<table>
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<tr>
<th>FROM: Ryan</th>
<th>DATE: 3/31/10</th>
<th>SUSPENSE DATE:</th>
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<td>CHENG, C.</td>
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<td>CHONG, R.</td>
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<td>HOAGBIN, S.</td>
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<td>ICE, C.</td>
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Expired end of 109 - I figured no need to reroute, just extend.

Susan - Scan for me.
March 4, 2010

Mr. Derrick Moreira  
Derrick's Well Drilling and Pump Service  
P.O. Box 2187  
Keeau, HI 96749

Dear Mr. Moreira:

Extension of Well Construction/Pump Installation Permit for Well No. 5914-01

This is in response to your e-mail on March 3, 2010 requesting an extension for the completion date of the Broda Well (Well No. 5914-01). Your request is approved. Your new completion date is October 24, 2011. All other conditions of your permit remain the same.

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

Sincerely,

KEN C. KAWAHARA, P.E.  
Deputy Director

c: Edmund Broda
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR PERMIT ISSUANCE 4/17/07

FROM: RYAN
TO: INIT.

DATE: 10/15/07
SUSPENSE DATE: __________

TO: CHING, F. INIT: ______
TO: CHONG, R. INIT: ______
TO: DANBARA, S. INIT: ______
TO: ENGLAND, D. INIT: ______
TO: FUJII, N. INIT: ______
TO: HARDY, R. INIT: ______
TO: HOAGBIN, S. INIT: ______
TO: ICE, C. INIT: ______
TO: IMATA, R. INIT: ______
TO: KIMURA, J. INIT: ______

FOR: Approval ______
FOR: Signature ______
FOR: Information ______

PLEASE: See Me ______
PLEASE: Review & Comment ______
PLEASE: Take Action ______
PLEASE: Type Draft ______
PLEASE: Type Final ______
PLEASE: File ______
PLEASE: Xerox ______ copies

WELL NUMBER 5914-01 WELL NAME Broda

application type BOTH
1 WCP COVER LETTER
2 WCP
3 WELL CHECK PRINTOUT
4 PIP COVER LETTER
5 PIP

COMMENTS:
6 SDWB
7 WWB
8 CWB
9 LD
10 HP
11 LUC in conservation district
12 OCCL in conservation district
13 SMA in sma -- no permit nec.

NOTES:
DRILLER Derrick Moreira
TMK 3-6-004:007
PUMP CAPACITY 30
WELL OWNER Edmund Broda
LAND OWNER Edmund Broda
COMMENT DEADLINE 10/24/07
Ref: 5914-01.wcp

November 28, 2007

Mr. Derrick Moreira
Derrick's Well Drilling and Pump Service
P.O. Box 2187
Keeau, HI 96749

Dear Mr. Moreira:

Well Construction Permit
Broda Well (Well No. 5914-01)

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 a 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. Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.

2. The casing depth shall be in compliance with Section 2.4(d) of the Hawaii Well Construction and Pump Installation Standards. Specifically, PVC shall not be used for casing greater than 200'.

Please refer to the Permit Processes Worksheet (transmitted with your acknowledgement letter) for further information regarding the process of drilling a well and installing a pump.

No withdrawal of water shall be made other than for testing purposes until a certificate of pump installation completion has been issued by the Commission.

Please sign both permit originals and return one for our files. For copies of the aquifer pump test worksheet, please call staff or visit www.state.hi.us/dlnr/cwrmlforms.htm.

IMPORTANT - Drilling work shall not commence until a fully signed permit is returned to the Commission. The permit shall be prominently displayed or made available at the construction site during construction. Be advised that you may be subject to fines of up to $5,000 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.

Sincerely,

W/Go

LAURA H. THIELEN
Chairperson

Enclosures

c: Edmund Broda (with applicable comments – DOH SDWB, WWB, CWB)
USGS
Hawaii DWS
WELL CONSTRUCTION PERMIT

Broda Well, Well No. 5914-01

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 Broda Well (Well No. 5914-01) at TMK 3-6-004:007, Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) 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. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

3. The well construction permit shall be for construction and testing of the well only. The permittee shall coordinate with the Chairperson and conduct a pumping test in accordance with the HWCPIS (the latest pump test worksheet can be obtained by contacting Commission staff or at www.hawaii.gov/dlnr/cwrmlforms.htm). The permittee shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson. No withdrawal of water shall be made for purposes other than testing without a Certificate of Pump Installation Completion. The permitted pump capacity described on the pump installation permit may be reduced in the event that the pump test does not support the capacity.

4. 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.

5. The permittee 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.

6. In the event that historically significant remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and immediately contact the Department of Land and Natural Resources' State Historic Preservation Division. Work may recommence only after written concurrence by the State Historic Preservation Division.

7. 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.

8. The Well Completion Report Part I shall be submitted to the Chairperson within sixty (60) days after completion of work (please contact staff or visit www.hawaii.gov/dlnr/cwrmlforms.htm for current form).

9. The permittee shall comply with all applicable laws, rules, and ordinances; non-compliance may be grounds for revocation of this permit.

10. The well construction permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the HWCPIS. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

11. 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 the date the permit expires.

12. If the well is not to be used it must be properly capped. If the well is to be abandoned during the course of the project then the permittee must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing or plugging work.

13. 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.

14. This permit shall apply to the location shown in the application only. If the well is to be relocated, the permittee shall apply for a new well construction/pump installation permit in accordance with Hawaii Administrative Rules §13-168-12(f).

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

Date of Approval: October 24, 2007
Expiration Date: October 24, 2009

LAURA H. THIELEN, 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 have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Driller’s Signature: Derrick Moreira
C-57 License #: C-28001
Printed Name: Derrick Moreira
Firm or Title: Derrick's Well Drilling and Pump Service

Date: February 2, 2009

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.
November 28, 2007

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) that authorize permanent pump installation work for your well(s). As part of the Chairperson's approval, the following special conditions were added and are part of your permit under Permit Condition 11:

**Special Conditions**

1. If the elevation benchmark needs to be altered, the permittee, well operator, and/or well owner shall ensure that the benchmark is transferred (or the well resurveyed) and documentation of the new benchmark shall be submitted to the Commission within sixty (60) days after the pump is installed.

2. Attached for your information are copies of the Department of Health's (DOH) review comments. Please note DOH's requirements related to discharge of effluent from well drilling and testing activities.

The permittee is responsible for all conditions of the permit. This includes ensuring the submission of a completed Well Completion Report Part II form within sixty (60) days after the pump installation work is completed. Be advised that you may be subject to fines of up to $5,000 per day for any violations of your permit conditions starting from the permit approval date.

Please sign both permit originals and return one for our files.

**IMPORTANT** - Pump installation shall not commence until a fully signed permit is returned to the Commission.

If you have any questions, please call Ryan Imata of the Commission staff at 587-0255.

Sincerely,

LAURA H. THIELEN
Chairperson

Enclosure
c: Edmund Broda (with applicable comments – DOH SDWB, WWB, CWB)
USGS
Hawaii DWS
PUMP INSTALLATION PERMIT
Broda Well, Well No. 5914-01

Note: This permit shall be prominently displayed at the site until the work is completed

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 pump installation for Broda Well (Well No. 5914-01) at TMK 3-6-004:007, Hawaii, subject to the Hawaii Well Construction & Pump Installation Standards (HWCPIS - February 2004) which include but are not limited to the following conditions:

1. The Chairperson to 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 covered by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. No withdrawal of water shall be made other than for testing until a Certificate of Pump Installation Completion has been issued by the Commission.

3. This permit shall be prominently displayed, or made available, at the site of construction work until work is completed.

4. The pump installation permit shall be for installation of a 30 gpm rated capacity, or less, pump in the well. This permanent capacity may be reduced in the event that the pump test data does not support the capacity.

5. A water-level measurement access shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels.

6. The permittee shall install an approved meter or other appropriate means for measuring and reporting withdrawals and appropriate devices or means for measuring chlorides and temperature at the well head.

7. Well Completion Report Part II shall be submitted to the Chairperson within 60 days after completion of work. This form can be obtained by contacting staff or on the internet at www.hawaii.gov/dlnr/cwnm.

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

9. The pump installation permit application and any related staff submittal approved by the Commission are incorporated into this permit by reference. This permit is also subject to the HWCPIS. If the HWCPIS are not followed and as a consequence water is wasted or contaminated, a lien on the property may result. Any variances from the HWCPIS shall be approved by the Chairperson prior to invoking the variance.

10. The work proposed in the pump installation 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 the date the permit expires.

11. 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.

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

Date of Approval: October 24, 2007
Expiration Date: October 24, 2009

LAURA H. THIELEN, 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 pump installer have signed, dated, and returned the permit to the Commission. I understand that this permit is not to be transferred to any other entity. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $5,000 per day starting from the permit date of approval.

Installer's Signature: ___________________________  C-57, C-57a, or A License #: C-28001  Date: ____________

Printed Name: Derrick Moreira  Firm or Title: Derrick's Well Drilling and Pump Service

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

Attachments
Well Check Program
4/1/04 - Revised for update to Well Standards (February 2004)

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<tr>
<td>Well Name</td>
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<td>Ground Elevation</td>
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<td>Cement Grout</td>
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<td>Solid Casing Specification</td>
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<td>Solid Casing Wall Thickness</td>
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<td>Open Casing Length</td>
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Results

Well Depth
- Theoretical Thickness of Aquifer: 205
- 1/4 Aquifer Thickness: 51.25

Depth of Well below Sea Level: -10 okay Section 2.2

Well Casing
- Minimum Wall Thickness
  - Material: pvc plastic
  - Minimum Thickness per standards: no requirement
  - Wall Thickness Provided: 0.25 too small pvc Section 2.4(b)
- Minimum Length of Solid Casing
  - 90% of ground to top of aquifer: 346.5
  - Length of solid casing Provided: 390 okay Section 2.4(c)
- Casing Material
  - Schedule 40 in compliance Section 2.4(d)

(for pvc only - check for 200' limit)
- too deep for plastic Section 2.4(d)

Annular Space
- Depth of Grouting
  - Calculated Depth of Grouting: 269.5
  - Depth of Grouting provided: 275 okay Section 2.6(c)
- Minimum Annular Space required: 2
- Thickness of Annular Space: 3 okay Section 2.6(d)
September 24, 2007

TO: Honorable Chiyoue L. Fukino, M.D., Director
Department of Health
Attention: Director's Office
Harold Yee, Wastewater Branch
Stuart Yamada, Safe Drinking Water Branch
Alec Wong, Clean Water Branch

FROM: Laura H. Thelen, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Broda Well (Well No. 5914-01)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the program, plans, and objectives specific to your department. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RIs:
Attachment(s)

RESPONSE: UIC: Condition A. 10/5/07 CH

[ ] This well qualifies as a source which will serve as a source of potable water in a public water system (defined as serving 25 or more people at least 60 days per year of at least 15 service connections) and must receive Director of Health approval before it is used to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, 11-1-20-29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and regularly monitor the water quality thereafter. However, if future planning use from this source面条s is to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable systems with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] For the applicant's information, a source of possible wastewater contamination (?) is located near the proposed well site (information attached).

[ ] An NPDWS permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] In the event that the location of the well changes but is still within the parcel described on this application, our division considers the comments to still be applicable, and we do not need to review the new location.

[ ] No comments/objections

Contact Person: __________________________ Phone: __________________________
Signed: __________________________ Date: __________________________

Laura H. Thelen, Chairperson
Commission on Water Resource Management

SEP 28 2007

OCT-09-2007 08:21AM FAX: 587-0255 ID: DLNR CRWM PAGE:001 R=94%
CWRM Application Source: Broda Well (State Well No. 5914-01)

Safe Drinking Water Branch Engineering Section

See attached private water wells information sheet.

Underground Injection Control (UIC)

Well water quality should be initially and periodically tested for its acceptable and intended use, especially if for human consumption. Water quality should not be presumed acceptable and unchanging. Land-based activities around the well and within the well’s recharge area may, over time, have an unacceptable effect on the well’s water quality. Well construction materials and related equipment could also affect water quality.

Questions about UIC may be directed to Chauncey Hew at 586-4258.
September 24, 2007

TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Director's Office
Harold Yee, Wastewater Branch
Stuart Yamada, Safe Drinking Water Branch
Alec Wong, Clean Water Branch

FROM: Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Broda Well (Well No. 5914-01)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RI:ss
Attachment(s)

RESPONSE:

This well qualifies as a source which will serve as a source of possible water to a public water system (defined as serving 25 or more people at least 60 days per year or 5 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title 11, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29. This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before utilizing such water and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

If the well is used to supply both possible and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable pipes with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

For the applicant's information, a source of possible wastewater contamination has not been located near the proposed well site (information attached).

An NPDES permit is required.

Other relevant DOH rules/regulations, information, or recommendations are attached.

In the event that the location of the well changes but is still within the parcel described on this application, our division considers the comments to still be applicable, and we do not need to review the new location.

No comments/objective.

Contact Person: Donna L. Sepo
Phone: 966-4303

Date: Oct. 9, 2007

Signed: Donna L. Sepo
The Department of Health, Clean Water Branch (CWB) has the following comments:

1. For Well-Drilling Activities

Any discharge to State waters of treated process wastewater effluent associated with well drilling activities is regulated by Hawaii Administrative Rules, Title 11, Chapter 55, Appendix I, effective November 7, 2002. Treated process wastewater effluent covered by this general permit includes well drilling slurries, lubricating fluids wastewater, and well purge wastewater. This general permit does not cover well pump testing. The applicable Notice of Intent (NOI) Forms and filing fee shall be submitted at least thirty (30) days before the start of discharge to the:

Department of Health
Clean Water Branch
919 Ala Moana Boulevard, Room 301
Honolulu, Hawaii 96814-4920

The CWB-NOI Forms are available online at
Inquiries may be directed to the CWB at (808) 586-4309 or by fax (808) 586-4352.

2. For Well Pump Testing

The discharger shall take all measures necessary to prevent the discharge of pollutants from entering State waters. Such measures shall include, if necessary, containment of initial discharge until the discharge is essentially free of pollutants. If the discharge is entering a stream or river bed, best management practices shall be implemented to prevent the discharge from disturbing the clarity of the receiving water. If the discharge is entering a storm drain, the discharger must obtain written permission from the owner of the storm drain prior to discharge. Furthermore, best management practices shall be implemented to prevent the discharge from collecting sediments and other pollutants prior to entering the storm drain.
TO: Honorable Chiyome L. Fukino, M.D., Director
   Department of Health
   Attention: Director's Office
   Harold Yee, Wastewater Branch
   Stuart Yamada, Safe Drinking Water Branch
   Alec Wong, Clean Water Branch

FROM: Laura H. Thielen, Chairperson
   Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
   Broda Well (Well No. 5914-01)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title II, Chapter 20, Rules Relating to Potable Water Systems, § 11·20·29.

[ ] This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

[ ] If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

[ ] It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

[ ] An NPDES permit is required.

[ ] Other relevant DOH rules/regulations, information, or recommendations are attached.

[ ] In the event that the location of the well changes but is still within the parcel described on this application, our division considers the comments to still apply, and we do not need to review the new location.

[ ] No comments/objections

Contact Person: Gemy Nunogawa in Hilo
Phone: 933-0401
Date: 10-01-07

Signed: [Signature]

Phone: [Number]
Date: [Date]
INDIVIDUAL WASTEWATER SYSTEM (IWS) PROFILE

An individual wastewater system (IWS) file has been found and the following information is provided. In general, the Department of Health has reviewed and approved of the plans based on the information submitted as verification that a treatment IWS such as a septic tank/aerobic unit was constructed and authorized to be used for wastewater disposal from a building/dwelling.

IWS cesspool profile.wpd sam as of May 17, 2007

<table>
<thead>
<tr>
<th>General Information</th>
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<tbody>
<tr>
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<td>25417</td>
<td>IWS type</td>
<td>Cesspool</td>
<td>Status</td>
</tr>
<tr>
<td>File Number</td>
<td></td>
<td></td>
<td>Submit</td>
<td>Use approved</td>
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<tr>
<td>Engineer</td>
<td>Leonard Jacoby</td>
<td></td>
<td>Reviewed</td>
<td>6/10/1999</td>
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<td>3-6-004 :007</td>
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<th>Site Information</th>
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<tbody>
<tr>
<td>Property Owner</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First Name</td>
<td>Edmund</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last Name</td>
<td>Broda</td>
<td></td>
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<table>
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<tr>
<th>Dwelling Information</th>
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<tr>
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<tr>
<td>Flow Rate</td>
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<table>
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<tr>
<th>IWS System Information</th>
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<tr>
<td>Type</td>
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<tr>
<td>Percolation</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

For further information, please feel free to call the Wastewater Branch engineer as listed:
Johnny Ong, Oahu, Wastewater Branch (808) 586-4294 Fax 586-4300
Roland Tejano, Maui, Maui District Health Office (808) 984-8232 Fax 984-8237
Dane Hiromasa, Kona, Kealakekua Health Center (808) 322-1963 Fax 322-1511
Jerry Nunogawa, Hilo, Hawaii District Health Office (808) 933-0401 Fax 933-0400
Lori Vetter, Kauai, Kauai District Health Office (808) 241-3323 Fax 241-3566
# NEW CESSPOOL INFORMATION CARD

<table>
<thead>
<tr>
<th>Field</th>
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<tbody>
<tr>
<td>TMK:</td>
<td>(3) 3-6-041:07</td>
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<tr>
<td>Property Owner:</td>
<td>ED BRODA</td>
</tr>
<tr>
<td>Project Address:</td>
<td>MAMALAHOA HOU</td>
</tr>
<tr>
<td>District:</td>
<td>N. Hilo</td>
</tr>
<tr>
<td>Engineer:</td>
<td>L. Jacoby</td>
</tr>
<tr>
<td>Contractor:</td>
<td>DOUBLE D SERVICE</td>
</tr>
<tr>
<td>Distance from Building:</td>
<td>24'</td>
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<tr>
<td>Distance from Property Line:</td>
<td>250'</td>
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<tr>
<td>Diameter (Clear) Feet:</td>
<td>6'</td>
</tr>
<tr>
<td>Depth Feet:</td>
<td>14'</td>
</tr>
<tr>
<td>No. Feet to Water Table:</td>
<td>300'</td>
</tr>
<tr>
<td>Ground Slope:</td>
<td>6%</td>
</tr>
<tr>
<td>Type of Lining:</td>
<td>CUTTING ROCK</td>
</tr>
<tr>
<td>Reinforced Concrete Cover:</td>
<td>#4' S @ 8&quot; O.C. 6'4&quot; Thck.</td>
</tr>
<tr>
<td>Distance from Finished Ground to Top of Cover (Feet):</td>
<td>1'</td>
</tr>
<tr>
<td>Date Inspected by Engineer:</td>
<td>11/30/99</td>
</tr>
<tr>
<td>No. of bedrooms:</td>
<td>3</td>
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As the engineer performing the final inspection, I submit the above information and the "As-built" as drawn on the back of this card. I also submit the following statement:

- The cesspool has been installed in strict accordance with the plans submitted and approved by DOH.
- The noted changes to the approved plans have been made, and the cesspool installed is acceptable to me.
- The construction of the cesspool is not in accordance with the approved plans and I do not accept the changes made to the plans designed by me.

Engineer's Signature and Date: 11/9/99
FOR: ED BRODA
98-1234 AREA HEIGHTS DRIVE
HONOLULU, HI 88701

T.M.K. (3) 3-6-04; 7
LOT AREA: 21.03 ACRES
ZONING: A-20a & CONSERVATION
ELEVATION: 300'±

CESSPOOL SETBACKS - MIN.
TO PROPERTY 9 FT.
TO BUILDING WALL LINE 5 FT.
TO GROUNDWATER 5 FT.
TO LARGE TREES 10 FT.

SITE PLAN
SCALE: 1" = 150'
(SEE SITE PLAN DETAIL)

SITE PLAN DETAIL
SCALE: 1" = 20'

NOTES:
1. NO VEHICULAR TRAFFIC OVER CESSPOOL.
2. EXCAVATION TO BE INSPECTED BY ENGINEER BEFORE CONSTRUCTING COVER.
3. THE ENGINEER IS TO REVIEW AND APPROVE OF ALL CHANGES TO CESSPOOL AND CONSTRUCTION SPECIFICATIONS.
4. CESSPOOL MUST BE INSTALLED BY C-9 cesspool CONTRACTORS, C-37 PLUMBING CONTRACTORS, OR BY A GENERAL ENGINEERING CONTRACTOR.

JACOBY ENGINEERING, INC.
P.O. BOX 10323
HILO, HAWAII 96721
September 24, 2007

TO: Russell Tsuji, Administrator
    Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         Broda Well (Well No. 5914-01) TMK 3-6-004-007

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. **Please respond by returning this cover memo form by October 24, 2007.** If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.

☒ A water lease/permit is **not** required of this applicant.

[ ] A water lease/permit has been obtained by the applicant through lease no. __________

[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.

☒ No objections

Original source of private title is Grant 1062 issued prior to Statehood.

[ ] Other comments:

Gary Martin
Contact Person: __________________________ Phone: 587-0421

Signed: __________________________ Date: OCT 5 2007
COMMISSION ON WATER RESOURCE MANAGEMENT
ROUTE SLIP FOR NEW APPLICATIONS

FROM: RYAN
DATE: 3-Aug-07
SUSPENSE DATE: 10-Aug-07

TO: CHING, F.
INIT: NAKAMA, L.
TO: FUJII, N.
INIT: GOODING, K.
TO: HARDY, R.
INIT: HIGA, D.
TO: HOAGBIN, S.
INIT: ICE, C.
TO: IMATA, R.
INIT: KUNIMURA, I.

PLEASER:
1 Approval
1 Signature
3 Information

PLEASE:
See Me
1 Review & Comment
Take Action
2 Type Draft acknow letter
File
4 Xerox copies

WELL NUMBER S914-01
WELL NAME Broda

WELL CONSTRUCTION
PUMP INSTALLATION
BOTH

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated

1 TRANS. LETTER
2 PERMIT PROCESS TABLE
3 CWRM MAP
4 APPL. FORM (11 COPIES)
5 USGS MAPS (11 COPIES)
6 TAX MAPS (11 COPIES)
7 PARCEL OWNER VERIF.
8 CONTRACTOR VERIF.
9 ALL INFO FILLED IN
10 BACKGROUND CHECK
11 $25 FEE DEPOSIT SLIP
12 DHP/CDUP/SMA pre-screen (SMA map printout http://gis.hicentral.com/website/parcelzoning/viewer.htm., or INGRID'S SMA/CD MAP)

FOLDER:
☑ MADE NEW FILE FOLDER, ATTACHED
☐ FOLDER FILE ALREADY MADE, IN FILE CABINET

INCOMPLETE ACTION DATES:

DATE ACTION

September 24, 2007

Mr. Derrick Moreira
Derrick's Drilling and Pump Service
P.O. Box 2187
Keeau, HI 96749

Dear Mr. Moreira:

Well Construction/Pump Installation Permit Application for Well No. 5914-01

We acknowledge receipt, on July 26, 2007, of your completed Well Construction/Pump Installation permit application and filing fee for the Broda Well (Well No. 5914-01). You can expect your application to be processed within ninety (90) days from this date.

For your information, the attached table describes the process, responsible parties, and deadline requirements for drilling or modifying a well and installing, modifying, or replacing a pump.

By this acceptance letter, we are also notifying the well operator/landowner that water may not be pumped for purposes other than testing until the certificate of well construction/pump installation completion letter is issued to the well operator and landowner. Additionally, the permitted pump capacity described on the pump installation permit may be reduced in the event that the pump test does not support the capacity. No certificate of pump installation will be issued until the Commission has determined that the pump capacity will not have adverse effects on the aquifer, other nearby wells, or streams. In other words, you may need to remove the pump and install a smaller pump at the Commission’s discretion before you can withdraw water for purposes other than testing.

If you have any questions about your permit application, please contact Ryan Imata of the Commission staff at 587-0255 or toll-free at 974-4000 (Hawaii), 274-3141 (Kauai), 984-2400 (Maui), or 1-800-468-4644 (Lanai & Molokai) extension 70255.

Sincerely,

KEN C. KAWAHARA, P.E.
Deputy Director

c: Edmund Broda
TO: Honorable Chiyome L. Fukino, M.D., Director
Department of Health
Attention: Director’s Office
Harold Yee, Wastewater Branch
Stuart Yamada, Safe Drinking Water Branch
Alec Wong, Clean Water Branch

FROM: Laura H. Thielen, Chairperson
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
Broda Well (Well No. 5914-01)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application for any conflicts or inconsistencies with the programs, plans, and objectives specific to your department. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume that you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:

This well qualifies as a source which will serve as a source of potable water to a public water system (defined as serving 25 or more people at least 60 days per year or has 15 or more service connections) and must receive Director of Health approval prior to its use to comply with Hawaii Administrative Rules (HAR), Title II, Chapter 20, Rules Relating to Potable Water Systems, §11-20-29.

This well does not qualify as a source serving a public water system (serves less than 25 people or more people at least 60 days per year or 15 service connections) and if the well water is used for drinking, the private owner should test for bacteriological and chemical presence before initiating such use and routinely monitor the water quality thereafter. However, if future planned use from this source increases to meet the public water system definition then Director of Health approval is required prior to implementation.

If the well is used to supply both potable and non-potable purposes in a single system, the user shall eliminate cross-connections and backflow connections by physically separating potable and non-potable systems by an air gap or an approved backflow preventer, and by clearly labeling all non-potable spigots with warning signs to prevent inadvertent consumption of non-potable water. Backflow prevention devices should be routinely inspected and tested.

It does not appear that this well will be used for consumptive purposes and is not subject to Safe Drinking Water Regulations.

For the applicant’s information, a source of possible wastewater contamination is not located near the proposed well site (information attached).

An NPDES permit is required.

Other relevant DOH rules/regulations, information, or recommendations are attached.

In the event that the location of the well changes but is still within the parcel described on this application, our division considers the comments to still be applicable, and we do not need to review the new location.

No comments/objections

Contact Person: Phone: __________________________
Signed: ____________________________ Date: ____________________________
September 24, 2007

TO: Russell Tsuji, Administrator
    Land Division

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
          Broda Well (Well No. 5914-01) TMK 3-6-004:007

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255.

RESPONSE:
[ ] A water lease/permit is required of this applicant and an application for such will be requested by our division.
[ ] A water lease/permit is not required of this applicant.
[ ] A water lease/permit has been obtained by the applicant through lease no. ____________________________.
[ ] Other relevant Land Division rules/regulations, information, or recommendations are attached.
[ ] No objections
[ ] Other comments:

Contact Person: ___________________________________ Phone: ________________

Signed: ___________________________________ Date: ________________
September 24, 2007

TO: Melanie Chinen, Administrator
    Historic Preservation

FROM: Ken C. Kawahara, P.E., Deputy Director
      Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application
         Broda Well (Well No. 5914-01) TMK 3-6-004:007

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump Installation permit application.

We would appreciate your comments on the captioned application with regard to the programs, plans, and objectives specific to your division. Please respond by returning this cover memo form by October 24, 2007. If we do not receive comments or a request for additional review time by this date, we will assume you have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit application or request additional review time, please contact Ryan Imata of the Commission staff at 587-0255. If you require additional information regarding specific information that can be provided by the applicant, please contact the applicant directly at the contact information provided on the application form.

RESPONSE:

[ ] This is a [ ] public (county or state) project [ ] private project and [ ] will [ ] may disturb historic sites.
[ ] We concur that the work described under this permit will not disturb historic sites.
[ ] We do not concur that the work described under this permit will not disturb historic sites. We require the following for our concurrence:

Contact Person: ____________________________  Phone: _______________

Signed: ____________________________  Date: _______________
September 24, 2007

Mr. Chris Yuen, Director
Planning Department
County of Hawaii
101 Pauahi Street
Hilo, HI 96720

Dear Mr. Yuen:

Special Management Area Use Permit Requirements for
Well Construction/Pump Installation Permit Application
Broda Well (Well No. 5914-01)

Transmitted for your review and comment is a copy of the captioned Well Construction/Pump
Installation permit application.

We would appreciate your comments on the captioned application with regard to the SMA permitting
requirements specific to your division. Please respond by returning this cover memo form by October 24,
2007. If we do not receive comments or a request for additional review time by this date, we will assume you
have no comments.

Please find the attached maps to locate the proposed well. If you have any questions about this permit
application, request additional information, or request additional review time, please contact Ryan Imata of the
Commission staff at 587-0255.

Sincerely,

[Signature]
LAURA H. THIELEN
Chairperson

RESPONSE:

[ ] This well project [ ] requires [ ] does not require a SMA. If a SMA is required it [ ] has [ ] has not been approved
and [ ] is [ ] is not currently active.

[ ] Other relevant rules/regulations, information, or recommendations are attached.

[ ] No objections

[ ] Other comments:

Contact Person: ____________________________ Phone: ____________________________

Signed: ____________________________ Date: ____________________________
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<td>$0 21.03 ac</td>
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<td>Bedrooms/Baths:</td>
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**SALES**

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<td>10/27/1994</td>
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**Owner:** BRODA, EDMUND TRUST  
**Tax Payer:** BRODA, EDMUND TRUST  
**Tax Bill:** P O BOX 523, LAUPAHOEHOE, HI 96764 USA  
**Assessed Value Exemption Size Buildings:** 1  
**Exemption Size Buildings:** 1  
**Subdivision:** Waipunalei & Laupahoehoe  
**Project:**  
**Bedrooms/Baths:** 4/3.5  
**Tenure:** Fee Simple  
**Annual Tax:** $4,029.72  
**Zoning:** A-20A  
**PITT Code:** 500 - Agricultural  
**Land Use:** 0  
**Census Tract:** 221.00  
**Lot#:**

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<tr>
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<td>BUSINESS ADDR: 15-2005 29TH AVE KEAAU HI 96749</td>
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Click here to enter search criteria for http://pvl.ehawaii.gov/pvlsearch/app?_a=d&_f=n&lictp=CT&licno=28001&off=&nm=DE... 9/19/2007
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<td>(4)</td>
<td>(5)</td>
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<td>$75.00</td>
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REMARKS: LINE (1) Broda Well
LINE (2) Ninini Well
LINE (3) Isle of Lombard Well
LINE (4)
LINE (5)
LINE (6)
LINE (7)
LINE (8)
LINE (9)
LINE (10)
## State of Hawai`i
### Department of Land and Natural Resources
### Commission on Water Resource Management
### Application for a Well Construction / Pump Installation Permit

**Instructions:** Please print in ink or typewritten and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawai`i 96809. Application must be accompanied by 6 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 Regulation Branch at 587-0225. For further information and updates to this application form, visit [http://www.hawaii.gov/dlnr/cwm](http://www.hawaii.gov/dlnr/cwm).

### WELL LOCATION INFORMATION

<table>
<thead>
<tr>
<th>1. STATE WELL NO. (if already assigned)</th>
<th>2. WELL NAME</th>
<th>3. ISLAND</th>
<th>4. TMK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Box 621, Honolulu, Hawaii</td>
<td>Broda Well</td>
<td>Hawaii</td>
<td>3 - 6 - 4 - 7</td>
</tr>
</tbody>
</table>

The following be attached before this application is accepted as complete (check off if attached):  
- Portion of 7.5-minute Series USGS topographic map (scale 1:24,000) with well location labeled and include the name of the quadrat map  
- Property tax map, showing well location referenced to established property boundaries  
- Photograph of the proposed well site  
- A schematic diagram showing the well site, access road and proposed well infrastructure (if applicable)

### Well Operator’s Mailing Address

**Derrick Moreira**  
P.O. Box 523  
Laupahoehoe, HI 96764

### Well Operator’s Phone

808-962-0208

### Well Operator’s Fax

808-962-0208

### Well Operator’s E-mail

Derrick.Moreira@hawaii.gov

### Well Driller / Contractor

### Conservation District Use Permit (SMAP)

### Proposed Project

#### Proposed Well Construction

<table>
<thead>
<tr>
<th>8. Proposed Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct New Well</td>
</tr>
<tr>
<td>Modify Existing Well</td>
</tr>
<tr>
<td>Abandon/Seal Well</td>
</tr>
<tr>
<td>9. Construction Type</td>
</tr>
<tr>
<td>Drilled</td>
</tr>
<tr>
<td>Dug</td>
</tr>
<tr>
<td>Shaft</td>
</tr>
<tr>
<td>Tunnel</td>
</tr>
</tbody>
</table>

#### Proposed Pump Installation

<table>
<thead>
<tr>
<th>11. Proposed Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Install New Pump</td>
</tr>
<tr>
<td>Replace Pump</td>
</tr>
<tr>
<td>12. Proposed Pumping Rate, gpm (gallons per minute)</td>
</tr>
<tr>
<td>30</td>
</tr>
<tr>
<td>13. Proposed Amount of Withdrawal, gpd (gallons per day)</td>
</tr>
<tr>
<td>150</td>
</tr>
</tbody>
</table>

### Other Legal Requirements

- Conservation District Use Permit (CDUP)  
  - Required, CDUP #:  
  - Date approved:  
- Special Management Area Permit (SMAP)  
  - Required, SMAP #:  
  - Date approved:  
- Historic Preservation Branch 
- Parking Management Area Permit (SMAP)  
  - Required, SMAP #:  
  - Date approved:  
- Other (explain)  
  - Describe:  
- Additional remarks, explanations, etc. (attach additional sheet if more space is needed)

### Proposed Use

<table>
<thead>
<tr>
<th>16. Municipal (water systems serving greater than 25 individuals or 15 service connections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. Domestic - Number of units to be served: 1</td>
</tr>
</tbody>
</table>
| 18. Industrial (describe)  
  - Describe:  
| 19. Irrigation (describe crop and no. of acres)  
  - Describe:  
| 20. Military (describe)  
| 21. Other (describe)  
  - Describe:  

### Site Photo

![Site Photo](image)

### Application for a Well Construction / Pump Installation Permit

- Derrick's Well Drilling & Pump Svc  
  - Licensee business name: C-28001  
  - Licensee No.:  
  - Address: P.O. Box 2187 Keaau, HI 96749  
  - Phone: 808-982-7627  
  - Fax: 808-982-7698  
  - E-mail:  
- Derrick's Well Drilling & Pump Svc  
  - Licensee business name: C-28001  
  - Licensee No.:  
  - Address: P.O. Box 2187 Keaau, HI 96749  
  - Phone: 808-982-7627  
  - Fax: 808-982-7698  
  - E-mail:  

- For Official Use Only:  
  - Date: 7/15/2011  
  - Time: 10:45 AM  
  - Signature:  
  - Print:  

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**NOTE:** Signing below indicates that the signatories understand and swear to the information provided is accurate and true to the best of their knowledge. Further, the signatories understand that upon permit approval: 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 60 days after the completion date of the permitted work; 3) in the event that the application is not completed correctly, any permit may be suspended until the item is brought in to compliance, and any work done while the permit is in suspension may result in fines of up to $500/day.
**PROPOSED WELL SECTION** (Please attach schematic if different from diagram provided below)

<table>
<thead>
<tr>
<th>Ground Elevation: 390 ft., msl*</th>
</tr>
</thead>
</table>

- **Cement Grout:** 225 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 (1.5" for positive displacement, 3" for other methods)**
- **Rock or Gravel Packing:** 110 ft
  - Material: ❑ Crushed Basalt
  - ❑ Rounded Gravel
- **Estimated Water Level Elevation:** 5 ft., msl*

**Grouting method**
- [ ] Positive displacement
- [ ] Other

**Solid Casing:** (≥ 90% x (Ground Elev.-Water Level Elev))
- Total Length: 390 ft.
- Nominal Diameter: 6 in.
- Wall Thickness: Schedule 40 in.
- Bottom Elevation: 0 ft., msl*

**Open Casing:** X Perforated [ ] Screen
- Total Length: 10 ft.
- Nominal Diameter: 6 in.
- Wall Thickness: Schedule 40 in.
- Bottom Elevation: 10 ft., msl*

- *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 X Aquifer Thickness)**

  Example: Estimated = 2 ft. Water Level Elev.  ➔ Bottom Elevation of Well Limit = (2 - 0.25 X 8) = -18.5 ft.

**Solid Casing Material:**
- Carbon Steel: compliant with (check one or more):
  - ❑ ANSI/AWWA C200  ❑ API Spec. 5L  ❑ ASTM A53  ❑ ASTM A139
  - And compliant with (check one or more):
    - ❑ ASTM A242 or A606  ❑ Type E  ❑ Type S  ❑ Grade B  ❑ Other
- Stainless Steel: (check one):
  - ❑ ASTM A406 (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

**Open Casing Material:**
- Carbon Steel: compliant with (check one or more):
  - ❑ ANSI/AWWA C200  ❑ API Spec. 5L  ❑ ASTM A53  ❑ ASTM A139
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**Note:** Neither bentonite nor mud should be used in saturated zone during drilling.

**WELL ELEVATION**
- Ground Elevation: 390 ft., msl*
- Bottom Elevation: 5 ft., msl*
- Minimum of 2' Radius & 4" Thick Concrete Pad (to contain benchmark surveyed to nearest 0.01 ft.)

**HAWAII WELL CONSTRUCTION AND PUMP INSTALLATION STANDARDS** to ensure that your as-built is in compliance with applicable standards.