\square\) Schedule 40

\(\square\) Schedule 80

\(\square\) Schedule 120

Thermoset Plastic: (check one):

\(\square\) Filament Wound Resin Pipe conforming to ASTM D2996

\(\square\) Centrifugally Cast Resin Pipe conforming to ASTM D2997

\(\square\) Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

\(\square\) Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

\(\square\) PTFE Fluorocarbon Tubing conforming to ASTM D3296

\(\square\) FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

Carbon Steel: compliant with (check one or more):

\(\square\) ANSI/AWWA C200

\(\square\) API Spec. 5L

\(\square\) ASTM A53

\(\square\) ASTM A139

And compliant with (check one or more):

\(\square\) ASTM A242

\(\square\) Type E

\(\square\) Type S

\(\square\) Grade B

\(\square\) Other

Stainless Steel: (check one):

\(\square\) ASTM A409 (production wells)

\(\square\) ASTM A312 (monitor wells)

ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one):

\(\square\) Schedule 40

\(\square\) Schedule 80

PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one):

\(\square\) Schedule 40

\(\square\) Schedule 80

\(\square\) Schedule 120

Thermoset Plastic: (check one):

\(\square\) Filament Wound Resin Pipe conforming to ASTM D2996

\(\square\) Centrifugally Cast Resin Pipe conforming to ASTM D2997

\(\square\) Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517

\(\square\) Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950

\(\square\) PTFE Fluorocarbon Tubing conforming to ASTM D3296

\(\square\) FEP Fluorocarbon Tubing conforming to ASTM D3296

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells: bottom elevation of well should not be deeper than \(1/4\) of aquifer thickness or,

\[
\text{Bottom Elevation of Wall Limit} = \left(\text{Water Elevation} - \frac{\text{1/4} \times \text{Aquifer Thickness}}{4}\right)
\]

Example: Estimated \(2\) ft, Water Level Elev. --- Bottom Elevation of Wall Limit = \(2 - \frac{5\times2}{4}\) = \(-10.5\) ft.
Location Map - Monitor Well 1
APPLICATION FOR PERMIT

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: Hokukano Monitoring Wells, #1 & #2 Island: Hawaii
   Address: Bottom of Halekii St.  Tax Map Key: 8 - 1 - 04 - 3
   Attach the relevant portion of (a) a 7.5-Minute Series USGS topographic map (scale 1:24,000) and include the name of the quad map, and (b) a property tax map, showing well location referenced to established property boundaries.

3. PROPOSED WORK: 
   (check all that apply)
   ☐ Construct New Well
   ☐ Modify Existing Well
   ☐ Install New Pump
   ☐ Modify Pump
   ☐ Abandon/Seal
   "State Well No.: (if unknown, please call Commission at 587-0225)

4. CONSTRUCTION: 
   ☐ Drilled
   ☐ Dug
   ☐ Shaft
   ☐ Tunnel
   Is this well part of a battery of wells? ☐ Yes ☐ No (Please describe)

5. PROPOSED PUMP INFORMATION: Rated Pump Capacity: NA gallons per minute
   Pump Type (Check one):
   ☐ Deep Well Turbine
   ☐ Rotary
   ☐ Propeller
   ☐ Submersible
   ☐ Rotary-Displacement
   ☐ Reciprocating
   ☐ Centrifugal
   ☐ Rotary-Gear
   ☐ Impulse

6. PROPOSED USE: 
   (check all that apply)
   ☐ Municipal (including hotels, stores, etc.)
   ☐ Industrial
   ☐ Domestic (individual, noncommercial water system)
   ☐ No. of Dwelling Units:
   ☐ Irrigation (crop)
   ☐ No. of Acres:
   ☐ Military
   ☐ Other (explain): Monitor

7. (a) PROPOSED AMOUNT OF WITHDRAWAL:
   gallons per day
   (b) METHOD OF FLOW MEASUREMENT:
   ☐ Flowmeter
   ☐ Open-pipe
   ☐ Weir
   ☐ Office
   ☐ Other (explain)

OTHER IMPORTANT INFORMATION:

8. LEGAL REQUIREMENTS: ☐ CDUP ☐ SMPA ☐ EIS ☐ EA ☐ None ☐ Other (explain)

9. REMARKS, EXPLANATIONS: Purpose to monitor any impact on groundwater quality from golf course.
   (If more space is needed, please attach additional sheet)

I understand that approval of this application attaches the following standard conditions: 1) the proposed work is to be completed in two (2) years of the approval date; 2) the contractor shall submit to the Commission a well completion/abandonment report within 90 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of cumulative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner: Hokuli'a
Signature: [Signature]
Date: 6/19/00
Landowner: Hokuli'a
Signature: [Signature]
Date: 6/19/00
Contractor: To Be Determined
Signature: 
Date: 

For official use only
Latitude: 
Longitude: 
Aquifer System No.
State Well No.

WCPIP Form 52/00
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below) Hokukano Monitoring Well 1

Elevation at top of casing: 41 ft., msl

Hole Diameter: 6 in.

Minimum of 2" Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)

Ground Elevation: 40 ft., msl

Solid Casing: (± 90% x (Ground Elev. - Water Level Elev.))
Total Length: 41 ft.
Nominal Diameter: 2.5 in.
Wall Thickness: 0.276 in.
Bottom Elevation: 0 ft., msl

Open Casing: □ Perforated □ Screen
Total Length: 5 ft.
Nominal Diameter: 2.5 in.
Wall Thickness: 0.276 in.
Bottom Elevation: -5 ft., msl

Solid Casing Material:
Carbon Steel: compliant (check one or more): □ ANSI/AWWA C200 □ API Spec. SL □ ASTM A53 □ ASTM A139
Stainless Steel: (check one):
□ ASTM A242 □ Type E □ Type S □ Grade B □ Other
ABS Plastic conforming to ASTM F460 and ASTM D1527: (check one): □ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F460 and (ASTM D1785 or ASTM D2243): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
□ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
Carbon Steel: compliant (check one or more): □ ANSI/AWWA C200 □ API Spec. SL □ ASTM A53 □ ASTM A139
Stainless Steel: (check one):
□ ASTM A409 (production wells) □ ASTM A312 (monitor wells)
ABS Plastic conforming to ASTM F460 and ASTM D1527: (check one): □ Schedule 40 □ Schedule 80
PVC Plastic conforming to ASTM F460 and (ASTM D1785 or ASTM D2243): (check one): □ Schedule 40 □ Schedule 80 □ Schedule 120
Thermoset Plastic: (check one)
□ Filament Wound Resin Pipe conforming to ASTM D2996
□ Centrifugally Cast Resin Pipe conforming to ASTM D2997
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□ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
□ PTFE Fluorocarbon Tubing conforming to ASTM D3296
□ FEP Fluorocarbon Tubing conforming to ASTM D3296

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,
Bottom Elevation of Well Limit = (Water Elevation - \( \frac{1}{4} \) Water Level Elev.)

Example: Estimated + 2 ft. Water Level Elev. -> Bottom Elevation of Well Limit = \( \left( 2 - \frac{1}{4} \times 2 \right) = -0.5 \) ft.
10. PROPOSED WELL SECTION

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Wall Completion/Well Abandonment report and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or, Bottom Elevation of Well Limit = (Water Elevation - 0.25 X Water Level Elev.)

Example: Estimated + 2 ft, Water Level Elev. → Bottom Elevation of Well Limit = (+2 - 0.25 x 2) = +1.5 ft.

**Solid Casing Material:**
- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200  □ API Spec. SL  □ ASTM A53  □ ASTM A139
  And compliant with (check one or more): □ ASTM A242  □ Type E  □ Type S  □ Grade B  □ Other
- Stainless Steel: (check one): □ ASTM A409 (production wells)  □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40  □ Schedule 80
- PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one) □ Schedule 40  □ Schedule 80  □ Schedule 120
- Thermoset Plastic: (check one) □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296

**Open Casing Material:**
- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200  □ API Spec. SL  □ ASTM A53  □ ASTM A139
  And compliant with (check one or more): □ ASTM A242  □ Type E  □ Type S  □ Grade B  □ Other
- Stainless Steel: (check one): □ ASTM A409 (production wells)  □ ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one) □ Schedule 40  □ Schedule 80
- PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one) □ Schedule 40  □ Schedule 80  □ Schedule 120
- Thermoset Plastic: (check one) □ Filament Wound Resin Pipe conforming to ASTM D2996
  □ Centrifugally Cast Resin Pipe conforming to ASTM D2997
  □ Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
  □ Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
  □ PTFE Fluorocarbon Tubing conforming to ASTM D3296
  □ FEP Fluorocarbon Tubing conforming to ASTM D3296
Location Map - Monitor Well 1

Hokukano
Monitor Well 1
Hokukano Monitor Well 1

Hokukano Monitor Well 2

USGS Topo Map

SCALE 1:24 000

CONTOUR INTERVAL 40 FEET

DATUM IS MEAN SEA LEVEL

DEPTH CURVES IN FEET—DATUM IS MEAN LOWER LOW WATER

THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE

SHORELINE SHOWN REPRESENTS THE APPROPRIATE LINE OF MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 1 FOOT

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22094

A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST
<table>
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<th>D</th>
<th>OBJ</th>
<th>COST</th>
<th>CTR</th>
<th>PROJECT</th>
<th>ACT</th>
<th>AMOUNT</th>
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</table>

**REMARKS:**

LINE (1) Well No. 6451-04 (WCPA/PIPA)
LINE (2) Well No. 3157-01, 3057-01 (WCPA)
LINE (3) 

---

**Check Details:**

DORIS REILLY
GERRY REILLY
P.O. BOX 44525
KAWAIHAE, HI 96743

Pay to the Order of

DORIS REILLY
GERRY REILLY
P.O. BOX 44525
KAWAIHAE, HI 96743

For

DORIS REILLY
GERRY REILLY
P.O. BOX 44525
KAWAIHAE, HI 96743

---

**Account Information:**

1250 OCEANSIDE PARTNERS
OPERATING ACCOUNT
75-6831 ALII DR 15K
KAILUA-KONA, HAWAII 96740

*TWENTY-FIVE AND XX/100*

**State of Hawaii**
Department of Land and Natural Resources

**Cheque Presentation:**

John C. [Signature]

---

**Bank Information:**

200264
200264 58-102/2213 57

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**End of Check Details**
To: Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

From: 1250 Oceanside Partners

Date: June 1, 2000

Enclosed please find the following:

Copies: Title: Dated:
1 original Application for Permit - Monitoring Well Construction 5.19.00
3 copies Application for Permit - Monitoring Well Construction 5.19.00
1 Filing Fee - Check #200264, $25.00 5.31.00

Remarks:
APPLICATION FOR PERMIT

WELL & PUMP INFORMATION: (Please fill in the diagram on the back of this form.)

2. WELL NAME: Hokukano Monitoring Wells #1, #2
   Address: Bottom of Balekii St.
   Tax Map Key: 8 - 1 - 04 - 3
   Well and Pump Information: (Please fill in the diagram on the back of this form.)
   3. PROPOSED WORK:
      (Check all that apply)
      X Construct New Well
      X Modify Existing Well
      X Abandon/Seal
      X Install New Pump
      X Modify Pump

   4. CONSTRUCTION:
      X Dilled
      X Dug
      X Shaft
      X Tunnel

   5. PROPOSED PUMP INFORMATION:
      Rated Pump Capacity: NA gallons per minute
      Pump Type (Check one):
      X Deep Well Turbine
      X Rotary
      X Submersible
      X Reciprocating
      X Centrifugal
      X Impulse

   6. PROPOSED USE:
      (Check all that apply)
      X Municipal (including hotels, stores, etc.)
      X Domestic (individual, noncommercial water system)
      X Irrigation (crop)
      X Industrial
      X No. of Dwelling Units:
      X No. of Acres:
      X Military
      X Other (explain): Monitor

   7. (a) PROPOSED AMOUNT OF WITHDRAWAL:
      X Gallons per day:
      X Method of Flow Measurement:
      X Flowmeter
      X Open-pipe
      X Well
      X Office
      X Other (explain):

   9. REMARKS, EXPLANATIONS:
      Purpose to monitor any impact on groundwater quality from golf course.

   OTHER IMPORTANT INFORMATION:

   8. LEGAL REQUIREMENTS:
      X COUP
      X SMAP
      X EIS
      X EA
      X None
      X Other (explain):

   10. APPROVAL:
       Signature
       Date

   For official use only:
   Latitude
   Longitude
   Aquifer System No.
   State Well No.
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

Hokukano Monitoring
Well #1

Elevation at top of casing 41 ft. mast

Cement Grout: 35 ft. (min. 70% of distance from ground elevation to top of water surface or 500 ft., whichever is less.)

Minimum of 2' radius & 4" thick concrete pad to contain benchmark surveyed to nearest 0.01 ft.

Ground Elevation: 40 ft. mast

Solid Casing: (≥ 90% x (Ground Elev. - Water Level Elev.)

<table>
<thead>
<tr>
<th>Total Length</th>
<th>41 ft.</th>
<th>Nominal Diameter</th>
<th>2.5 in.</th>
<th>Wall Thickness</th>
<th>0.276 in.</th>
<th>Bottom Elevation</th>
<th>0 ft. mast</th>
</tr>
</thead>
</table>

Open Casing:

<table>
<thead>
<tr>
<th>Total Length</th>
<th>5 ft.</th>
<th>Nominal Diameter</th>
<th>2.5 in.</th>
<th>Wall Thickness</th>
<th>0.276 in.</th>
<th>Bottom Elevation</th>
<th>NA ft.</th>
</tr>
</thead>
</table>

Solid Casing Material:

- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200
- Galvanized Steel API Spec. 5L
- ASTM A53
- ASTM A139
- Other: ASTM A422 Type E
- Type S
- Grade B

- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
- Schedule 40
- Schedule 80

- PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one)
- Schedule 40
- Schedule 80
- Schedule 120

Thermoset Plastic: (check one)

- Filament Wound Resin Pipe conforming to ASTM D2996
- Centrifugally Cast Resin Pipe conforming to ASTM D2997
- Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:

- Carbon Steel: compliant with (check one or more): ANSI/AWWA C200
- Galvanized Steel API Spec. 5L
- ASTM A53
- ASTM A139
- Other: ASTM A422 Type E
- Type S
- Grade B
- Other

- Stainless Steel: (check one):
- ASTM A409 (production wells)
- ASTM A312 (monitor wells)

- ABS Plastic conforming to ASTM F480 and ASTM D1527: (check one)
- Schedule 40
- Schedule 80

- PVC Plastic conforming to ASTM F480 and ASTM D1785 or ASTM D2241: (check one)
- Schedule 40
- Schedule 80
- Schedule 120

- Thermoset Plastic: (check one)
- Filament Wound Resin Pipe conforming to ASTM D2996
- Centrifugally Cast Resin Pipe conforming to ASTM D2997
- Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517
- Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950
- PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296

* The approximate elevation must be referenced to mean sea level (msl) at the time of application filing. Final elevations of well components shall be submitted in the Well Completion/Well Abandonment reports and referenced to a benchmark which has been established by a surveyor licensed by the State.

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or, Bottom Elevation of Well Limit = (Water Elevation - 0.25 Water Level Elev.)

Example: Estimated +2 ft. Water Level Elev. Bottom Elevation of Well Limit = (2 - (1/4 x 2)) = 1.5 ft.
**Hokkano Monitoring Well #2**

10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

**Solid Casing Material:**
- Carbon Steel: compliant with (check one or more): ANSI/WWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: (check one or more): ASTM A242, Type E, Type S, Grade B, Other
- ABS Plastic conforming to ASTM F490 and ASTM D1527: (check one) Schedule 40, Schedule 80
- PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one) Schedule 40, Schedule 80, Schedule 120
- Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2996, Centrifugally Cast Resin Pipe conforming to ASTM D2997, Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517, Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950, PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296

**Open Casing Material:**
- Carbon Steel: compliant with (check one or more): ANSI/WWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: (check one or more): ASTM A242, Type E, Type S, Grade B, Other
- ABS Plastic conforming to ASTM F490 and ASTM D1527: (check one) Schedule 40, Schedule 80
- PVC Plastic conforming to ASTM F490 and (ASTM D1785 or ASTM D2241): (check one) Schedule 40, Schedule 80, Schedule 120
- Thermoset Plastic: (check one) Filament Wound Resin Pipe conforming to ASTM D2996, Centrifugally Cast Resin Pipe conforming to ASTM D2997, Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3517, Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950, PTFE Fluorocarbon Tubing conforming to ASTM D3296
- FEP Fluorocarbon Tubing conforming to ASTM D3296

**PUMP INSTALLATION STANDARDS**

To ensure that your well is in compliance with applicable standards.

- Solid Casing: (≥ 90% x (Ground Elev. - Water Level Elev.))
  - Total Length: 106 ft.
  - Nominal Diameter: 2.5 in.
  - Wall Thickness: .276 in.
  - Bottom Elevation: 0 ft., m.a.s.

- Open Casing: (check one or more): Screen, Perforated Screen
  - Total Length: 5 ft.
  - Nominal Diameter: 2.5 in.
  - Wall Thickness: .276 in.
  - Bottom Elevation: -5 ft., m.a.s.
  - note: Neither bentonite nor mud should be used in saturated zone during drilling

**For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,**

- Bottom Elevation of Well Limit = (Water Elevation - .25 x Aquifer Thickness)

**Example:** Estimated +2 ft. Water Level Elev. → Bottom Elevation of Well Limit = (2 - .25 x 0.25) = -0.5 ft.
Location Map – Monitor Well 2