DIAGRAM FOR INJECTION WELL DIMENSIONS

Casing Stick Up (if any) 0.5 ft.

Diameter of Boring 12 in.

Cement Grout:
Length 150 ft.

Rock Packing:
Length NA ft.
Grain Size

Top of Casing Elevation 50.5 ft., msl

Ground Elevation 50.0 ft., msl

Solid Casing:
Length 150 ft.
Diameter 8 in.
Wall Thickness 0.32 in.
Material STEEL

Perforated Casing:
Length NA ft.
Diameter ____________ in.
Wall Thickness ____________ in.
Openings ____________ sq. in./ft

Open Hole: (if any)
Length 50 ft.
Diameter 12 in.

Total Depth of Boring 200 ft.
Bottom Elevation of Boring -150 ft., msl

INJECTION WELL DIAGRAM 2b
Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Elizabeth Shedd August 1996

FIGURE 2
SITE PLAN
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

NOT TO SCALE
<table>
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<tr>
<th>WELL NO</th>
<th>Head</th>
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<th>Aquifer Thickness</th>
<th>Active Length</th>
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<th>HARR 10^6</th>
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April 17, 2002

Mr. Michael S. Spalding, CCIM  
Ma'alaea Triangle Partnership  
75-B North Church Street  
Wailuku, HI 96793

Dear Mr. Spalding:

Well Completion Report Part 2 (Pump Installation)  
Ma'alaea Triangle Well (Well No. 4830-01)

We received your well completion report on March 28, 2002. We accept it as complete, thereby completing the permitting conditions for your well construction.

Enclosed is the water use report form for your use in meeting standard condition no. 3.

If you have any questions, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400, extension 70251.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

CI:ss

c: Roscoe Moss Hawaii, Inc.
MEMO and ROUTE SLIP

WCR 2 Check for Well No. 4830-01 (survey to regulation memo)

1. **Pump Tests Check** *(special condition of PIP? Yes/No)*
   Glenn Baue (initial if yes)
   
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<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
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   **Step-Drawdown Test:**
   followed WCPI Stds
   analysis attached
   proposed pump cap o.k.
   
   **Aquifer Pump Test:**
   followed WCPI Stds
   T & S analysis attached
   
   **Well Interference:**
   estimated Steady-State drawdown at 1-mile radius is _______ ft.
   analysis attached
   
   **Stream Surface Water Impacted:**
   
2. **Pump Installation Check**
   Mitch Ohye (initial)
   
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<th>If no, describe deficiency</th>
</tr>
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   data complete
   followed WCPI Stds
   well database updated

3. Charley/Lenore/Ryan (initial) take action based on above analysis

4. Roy (initial) check

5. Subia (initial) finalize

6. Linne (initial) signature

7. Charley/Lenore/Ryan File

---

Seems they need to do Blr 4/10/02 long-term test before we accept.
See special conditions.
We have that in file at WCR 1 stage.

O.K.
March 25, 2002

Mr. Linnel T. Nishioka  
Deputy Director  
Dept. of Land & Natural Resources  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii  96809

Re: Notice of Expiration Pump Installation Permit  
Maalaea Triangle Well (Well No. 4830-01)

Dear Mr. Nishioka:


I have also enclosed a Well Completion Report. Note Part I. Well Construction Report is completed.

Should you have any questions, or need further information, please contact me.

Cordially yours,

Michael S. Spalding, CCIM

Enclosures
State of Hawaii  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources

WELL COMPLETION REPORT  
320/98 WCR Form

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96821. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 567-0225, or 1-808-488-464 Extention 70225.

1. State Well No.: 4830-01   Well Name: Triangle Well   Island: Maui  
2. Location/Address: Maalaea Triangle, Maalaea Rd   Tax Map Key: 3-6-1:1

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<th>PART I. WELL CONSTRUCTION REPORT</th>
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<td>3. Drilling Company:</td>
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<tr>
<td>4. Name of driller who performed work:</td>
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<tr>
<td>5. Type of rig/construction:</td>
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<td>6. Date(s) Well Construction and pump tests (if any) completed:</td>
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<td>7. GROUND ELEVATION (referenced to mean sea level, msl):</td>
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<td>Well Bench Mark (description/location):</td>
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<tr>
<td>Elevations (msl):</td>
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<tr>
<td>8. DRILLER'S LOG: Please attach geologic log (if available or required by permit)</td>
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<td>Depths (ft.): Rock Description, Water Level, Dates, etc.</td>
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<td>9. Total depth of well below ground:</td>
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<td>16. PUMPING TESTS: Reference Point (R.P.) used:</td>
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<td>(2) Long-term Aquifer Test Date</td>
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<td>17. Aquifer Pump Test Procedures data &amp; graphs (1/9/96 LTAT Form) attached? _ Yes _ No</td>
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<td>18. As-built drawings attached attached? _ Yes _ No</td>
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<td>19. Other remarks/comments: (On back of this form)</td>
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Well Drilling Contractor (print) C-57 Lic. No.  
Signature Date

Surveyor (print) Lic. No.  
Signature Date

Applicant (print)  
Signature Date


PART II. (PERMANENT) PUMP INSTALLATION REPORT

Pump Installation Company: Roscoe Moss Hawaii, Inc.

Name of person performing work: John Hele

Date Pump Installation Completed: June 12, 1997

PUMP INSTALLATION:

- Pump Type, Make, Serial No.: Submersible, Layne, 866-18072
- Capacity: 75 gpm
- Motor type, H.P., Voltage, rpm: Sub, 10, 460, 3450
- Depth of Pump Intake Setting: 55 ft below Grade, which elevation is 50.47 ft
- Depth to bottom of pipeline: 55 ft below Grade, which elevation is 50.47 ft
- Pumping Head is 300 ft. Type of flow meter: __________ which measures in __________

Are all drawings attached? X Yes _ No

Other remarks/comments: (See below)

Pump Installation Contractor (print) Roscoe Moss Hawaii, Inc., G-57 Lic. No. C-16437

Signature: William C. Moore, President

Date: 7/3/97

Applicant (print) __________

Signature: __________

Date: __________

DRILLER’S LOG (cont’d)

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6-A870-01 MAALAEA TRIANGLE
**WELL COMPLETION REPORT**

(State of Hawaii  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources)

(Check Appropriate Box)  
☒ Well Construction  
☐ (Permanent) Pump Installation

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 521, Honolulu, Hawaii 96805. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 808-586-0225, or 1-800-468-4844 Extension 70226.

1. State Well No.: 4830-01  
   Well Name: TRIANGLE WELL  
   Island: MAUI

2. Location/Address: MAALAEA TRAILING, MAALAEA RD.  
   Tax Map Key: 3-5-1:1

### PART I.  
**WELL CONSTRUCTION REPORT**

3. Drilling Company: ROSCOE MOSS HAWAII, INC.

4. Name of driller who performed work: TIMOTHY SMITH

5. Type of rig/construction: 28L CABLE TOOL

6. Date(s) Well Construction and pump tests (if any) completed: CONSTRUCTION 2/24/97 PUMPING 2/28/97

7. GROUND ELEVATION (referenced to mean sea level, masl): 51.17 ft.

   Well Bench Mark (description/location): BOXCUT on concrete  
   Elevation (masl): 50.47 ft.

8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)

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<th>Rock Description, Water Level, Dates, etc.</th>
<th>Depth (ft.)</th>
<th>Rock Description, Water Level, Dates, etc.</th>
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</tbody>
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9. Total depth of well below ground: 84 ft.

10. Hole size:

    - 12 inch dia. from 0 ft. to 74 ft. below ground
    - 8 inch dia. from 74 ft. to 84 ft. below ground
    - 8 inch dia. from 84 ft. to 144 ft. below ground

11. Casing Installed:

    - 8 in. I.D. x .312 in. well solid section to 54 ft. below ground
    - 8 in. I.D. x .312 in. well perforated section to 74 ft. below ground

   Casing Material/Slot Size: STEEL LOUTERED

12. Annulus:

    - Grouted from 0 ft. below ground to 44 ft. below ground
    - Gravel packed from 44 ft. below ground to 74 ft. below ground

13. Initial water level: 47.4 ft. below ground.


15. Initial temperature: 74 °F.

16. PUMPING TESTS: Reference Point (R.P.) used:

    - 8 INCH CASING, which elevation is 52.04 ft.

   (1) Step-Drawdown Test Date: NA
   (2) Long-term Aquifer Test Date: 2/25/97

   Start water level: 48.75 ft. below R.P.
   End water level: 48.40 ft. below R.P.

17. As-built Pump Test Procedures data & graphs (1/96 LTAT Form) attached?  
    - Yes _ No

18. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) ROSCOE MOSS HAWAII, INC.  
C-57 Lic. No. C-16437

Signature  
Date 3/14/97

Surveyor (print) Sherman Dudley DePonte  
Lic. No. HI 6960

Signature  
Date 4/17/97

Applicant (print)  
Signature  
Date 4/17/97
January 11, 2002

Mr. Michael Spalding
Maalaea Triangle Partnership
754-B North Church Street
Wailuku, HI 96793

Dear Mr. Spalding:

Notice of Expiration Pump Installation Permit
Maalaea Triangle Well (Well No. 4830-01)

In reviewing our records, we note that no notice has ever been received about work on this permit, which expired in June 1999. Following up with the drilling company, they believed that the well is not being used nor a pump installed.

If the well is not to be used, it should be sealed, and an application is provided for your use. If you wish to install a pump, you need to submit a new application, and the same form may be used. If you have any further information about the status of this well, please forward it to our office at your earliest convenience.

Please note, any work done without a valid permit is a violation of the state water code and subject to fines of up to $1000/day.

If you have any questions, please contact Charley Ice of the Water Commission staff at 587-0251 or toll-free at 984-4644, extension 70251.

Sincerely,

[Signature]

LINNEL T. NISHIOKA
Deputy Director

CI:ss

Enclosure
<table>
<thead>
<tr>
<th>FROM: Charley</th>
<th>DATE: 07 Jan 02</th>
<th>TO:</th>
<th>INIT.</th>
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<td>HARDY, R.</td>
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<td>DANBARRA</td>
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<td>SUBIA, S.</td>
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<td>___ Please See Me</td>
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<td>YODA, K.</td>
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edits OK? if so, on to subia.
My notes say the injection well would be pump-tested first for quality. It was proposed to be an irrigation well unless the water quality was unsatisfactory. The water quality came back as around 200 mg/l Chlorides.
**LETTER OF TRANSMITTAL**

**DATE:** 7/10/97  
**JOB NO.:** 51-96D

**ATTENTION:** MICHAEL D. WILSON, CHAIRPERSON

**RE:** MAALAEA TRIANGLE WELL  
(WELL NO. 4830-01)

---

**TO:** STATE OF HAWAII  
DEPT OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
PO BOX 621  
HONOLULU, HI 96809

---

WE ARE SENDING YOU  
☒ Attached  
☐ Under separate cover via __________________________  

☐ Shop drawings  
☐ Prints  
☐ Plans  
☐ Samples  
☐ Specifications

☐ Copy of letter  
☐ Change order  
☐ __________________________

---

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<td>7-10-97</td>
<td>PUMP INSTALLATION PERMIT</td>
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</tr>
</tbody>
</table>

---

THESE ARE TRANSMITTED as checked below:

☐ For approval  
☐ Approved as submitted  
☒ Resubmit ______ copies for approval

☐ For your use  
☐ Approved as noted  
☐ Submit ______ copies for distribution

☒ As requested  
☐ Returned for corrections  
☐ Return ______ corrected prints

☐ For review and comment  

☐ FOR BIDS DUE __________________________ 19  
☐ PRINTS RETURNED AFTER LOAN TO US

---

REMARKS

---

COPY TO 51-96D/C FILE

---

SIGNED:  
GLEN DAVIS  
ENGINEERED PUMP SALES

---

If enclosures are not as noted, kindly notify us at once.
PUMP INSTALLATION PERMIT

Maalaea Triangle Well, Well No. 4830-01

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 pump installation for Maalaea Triangle Well (Well No. 4830-01) at Maalaea, Waikapu, Maui, TMK 3-6-1, 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 to the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96801, 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. The pump installation permit shall be for installation of a 75 gpm capacity, or less, pump in the well.

3. The permittee shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on an annual basis, on forms provided by the Chairperson (attached).

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

5. The permittee shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

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

7. The pump installation permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97).

8. The permit may be revoked 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 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 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 notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned 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.

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

Date of Approval: June 27, 1997
Expiration Date: June 27, 1999

Michael D. Wilson, 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. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day.

Permittee's Signature: Michael S. Saeki, General Partner
Date: 7/1-97
Printed Name: Maalaea Triangle Partnership
Firm or Title: Maalaea Triangle Partnership

Installer's Signature: Tracy Runge
Date: 7/10/97
Printed Name: Tracy Runge
Firm or Title: Roscoe Moss Hawaii, Inc.

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

Attachments
USGS
Department of Health/ Safe Drinking Water, Cleanwater & Wastewater Branches
Maui Department of Water Supply
Roscoe Moss Hawaii, Inc.
Mr. Michael Spalding  
Maalaea Triangle Partnership  
754-B North Church Street  
Wailuku, Hawaii 96793  

Dear Mr. Spalding:  

Pump Installation Permit  
Maalaea Triangle Well (Well No. 4830-01)  

Enclosed are two (2) originals of your approved Pump Installation Permit for the captioned well(s) which authorizes 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 10:  

Special Conditions  

1. None  

The well owner is responsible for all conditions of the permit. This includes ensuring that the pump installation contractor, or other party who installs the pump, submits a completed Part II of the Well Completion Report form (enclosed) within sixty (60) days after the pump installation 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.  

To validate your pump installation permit, please sign and have the contractor sign both permit originals and return one for our files.  

A copy of the Well Completion Report (Part II) and a copy of your water use report form are enclosed for your use. Except for the monthly water use report form, please provide copies of all the information in this packet to your pump installation contractor.  

Finally, this letter is notice that we have accepted your Well Completion Report - Part I as complete. We would appreciate transmittal of any pump test data for adjacent injection wells.  

If you have any questions, please call the Commission staff at 587-0251 or toll-free at 984-2400, extension 70251.  

Aloha,  

MICHAEL D. WILSON  
Chairperson  

Enclosures  

C: Roscoe Moss Hawaii, Inc.
PUMP INSTALLATION PERMIT

Maalaea Triangle Well, Well No. 4830-01

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 pump installation for Maalaea Triangle Well (Well No. 4830-01) at Maalaea, Waikapu, Maui, TMK 3-6-1:1, 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 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. The pump installation permit shall be for installation of a 75 gpm capacity, or less, pump in the well.

3. The permittee shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on an annual basis, on forms provided by the Chairperson (attached).

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

5. The permittee shall complete and submit as-built drawings and Part II - (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Chairperson within sixty (60) days after completion of work.

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

7. The pump installation permit application is incorporated into this permit by reference and is subject to the Hawaii Well Construction & Pump Installation Standards (1/23/97).

8. The permit may be revoked 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 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 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 notice of the proposed action and an opportunity to be heard.

9. If the well is not to be used it must be properly capped. If the well is to be abandoned 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.

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

Date of Approval: June 27, 1997
Expiration Date: June 27, 1999

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. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day.

Permittee's Signature: ___________________________ Date: _______________

Printed Name: ___________________________ Firm or Title: ___________________________

Installer's Signature: ___________________________ 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.

Attachments

c: USGS
Department of Health/ Safe Drinking Water, Cleanwater & Wastewater Branches
Maui Department of Water Supply
Roscoe Moss Hawaii, Inc.
What about a step-deadline test?
Proposal Q < 70 gpm? Can't get much from the instant rate test.
The questions are always: 1) did the test follow the procedure? and 2) do the data support the requested pump capacity (75 gpm)?
## WELL COMPLETION REPORT

### PART I. WELL CONSTRUCTION REPORT

1. **State Well No.:** 4830-01  
2. **Location/Address:** MAALAEA TRIANGLE, MAALAEA RD.  
3. **Name of driller who performed work:** TIMOTHY SMITH  
4. **Type of rig/construction:** 28L CABLE TOOL  
5. **Date(s) Well Construction and pump tests (if any) completed:**  
   - CONSTRUCTION: 2/24/97  
   - PUMPING: 2/28/97  
6. **GROUND ELEVATION** (referenced to mean sea level, msl): 51.77 ft.  
7. **Well Bench Mark (description/location):** NORTH SIDE OF SLAB  
8. **Ground elevation (msl):** 50.47 ft.  
9. **Total depth of well below ground:** 84 ft.  
10. **Hole size:**  
    - 12 inch dia. from 0 ft. to 74 ft. below ground  
    - 8 inch dia. from 74 ft. to 84 ft. below ground  
11. **Casing installed:**  
    - 8 in. I.D. x .312 in. wall solid section to 54 ft. below ground  
    - 8 in. I.D. x .312 in. wall perforated section to 74 ft. below ground  
12. **Annulus:**  
    - Grouted from 0 ft. below ground to 44 ft. below ground  
    - Gravel packed from 44 ft. below ground to 74 ft. below ground  
13. **Initial water level:** 47.4 ft. below ground.  
14. **Initial chloride:** 215 ppm  
15. **Initial temperature:** 74°F  
16. **PUMPING TESTS:**  
   - Reference Point (R.P.) used: 8 INCH CASING, which elevation is 52.04 ft.  
   - Start water level 48.75 ft. below R.P.  
   - End water level 48.40 ft. below R.P.  
17. **Aquifer Pump Test Procedures data & graphs (1/9/96 LTAT Form) attached?** Yes _ No  
18. **As-built drawings attached?** Yes _ No  
19. **Other remarks/comments:** (On back of this form)  

---

**Well Drilling Contractor (print):** ROSCOE MOSS HAWAII, INC.  
**C-S7 Lic. No.:** C-16437  
**Signature:** __________________________  
**Date:** 3/14/97  

**Surveyor (print):** __________________________  
**Lic. No.:** __________________________  
**Signature:** __________________________  
**Date:** __________________________  

**Applicant (print):** __________________________  
**Signature:** __________________________  
**Date:** __________________________
# PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: 

21. Name of person performing work: 

22. Date Pump Installation Completed: 

23. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.: __________________________ Capacity: _______ gpm
   - Motor type, H.P., Voltage, rpm: __________________________
   - Depth of Pump Intake Setting _________ ft. below _________, which elevation is _________ ft.
   - Depth to bottom of airline _________ ft. below _________, which elevation is _________ ft.
   - Pumping Head is _________ ft. Type of flow meter: _________ which measures in _________

24. As-built drawings attached? __ Yes __ No

25. Other remarks/comments: (See below) 

---

Pump Installation Contractor (print) __________________________ C-57 Lic. No. _________

Signature __________________________ Date __________________________

Applicant (print) __________________________

Signature __________________________ Date __________________________

---

8. (cont’d) DRILLER’S LOG (cont’d):

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<th>Depth (ft.)</th>
<th>Rock Description, Remarks,</th>
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19 & 25. Remarks: SAND FORMATION AND CINDERS REQUIRED 20 FT OF GRAVEL PACKED FUL FLO LOUVERED CASING INSTALLED RATHER THAN A BASKET. 72 FT OF CONDUCTOR CASING WAS REQUIRED TO HOLD HOLE OPEN. 8” CASING WAS SET AND WELL GRAVEL PACKED AND CEMENTED AS CONDUCTOR CASING WAS RETRIEVED. WELL WILL BE USED FOR SUPPLY WATER DURING O.I.C. TESTING OF EFFLUENT DISPOSAL WELLS. AN ADDITIONAL 8 HR TEST WILL BE CONDUCTED ON THIS WELL AND COMPLETED EFFLUENT WELLS MONITORED IDLE TO INSURE NO INFLUENCE BETWEEN WELL ON SITE. UPON REVIEW OF THIS REPORT, A PERMANENT PUMP INSTALLATION PERMIT SHOULD BE SENT TO OWNER & ROSECOS MOSS HAWAII, INC. IF THIS WELL MEETS YOUR APPROVAL.

THANKS,

TRACY RUNNELL, MGR DRILLING OPERATIONS
WELL COMPLETION REPORT

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
3/20/66 WCR Form

WELL CONSTRUCTION REPORT

State Well No.: 4630-01
Well Name: TRIANGLE WELL
Island: MAUI

1. Location/Address: MAALAEA TRIANGLE, MAALAEA RD.
2. Tax Map Key: 3-6-11

PART I

3. Drilling Company: ROSCOE MOSS HAWAII, INC.
4. Name of driller who performed work: TIMOTHY SMITH
5. Type of rig/construction: 28L CABLE TOOL

6. Dates of Well Construction and pump tests (if any): completed CONSTRUCTION 2/24/97 PUMPING 2/26

7. GROUND ELEVATION (referenced to mean sea level, msl): 51.77 ft

Well Bench Mark (description/location): "BOX CUT" on concrete Elevation (msl): 50.47 ft

8. CORE LOG: Please attach geologic log (if available or if required by permit)

Depth_ft_ Rock Description Water Level Dates etc
35 ft. RED CLAY
46 to 53 LOOSE ROCK (R, R, R)
53 to 58 RED SAND BLUE ROCK

If more space is needed continue on back

9. Total depth of well below ground: 84 ft

10. Hole size: 

- 6 inch dia from 0 ft to 74 ft below ground
- 6 inch dia from 74 ft to 84 ft below ground

11. Casing used: 

- 8 in. ID x 312 ft wall solid section to 74 ft below ground
- 8 in. ID x 312 ft wall perforated section to 84 ft below ground

Casing Material/Slot Size: 9 INCH CAST IRON

12. A gravel: Gravel packed from 0 ft below ground to 44 ft below ground

13. Initial water elevation: 47.4 ft below ground


15. Initial temperature: 74 °F

16. Dates and time of measurement: 2/25/97 1:30 PM

17. Step-Drawdown Test Date: NA

18. Long-term Aquifer Test Date: 2/25/97

19. Wells Drilled: 1

20. Water Level: 

Start water level: 48.75 ft below R.P.
End water level: 48.47 ft below R.P.

21. Well Completion Reports and Other records, etc... (On back of this form)

Well Drilling Contractor (print): ROSCOE MOSS HAWAII, INC. C-67 Lic. No. 0-16431

Signature: ____________________________ Date: 3/14/97

Surveyor (print): Sherman Blegen, P.E.
Lic. No. HT 6393

Signature: ____________________________ Date: 4/1/97

Applicant (print): Michael Spellman, MFG.

Signature: ____________________________ Date: 4/1/97
WELL COMPLETION REPORT

1. State Well No.: 4830-01 Well Name: TRIANGLE WELL Island: MAUI
2. Location/Address: MAALAEA TRIANGLE, MAALAEA RD. Tax Map Key: 3-5-1-1

PART I.

WELL CONSTRUCTION REPORT

3. Drilling Company: ROSCOE MOSS HAWAII, INC.
4. Name of driller who performed work: TIMOTHY SMITH
5. Type of rig/construction: 28L CABLE TOOL
6. Date(s) Well Construction and pump tests (if any) completed: CONSTRUCTION 2/24/97 PUMPING 2/28/97
7. GROUND ELEVATION (referenced to mean sea level, msl): 51.77 ft.
   Well Bench Mark (description/location): "BOXCUT" on concrete Elevation(msl): 50.47 ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)
   Depths (ft) Rock Description, Water Level, Dates, etc. Depths (ft) Rock Description, Water Level, Dates, etc.
   0 to 36 RED DIRT 46 to 53 LOOSE ROCK (RUBBLE)
   36 to 46 MED HARD BLUE ROCK SOME POROUS 53 to 58 MED HARD BLUE ROCK
   (If more space is needed, continue on back.)
9. Total depth of well below ground: 84 ft.
10. Hole size: 12 inch dia. from 0 ft. to 74 ft. below ground
    8 inch dia. from 74 ft. to 84 ft. below ground
    8 inch dia. from 84 ft. to 114 ft. below ground
11. Casing installed: 8 in. I.D. x 312 in. wall solid section to 54 ft. below ground
    8 in. I.D. x 312 in. wall perforated section to 74 ft. below ground

Casing Material/Slot Size: STEEL LOUERED

12. Annulus: Grouted from 0 ft. below ground to 44 ft. below ground
    Gravel packed from 44 ft. below ground to 74 ft. below ground
13. Initial water level: 47.4 ft. below ground. Date and time of measurement: 2/21/97 7AM
14. Initial chloride: 215 ppm Date and time of sampling: 2/25/97 1:30 PM
15. Initial temperature: 74°F Date and time of measurement: 2/25/97 1:30 PM
16. PUMPING TESTS: Reference Point (R.P.) used: 8 INCH CASING which elevation is 52.04 ft.
    (1) Step-Drawdown Test Date NA (2) Long-term Aquifer Test Date 2/25/97
    Start water level 48.75 ft. below R.P. Start water level 48.40 ft. below R.P.
    End water level 48.75 ft. below R.P. End water level 48.40 ft. below R.P.
17. Aquifer Pump Test Procedures data & graphs (1/9/96 LTAT Form) attached?XX Yes ___ No
18. As-built drawings attached? X Yes ___ No
19. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print) ROSCOE MOSS HAWAII; INC. C-57 Lic. No. C-16437
Signature ________________________________ Date 3/14/97

Surveyor (print) Sherman Dudley DePonte
Signature ________________________________ Lic. No. HI 6960 Date 4/8/97
Applicant (print) ____________________________ Date
**WELL COMPLETION REPORT**

(State of Hawaii)

COMMISSION ON WATER RESOURCE MANAGEMENT

Department of Land and Natural Resources

*(Check Appropriate Box)*

- [ ] Well Construction
- [ ] (Permanent) Pump Installation

**Instructions:** Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225, or 1-800-468-4644 Extension 70225.

1. State Well No.: 4830-01
2. Well Name: TRIANGLE WELL
3. Location/Address: MAALAEA TRIANGLE, MAALAEA RD.
4. Island: MAUI
5. Tax Map Key: 3-6-1:1

**PART I. WELL CONSTRUCTION REPORT**

3. Drilling Company: ROSCOE MOSS HAWAII, INC.
4. Name of driller who performed work: TIMOTHY SMITH
5. Type of rig/construction: 28L CABLE TOOL
6. Date(s) Well Construction and pump tests (if any) completed: CONSTRUCTION 2/24/97 PUMPING 2/28/97
7. GROUND ELEVATION (referenced to mean sea level, msl): 51.77 ft.
   - Well Bench Mark (description/location):
   - Elevation(msl): __ ft.
8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description, Water Level, Dates, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 36</td>
<td>RED DIRT</td>
</tr>
<tr>
<td>36 to 46</td>
<td>MED HARD BLUE ROCK SOME POROUS</td>
</tr>
<tr>
<td>46 to 53</td>
<td>LOOSE ROCK (RUBBLE)</td>
</tr>
<tr>
<td>53 to 58</td>
<td>MED HARD BLUE ROCK</td>
</tr>
</tbody>
</table>

(If more space is needed, continue on back.)

9. Total depth of well below ground: 84 ft.
10. Hole size: 12 inch dia. from 0 ft. to 74 ft. below ground
     8 inch dia. from 74 ft. to 84 ft. below ground
     __ inch dia. from __ ft. to __ ft. below ground
11. Casing installed: 8 in. I.D. x .312 in. wall solid section to 54 ft. below ground
     __ in. I.D. x .312 in. wall perforated section to __ ft. below ground
12. Casing Material/Slot Size: STEEL LOUVERED
13. Annulus: Grouted from 0 ft. below ground to 44 ft. below ground
     Gravel packed from 44 ft. below ground to 74 ft. below ground
14. Initial water level: 47.4 ft. below ground.
15. Initial chloride: 215 ppm
16. Initial temperature: 74 °F
17. PUMPING TESTS: Reference Point (R.P.) used: 8 INCH CASING, which elevation is 52.04 ft.
    (1) Step-Drawdown Test Date: NA
    (2) Long-term Aquifer Test Date: 2/25/97
       Start water level __ ft. below R.P.
       End water level __ ft. below R.P.
18. Aquifer Pump Test Procedures data & graphs (1/25/96 LTAT Form) attached?X Yes _ No
19. As-built drawings attached? X Yes _ No
20. Other remarks/comments: (On back of this form)

**Well Drilling Contractor (print)**

ROSCOE MOSS HAWAII, INC.
C-57 Lic. No. C-16437

**Surveyor (print)**

License No.

**Applicant (print)**

Date

**Signature**

Date
BENCHMARK: "BOXCUT" ON NORTH SIDE OF CONCRETE SLAB EL=50.47 (MSL)
WELL HEAD EL=53.54 (MSL) (TOP OF PIPE)

INSET
IRRIGATION WELL (NOT TO SCALE)

WELL NO. 4890-01
MAALAEA TRIANGLE

ELEVATION

NOTE: ELEVATIONS SHOWN HEREON ARE BASED ON BENCHMARK ON FIRE HYDRANT LOCATED ON MAALAEA ROAD ACROSS FROM UNO STORE. EL=12.35 (MSL)

SKETCH SHOWING INJECTION WELL AND IRRIGATION WELL LOCATIONS FOR LOT 10 OF THE MAALAEA TRIANGLE SUBDIVISION

JOB NO.: 96353WLL
SCALE: 1" = 50'
T.M.K.:(2)3-6-01 & 19
DATE:4/1/97 SHEET 1 OF 1
## Pumping Test Record

**MAALAEA TRIANGLE**

<table>
<thead>
<tr>
<th>Name</th>
<th>(No.)</th>
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<tr>
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<td>27-96R</td>
</tr>
<tr>
<td>Project or Job No.</td>
<td>19 97</td>
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</table>

### Description of Well

- **Elevation:**
  - ground surface 51.77 ft.
  - top of casing 52.04 ft.
  - rotary table ft., referenced to benchmark.
- **Total depth:**
  - 84 ft.
  - ft. elevation, msl
- **In. solid casing to:**
  - 53.95 ft. depth, perforated to ft. depth
- **Static water level on:**
  - 2/25 1997: 48.75 ft. below ground surface top of casing; or 52.04 ft. elevation msl measured method

### Description of Pump and Pump Setting

- **Type pump with:**
  - stage bowl assembly
- **Shaft speed:**
  - rpm at gpm flow
- **Depth of pump intake:**
  - 63.95 ft. below 52.04 ; or ______ ft. elev. msl
- **Depth of airline bottom:**
  - ______ ft. below ______; or ______ ft. ele msl
- **Center of gage:**
  - ft. elev., msl. flow measured with

### Test Conducted by

- I.J. SMITH
- ROSCOE MOSS
- HAWAII, INC.

### Test Conducted on 2/25

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<th>Time</th>
<th>Sample No.</th>
<th>Pumping rate (gpm)</th>
<th>Airline Sounder (feet)</th>
<th>Drawdown (feet)</th>
<th>Chlorides (ppm)</th>
<th>Temp. (°F)</th>
<th>Cond. (mmbos 25°C)</th>
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**Recovery**
# AECOS REPORT OF ANALYTICAL RESULTS

**SAMPLE TYPE:** water  
**DATE SAMPLED:** 02/25/97  
**AECOS LOG No.:** 10359  
**DATE RECEIVED:** 02/27/97

<table>
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<tr>
<th>ANALYTE (UNITS)</th>
<th>Chloride (mg/L)</th>
<th>Analyst Date/Analyst ID</th>
<th>EPA Method Number</th>
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<td></td>
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<td>02/28/97 me</td>
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**SAMPLE ID: 8**

- #1: 215
- #2: 195
- #3: 200
- #4: 210

Detection Limit: 1

---

**J. Mello, Laboratory Director**

**WELL NO. 4850-01**

**MARKED TUMBLE**
Remarks, Explanations (cont'd):

WEU NO. 4870-01
MARTIN-TRIANGLE

AS BLD

9. PROPOSED WELL SECTION

---

Ground Elevation: 51.77 ft., mas

---

Elevation at top of casing: 53.54 ft., mas

---

Cement Grout: 44 ft.

---

Rock Packing: 30 ft.

---

Hole Diameter: 12 in.

---

Total Depth: 84 ft.

---

Solid Casing:

- Material: SCH 40 STEEL
- Length: 54 ft.
- Diameter: 8" I.D.
- Wall thickness: 0.312

---

Casing:

- Material: STEEL
- Length: 20 ft.
- Diameter: 8" I.D.
- Wall thickness: 0.312
- Openings: 20 sq. in./LF.

---

Open Hole:

- Length: 10 ft.
- Diameter: 8".

---

*Approximate elevation at time of filing application. Ground elevation above mean sea level (mas) by a surveyor licensed by the State must be submitted at the start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.
TO:       Mr. Bill Devick  
          Division of Aquatic Resources

FROM:    Rae M. Loui, Deputy Director  
          Commission on Water Resource Management

SUBJECT: Maalaea Injection Wells and Aquarium

At its December 18, 1996 meeting, the Commission approved a well construction permit for Maalaea Triangle Well, a project intended to irrigate landscaping for urban development in the Maalaea Triangle. At that meeting, the Commission also expressed its interest in communicating to you that the project also includes two injection wells. Their interest stems from the awareness that a new aquarium will be built in this vicinity.

Roscoe Moss will be drilling the injection wells and testing them as they reach the aquifer at sea level. Once the testing is done, the intent is to continue drilling to salt water, expected about -150 feet below sea level. This may not pose any concerns for the aquarium. You may wish to reach them for further information.

If you have any questions, please call Charley Ice at 587-0251.

Cl:ss
Mr. Michael Spalding  
Maalaea Triangle Partnership  
75-B North Church Street  
Wailuku, Hawaii 96793  

Dear Mr. Spalding:  

Well Construction Permit  
Triangle Well (Well No. 4830-01)  

Enclosed are two (2) copies of your approved Well Construction Permit for the captioned well(s). As part of the Commission's approval, the following special conditions were added and are part of your permit under Standard Permit Condition 10:  

Special Conditions  

1. No permanent monitor tube is required.  
2. The long-term continuous test shall be at least 8 hours.  
3. No step-drawdown test is required.  
4. The well should not be used for drinking water unless it is properly tested and treated.  
5. The Chairperson shall approve and issue a pump installation permit upon acceptance of aquifer pumping test results required in Condition 6e.  
6. Cement grout of the annular space shall seal at least 70% of the distance between the ground surface and the top of the aquifer.  

Additionally, the Commission authorized the Chairperson to approve and issue a pump installation permit supported by information provided from aquifer pumping test results, required in Well Construction Standard Condition 6e, subject to the Standard Pump Installation Conditions which will be issued to you when we receive your aquifer pump test results and completed Well Construction Report (Part I).  

The well owner is responsible for all conditions of the permit. This includes ensuring that the well construction contractor, or other party who constructs the well, submits a completed Part I of the Well Completion Report form (enclosed) and all required testing data within thirty (30) days after the well construction and pump test 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.  

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

Also, copies of the aquifer pump test procedure and the well completion report form are enclosed for your use. Please provide copies of all the information in this packet to your well drilling contractor.  

If you have any questions, please call Rae M. Loui, Deputy Director, at 587-0214 or toll-free at 984-2400, extension 70214.  

Aloha,  

[Signature]  
MICHAEL D. WILSON  
Chairperson  

Enclosures
WELL CONSTRUCTION PERMIT

Triangle Well, Well No. 4830-01

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 Triangle Well (Well No. 4830-01) at Maalaea, Waikapu, Maui, TMK 3-6-1:1, subject to the following conditions:

STANDARD PERMIT CONDITIONS

1. 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 permit by this work commences.

2. The well construction permit shall be for construction and testing of the well only. A minimum one-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Commission, to accurately record water levels. The permittee shall coordinate with the Commission and conduct a pumping test in accordance with the attached Aquifer Pump Testing Procedure (attached). The permittee shall submit to the Commission 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 Commission.

3. 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.

4. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and contact the Department's Historic Preservation Division (587-0045) immediately.

5. 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.

6. The following shall be submitted to the Commission within thirty (30) 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 water quality data.

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

8. The well construction permit application and staff submittal approved by the Commission at its December 18, 1996 meeting are incorporated into the permit by reference.

9. The permit may be revoked 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 Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

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

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

Date of Approval: December 18, 1996
Expiration Date: December 18, 1998

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

Applicant's Signature: ___________________________ Date: __________
Printed Name: ___________________________ Firm or Title: ___________________________

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

Attachment

c: USGS
Department of Health/ Safe Drinking Water & Wastewater Branches
Maui Department of Water Supply

MICHAEL D. WILSON, Chairperson
Commission on Water Resource Management
STAFF SUBMITTAL
for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT
December 18, 1996
Honolulu, Oahu

Maalaea Triangle Partnership
APPLICATION FOR WELL PERMIT
Maalaea Triangle Well (Well No. 4830-01)
Well Construction: 12-inch diameter, 92-foot deep
Pump Installation: 75-gpm Pump
for irrigation use
Maalaea, Waikapū, Maui, TMK 3-6-1:1

APPLICANT:
Maalaea Triangle Partnership
75-B North Church Street
Wailuku, Hawai‘i 96793

LANDOWNER:
Same

DESCRIPTION: Location: (See Exhibit 1) Dimensions: (See Exhibit 2)

WATER AVAILABILITY:
Waikapū Aquifer System of Wailuku Sector. Estimated Sustainable Yield: 2 mgd.
Existing Use: Not available in WUDP; capacity appears <1 mgd.
Proposed Use: 0.02 mgd for irrigation of 19-acre urban development.
Anticipated pump capacity: 75 gpm.

BACKGROUND:
The application for this well was accepted as complete on September 30, 1996.

ISSUES/ANALYSIS:
Agency Review: The application was published in the Commission’s Water Resource Bulletin in 1996; review letters were sent to the Department of Health’s Safe Drinking Water and Wastewater Branches. The Safe Drinking Water Branch reports no comments.
Staff review: The proposed well would reach 40 feet below mean sea level, tapping brackish basal ground water below a thin layer of alluvium. Proposed use is approximately 20,000 gallons per day, although initial (first month) landscaping requirements are estimated at 64,500 gpd. There is one 35-feet deep condominium landscaping well at the shoreline about one-quarter mile away. A state observation well is nearly half a mile in the opposite direction, mauka; the distance from pumpage of the new well does not make this a good candidate for data collection. The project will be preceded by drilling an injection well in the immediate vicinity to a depth of about 150 feet below sea level. The injection well is regulated by the Department of Health and is for treated wastewater. As the injection well reaches the water table, it will be pump-tested to preview the viability of ground water for irrigation; if that test does not prove satisfactory, the irrigation well will be cancelled in favor of using County water, but the injection well will continue. No adverse impacts are expected.

RECOMMENDATION:

A. That the Commission approve the issuance of a well construction permit for Maalaea Triangle Well, subject to the standard permit conditions in Exhibit 3 and the following special conditions:

1. No step-drawdown test is required.
2. The long-term test shall be at least 24 hours.

B. That the Commission authorize the Chairperson to approve and issue a pump installation permit for a pump capacity supported by information provided in the Well Completion Report (Exhibit 5) using acceptable aquifer pumping test results required in Condition 6e (Exhibit 3), subject to the standard permit conditions in Exhibit 4.

Respectfully submitted,

[Signature]

RAE M. LOUI
Deputy Director

Exhibits: 1. (Location Map)
2. (Well Cross-section)
3. (Standard Well Construction Conditions)
4. (Standard Pump Installation Conditions)
5. (Well Completion Report Form)
6. (Pump Test Procedures)
7. (Water Use Report Form)
Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Beth Shedd August 1996

FIGURE 2
SITE PLAN
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
AQUIFER (PUMP) TEST PROCEDURES

The pump test procedure for new wells shall consist of a step-drawdown test followed by a long-term continuous aquifer test. Testing the well and aquifer in the prescribed manner should result in the hydrologic information needed to determine: 1) the well's performance with regard to yield and water quality (chloride concentration), and 2) the nearby hydraulic properties of the aquifer.

General Recording Requirements

The records required for analysis and the tolerance in measurement acceptable for the step-drawdown and long-term continuous aquifer test are as follows:

1. Discharge from the well shall not fluctuate beyond ± 10 percent.
2. Depth to water measurements in the pumped well shall be accurate to 0.01 feet.
3. Time shall be accurate within ± 1 percent.
4. Water discharged from the well during the step-drawdown and long-term test shall be carried away from the well to a distance sufficient to preclude circulation of the discharge water downward to the ground-water table.
5. Recording of data should be on a form similar to Table 1. All information shown in Table 1 shall be provided. In addition, data shall be plotted on Graph 1 and provided.

Step-Drawdown Test

The purpose of the step-drawdown test is to establish the efficiency of the well and to provide preliminary information on the yield of the well, both from a quantity and quality standpoint.

1. Measurement of water level in the pumped well shall be made every 12 hours for a period of no less than two days prior to the initiation of the step-drawdown test in order to obtain the pretest trend in water levels.
2. The step-drawdown test will consist of continuously pumping the well for four hours at four different rates.
   a. The change from one pumping rate to the next must be sufficient to induce an observable change in water level in the well from the previous pumpage rate.
   b. If desired, the four different rates should represent the full range of pump capacity (if the yield can sustain this), but this is not necessary.
PART II.  (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: ____________________________

21. Name of person performing work: ________________________

22. Date Pump Installation Completed: ________________________

23. PUMP INSTALLATION:
   Pump Type, Make, Serial No.: ____________________________
   Capacity: _______ gpm
   Motor type, H.P., Voltage, rpm: __________________________
   Depth of Pump Intake Setting _______ ft. below _______, which elevation is _______ ft.
   Depth to bottom of airline _______ ft. below _______, which elevation is _______ ft.
   Pumping Head is _______ ft. Type of flow meter: _______ which measures in _______

24. As-built drawings attached? __ Yes __ No

25. Other remarks/comments: (See below)

Pump Installation Contractor (print) ______________________ C-57 Lic. No. ________
Signature ____________________________________________ Date __________________

Applicant (print) ______________________________________
Signature ____________________________________________ Date __________________

8.(cont'd) DRILLER'S LOG (cont'd):

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## WELL COMPLETION REPORT

3/20/96 WCR Form

### Instructions:
Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225, or 1-800-468-4644 Extension 70225.

### 1. Well completion report

**State Well No.:**

**Well Name:**

**Island:**

**Location/Address:**

**Tax Map Key:**

### PART I. WELL CONSTRUCTION REPORT

#### 3. Drilling Company:

#### 4. Name of driller who performed work:

#### 5. Type of rig/construction:

#### 6. Date(s) Well Construction and pump tests (if any) completed:

#### 7. GROUND ELEVATION (referenced to mean sea level, msl):

- **Well Bench Mark (description/location):**
- **Elevation(msl):**

#### 8. DRILLER'S LOG: Please attach geologic log (if available or if required by permit)

<table>
<thead>
<tr>
<th>Depths (ft.)</th>
<th>Rock Description</th>
<th>Water Level</th>
<th>Dates, etc.</th>
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(If more space is needed, continue on back.)

#### 9. Total depth of well below ground:

**ft.**

#### 10. Hole size:

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<th>Inch dia. from</th>
<th>to</th>
<th>ft. below ground</th>
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</table>

#### 11. Casing installed:

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<tr>
<th>in. I.D. x in. wall solid section to</th>
<th>ft. below ground</th>
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</table>

<table>
<thead>
<tr>
<th>in. I.D. x in. wall perforated section to</th>
<th>ft. below ground</th>
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</table>

**Casing Material/Slot Size:**

#### 12. Annulus:

- **Grouted from:** ft. below ground to ft. below ground
- **Gravel packed from:** ft. below ground to ft. below ground

#### 13. Initial water level:

**ft.** below ground. Date and time of measurement:

#### 14. Initial chloride:

**ppm** Date and time of sampling:

#### 15. Initial temperature:

**°F** Date and time of measurement:

#### 16. PUMPING TESTS: Reference Point (R.P.) used:

<table>
<thead>
<tr>
<th>Step-Drawdown Test Date</th>
<th>(2) Long-term Aquifer Test Date</th>
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</thead>
<tbody>
<tr>
<td>Start water level</td>
<td>ft. below R.P.</td>
</tr>
<tr>
<td>End water level</td>
<td>ft. below R.P.</td>
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</tbody>
</table>

#### 17. Aquifer Pump Test Procedures data & graphs (1/9/96 LTAT Form) attached? __ Yes __ No

#### 18. As-built drawings attached attached? __ Yes __ No

#### 19. Other remarks/comments: (On back of this form)
STANDARD PUMP INSTALLATION PERMIT CONDITIONS

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

2. The pump installation permit shall be for installation of a 75 gpm capacity, or less, pump in the well.

3. The permittee shall provide and maintain an approved meter or other appropriate means for measuring and reporting withdrawals and water levels, and appropriate devices or means for measuring chlorides and temperature. These data shall be measured monthly and reported to the Commission on a yearly basis, on forms provided by the Commission (attached).

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

5. The permittee shall complete and submit as-built drawings and Part II (Permanent) Pump Installation Report of the Well Completion Report (attached) to the Commission within thirty (30) days after completion of work.

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

7. The pump installation permit application and staff submittal approved by the Commission at its December 18, 1996 meeting are incorporated into the permit by reference.

8. The permit may be revoked 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 Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

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

10. Special conditions in the attached cover transmittal letter are incorporated herein by reference.
STANDARD WELL CONSTRUCTION PERMIT CONDITIONS

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

2. The well construction permit shall be for construction and testing of the well only. A minimum one-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Commission, to accurately record water levels. The permittee shall coordinate with the Commission and conduct a pumping test in accordance with the attached Aquifer Pump Testing Procedure (Exhibit 6). The permittee shall submit to the Commission 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 Commission.

3. 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.

4. In the event that subsurface cultural remains such as artifacts, burials or concentrations of shells or charcoal are encountered during construction, the permittee shall stop work and contact the Department's Historic Preservation Division (587-0045) immediately.

5. 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.

6. The following shall be submitted to the Commission within thirty (30) days after completion of work:
   a. Well completion report (attached, Exhibit 5, Part I).
   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 water quality data.

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

8. The well construction permit application and staff submittal approved by the Commission at its December 18, 1996 meeting are incorporated into the permit by reference.

9. The permit may be revoked 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 Commission upon a showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.

10. If the well is not to be used it must be properly capped. If the well is to be abandoned then the applicant must apply for a well abandonment permit in accordance with §13-168-12(f) prior to any well sealing work.

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

EXHIBIT 3
DIAGRAM FOR INJECTION WELL DIMENSIONS

Casing Stick Up (if any) 0.5 ft.

Top of Casing Elevation 50.5 ft., msl

Ground Elevation 50.0 ft., msl

Diameter of Boring 12 in.

Solid Casing:
Length 150 ft.
Diameter 8 in.
Wall Thickness 0.32 in.
Material STEEL

Cement Grout:
Length 150 ft.

Perforated Casing:
Length NA ft.
Diameter in.
Wall Thickness in.
Openings sq. in.

Rock Packing: NA
Length ft.
Grain Size

Open Hole: (if any)
Length 50 ft.
Diameter 12 in.

Total Depth of Boring 200 ft.
Bottom Elevation of Boring -150 ft., msl

INJECTION WELL DIAGRAM
EXISTING GROUND
WELL EL. = 52.0±

8" CASING
SCHEDULE 40
STEEL PIPE

CEMENT BASKET

12" MINIMUM
BORE

STATIC WATER LEVEL

GRAVEL FILTER

CASING SHOE

BOTTOM OF CASED WELL
EL = -15.0±
TO BE DETERMINED
BY ENGINEER

6" MINIMUM
BORE

IRRIGATION WELL SECTION
NOT TO SCALE

EXHIBIT 2
SCALE: 1 INCH = 30 FEET

Source: Maalaea Triangle Wastewater Treatment Facility Plans, dated 7/26/95, prepared by ECM, Inc.
Prepared by Elizabeth Shedd August 1996

FIGURE 3
WASTEWATER TREATMENT FACILITY SITE PLAN
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
AQUIFER (PUMP) TEST PROCEDURES

3. Each pumping rate should be continued for one hour, after which the new rate should be instituted as rapidly as possible.

4. Pumping should begin at the lowest rate and conclude with the highest rate.

5. Pumping should be continuous through the entire step-drawdown test.

6. Measurement of chloride concentration and temperature of the discharge water shall be measured at least five times:
   a. at the end of each pumping rate during the step-drawdown test, and
   b. at the very beginning of the test.

7. A sufficient number of water level measurements shall be made in the pumped well following the termination of the step-drawdown test to establish that the water level fully recovers from each test to pretest levels.

Long-Term Continuous Test

The purpose of the long-term continuous test is to determine the hydraulic properties of the aquifer to explore for and identify nearby aquifer boundaries such as streams or dikes, and to observe the trend in chloride concentration of the discharge water.

1. The long-term test should not commence until the water level in the pumped well has fully recovered from the step-drawdown test. Generally, the time required for this recovery will be slightly greater than four hours. The water level in the pumped well should be measured immediately before initiation of the long-term test.

2. The pump rate for the long-term test should be sufficient to create an observable drawdown.

3. The test should be run 24 hours per day for at least seven days. If during the test, the water level remains the same for a period of 24 hours, the test can be terminated.

4. Measurement of chloride concentration and temperature of the discharge water during the long-term test shall be made at the beginning of the test and every six hours thereafter.

5. Depth to water in all wells shall be measured with sufficient frequency that each logarithmic cycle in time on the data plots (Graph 1) contains at least 10 data points spread through the cycle. Thus, depth to water should be made at t=0 (immediately prior to start of the test), and as close as possible at t=1, 1.5, 2, 2.5, 3, 4, 5, 6, 7, and 8 minutes for the first ten minutes and at all succeeding decimal multiples of these numbers to the end of the test (t=10, 15, 20, 25, 30, 40, 50, 60, 70, and 80 minutes for the log cycle 10 to 100 minutes, etc.)

6. A sufficient number of water level measurements shall be made in the pumped well following termination of the long-term continuous test to establish that the water level fully recovers from each test to pretest levels.
## Table 1

LONG-TERM AQUIFER TEST DATA

<table>
<thead>
<tr>
<th>Pumped Well No.</th>
<th>Observation well no.</th>
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<tr>
<td>Pumped Well Name</td>
<td>Distance between Obs. &amp; Pumped Well ft.</td>
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<td>Target Q</td>
<td>Reference pt. for depth to water ft. msl</td>
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<td>Static Water Level @ start of test ft. msl</td>
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Water level measurements by:  
- **☐** steel tape  
- **☐** pressure transducer  
- **☐** airline

START TEST  
Date: ___________  Hour of day: ___________

Flow Meter Reading Start: ___________ gals

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<tr>
<th>Suggested elapsed time</th>
<th>Actual elapsed time</th>
<th>Depth to water (nearest 0.01 ft)</th>
<th>Drawdown (unadjusted to nearest 0.01 ft)</th>
<th>Pumping rate Q (gpm)</th>
<th>EC (µmhos)</th>
<th>CF (mg/l)</th>
<th>Temp. °F or °C</th>
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<td>Suggested elapsed time (min)</td>
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END TEST  Date: ___________   Hour of day: ___________

ADDITIONAL REMARKS:

Person in charge of pump test (print): ________________________________

Signature: ________________________________

The signature above indicates that the data reported on this form is accurate and true to the best of the person's knowledge who operated this aquifer test.

CWRM LTAT Form 1/9/96
ANNUAL GROUND WATER USE REPORT FOR

Maalaea Triangle Partnership
75-B North Church Street
Wailuku, Hawaii 96793

Report Submitted for the Year 19

<table>
<thead>
<tr>
<th>State Well No.</th>
<th>Well Name</th>
<th>Measurement End Date (mm/dd/yy)</th>
<th>Quantity Pumped (gallons)</th>
<th>Method of Measurement*</th>
<th>Chloride (mg/l)**</th>
<th>Temp. (°F)</th>
<th>Lowest Pumping Water Level (ft. above msl)</th>
<th>Highest Non-pumping Water Level (ft. above msl)</th>
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<tr>
<td>4830-01</td>
<td>Maalaea Triangle Well</td>
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* - flow meter, electrical consumption, weir of flume, not metered (estimated)
** - indicate how long pump was on or off when chloride sample taken
*** - minimum time between pump/well turned off and water level measurement must be at least 24 hours; if pumping schedule did not allow for at least 24 hour rest during the month please indicate amount of hours pump was off before this measurement

Other comments or additional information (e.g. - date and method of chloride measurement; how pumpage amounts are estimated; etc...):

Submitted by (print) ___________________________  Title ___________________________
Signature ___________________________  Date ___________________________
TO: Dr. Lawrence Miike, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Drinking Water Branch

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application for  
Maalaea Triangle Well (Well No. 4730-01)

Transmitted for your review and comment is a copy of the captioned well 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 25, 1996.

Please find a map, attached, to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0251.

RESPONSE: ☒ We have no comments  
( ) Comments attached

Contact Person: Lori Kajiwara  
Phone: 586-4294

Signed: Lori Kajiwara  
Date: 11/20/96
ROUTE SLIP

Well Construction X Pump Installation __ WUP Req'd

Well Name Maalea Triangle No. 4730 03 Island __________
Applicant Maalea Triangle Partnership Landowner same
Consultant Roscoe Moss __________ TMK 3-6-1:1

Mapped __________ Logcomp [ ] Logbk [ ]
Acceptd 30 Sep 96 +90 days 29 Dec 96 Bulletin October
Ch 343 pau NA Tent CWRM Action 13 Nov 96
Fee Depos 08 Oct 96

Sent
Acknowledgment 07 Oct 96 __________
DoH/Drink Water 01 Oct 96 __________
Wastewater __________

Comments Recd
Submittal mailed __________
CWRM _Appr _Deny __________
Permit/Notice to Appl __________
Cond.s routed to Survey __________
Faxed..Appl: __________
Consult: __________
3rdP: __________
TO:     Dr. Lawrence Miike, Director
        Department of Health
        Attention:    Dennis Tulang, Wastewater Branch
                      William Wong, Drinking Water Branch

FROM:  Michael D. Wilson, Chairperson
        Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application for
        Maalaea Triangle Well (Well No. 4730-01)

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              We would appreciate your comments on the captioned application for any conflicts
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              Please respond by returning this cover memo form by October 25, 1996.

              Please find a map, attached, to locate the proposed well. If you have any questions
              about this permit application, request additional information, or request additional review
              time, please contact Charley Ice of the Commission staff at 587-0251.

RESPONSE: ( ) We have no comments
           ( ) Comments attached

Contact Person:  MEVIN J. HAMANO     Phone:  586-4258

Signed:  MEVIN J. HAMANO     Date:  OCT 14, 1996
Mr. Michael Spalding  
75-B North Church Street  
Wailuku, Hawaii 96793

Dear Mr. Spalding:

Well Construction/Pump Installation Permit Application for  
Maalaea Triangle Well (Well No. 4730-01)

We accepted your application for the captioned well on September 30, 1996, and hereby acknowledge that it is complete. You can expect your application to be processed for action within ninety (90) days from that acceptance date.

If you have any questions about your application, please contact Charley Ice of the Commission staff at 587-0251 or toll-free at 984-2400, extension 70251.

Sincerely,

[Signature]

RAE M. LOUI  
Deputy Director

Cl:ss
TO: Dr. Lawrence Miike, Director  
Department of Health  
Attention: Dennis Tulang, Wastewater Branch  
William Wong, Drinking Water Branch

FROM: Michael D. Wilson, Chairperson  
Commission on Water Resource Management

SUBJECT: Well Construction/Pump Installation Permit Application for  
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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 25, 1996.

Please find a map, attached, to locate the proposed well. If you have any questions about this permit application, request additional information, or request additional review time, please contact Charley Ice of the Commission staff at 587-0251.

Cl:ss  
Attachment(s)

RESPONSE: ( ) We have no comments  
( ) Comments attached

Contact Person: ___________________________ Phone: ________________

Signed: ___________________________ Date: ________________
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<tr>
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**REMARKS:**
LINE (1) Well No. 4630-01 (WCPA/PIPA)
LINE (2)
LINE (3)
LINE (4)

**TOTAL**
25.00

**PAY TO THE ORDER OF**
S.O.H. DEPT OF LAND & NATURAL RESOURCES

**PAY TWENTY FIVE DOLLARS AND NO/100**

**BANK OF HAWAII**
MAIN OFFICE
HONOLULU, HI 96814

**CHECK**
16124

**DATE**
8-22-96

**DOLLARS**
***25.00***

**AUTHORIZED SIGNATURE**

**PRINTED ON RECYCLED** recyclable stainless paper to protect the environment

8-22-96 DL11 PERMITS

| 6032.61 | 25.00 |
APPLICATION FOR PERMISSION

1. APPLICANT: (circle primary contact a, b, or c) Primary Fax: (808) 692-9865
   (a) WELL OWNER
     Firm/Name: Malaee Triangle Partnership
     Contact Person: Michael Spalding Ph: (808) 242-5788
     Address: 75-B North Church Street, Waikiki, HI 96823
   (b) LANDOWNER
     Firm/Name: Malaee Triangle Partnership
     Contact Person: Michael Spalding Ph: (808) 242-5788
     Address: 75-B North Church Street, Waikiki, HI 96823
   (c) CONTRACTOR
     Firm/Name: Reserve Moss Hawaii, Inc. Ph: (808) 692-9865
     Contact Person: Tracy Runnels v: 265-6771
     Address: 91-228A, Olai Street, Kapolei, HI 96707

2. WELL LOCATION/NAME: Malaee Triangle Subdivision Island: Maui
   Address: Not available at this time
   Tax Map Key: 2nd Div., 3-6-06-01

3. (a) PROPOSED WORK: [ ] Drill New Well [ ] Deepen
    [ ] Modify Existing Well [ ] Redrill
    [ ] Abandon/Seal * [ ] Replace Pump
    * Be sure to complete and submit well abandonment report upon completion of work.

(b) WELL TYPE:
   [ ] Dug [ ] Bored [ ] Driven [ ] Drilled [ ] Radial
   Is this well a part of a battery of wells? [ ] Yes [ ] No
   (Briefly describe and fill in the diagram on the back of this form.)

4. PROPOSED PUMP INFORMATION:
   Rated Pump Capacity: 75 gallons per minute
   - Motor: [ ] Electric, rated horsepower: 10
   - Pump Type:
     [ ] Deep Well Turbine [ ] Rotary
     [ ] Submersible [ ] Rotary-Displacement
     [ ] Centrifugal [ ] Rotary-Gear
     [ ] Impulse

   If Pump Replacement, Existing Pump Capacity: ___________ gallons per minute

5. PROPOSED USE:
   [ ] Municipal (including hotels, stores, etc.) [ ] Military
   [ ] Domestic (individual, noncommercial water systems) [ ] Industrial
   [ ] Irrigation (crop lands, irrigation) [ ] Other (explain)

6. (a) PROPOSED AMOUNT OF WITHDRAWAL: 20,000 gallons per day thereafter
    (b) METHOD OF FLOW MEASUREMENT:
       [ ] Flow-meter [ ] Open-pipe [ ] Orifice Plate [ ] Weir

7. PENDING ACTIONS:
   [ ] CDUA [ ] SMA [ ] EIS [ ] EA [ ] NONE [ ] Other (explain)
       Completion Date: _____________________________

8. REMARKS, EXPLANATIONS:

I understand that approval of this application attahes 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 30 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 correlative water rights and shall not extend to any pump capacity or water use up to the permitted pump capacity.

WELL OWNERS:

LANDOWNER:

CONTRACTOR:

For Official Use Only:
Date Received ____________________________
Date Accepted ____________________________
Field Checked By __________________________
Date ____________________________
Longitude ____________________________
Latitude ____________________________
Aquifer System Name __________________________
State Well No. __________________________
Application Date: SEP 16 A7 29

Malaee Triangle Partnership

11/08/05 WCP/FL
9. PROPOSED WELL SECTION

Elevation at top of casing  
54± ft. msl.

Ground Elevation: 62± ft. msl

Cement Grout: 50± ft.

Rock Packing 17± ft.

Hole Diameter: 12± in.

Total Depth 52± ft.

Solid Casing:  
Material STEEL
Length 52 ft.
Diameter 8 in.
Wall thickness 0.322 in.

Casing: ☐ Perforated ☑ Screen  
Material STEEL
Length 15 ft.
Diameter 8 in.
Wall thickness 0.250 in.
Openings 20 sq. in./L.F.

Open Hole:  
Length 25 (engineer to field verify) ft.
Diameter 6 in.

---

*Approximate elevation at time of filing application. Ground elevation above mean sea level (msl) by a surveyor licensed by the State must be submitted at start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.

Clean & New '96 
/ Tracy Runnels: 
Injection well to be drilled first, pumped - 
ested to prevent groundwater for 
imjection. If not 
satisfactory, injection 
well will be cancelled.
WASTEWATER TREATMENT FACILITY SITE PLAN
MAALAEA TRiANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

SCALE: 1 INCH = 30 FEET

Source: Maalaea Triangle Wastewater Treatment Facility Plans,
dated 7/26/96, prepared by ECM, Inc.
Prepared by Elizabeth Shedd August 1996
EXISTING GROUND
WELL EL. = 52.0±

8" CASING
SCHEDULE 40
STEEL PIPE

CEMENT BASKET

12" MINIMUM
BORE

STATIC WATER LEVEL

GRAVEL FILTER

CASING SHOE

BOTTOM OF CASED WELL
EL. = -15.0±
TO BE DETERMINED
BY ENGINEER

6" MINIMUM
BORE

IRRIGATION WELL SECTION
NOT TO SCALE
3/4" S.S. ANCHOR BOLTS W/LEVELING NUT

NON-SHRINK 
GROUT

#4 REBAR AT 12" O.C., EW

4" THICK x 6'-0" SQ.
CONCRETE SLAB CLASS 2500

22" SQ.
CONC. BASE

DETAIL
NOT TO SCALE

M-4
IRRIGATION PUMP / WELL

SCALE: 3/4" = 1'-0"
Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Elizabeth Shedd August 1996
FIGURE 2
SITE PLAN
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Elizabeth Shedd August 1996
Source: City and County of Honolulu, Real Property Assessment Division, Tax map Section
Prepared by Elizabeth Shedd, August 1996

FIGURE 4
TAX MAP KEY 2nd Div. 3-06-01:01
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
1. State Well No.: 3840-01 Well Name: Maalaea Triangle Island: Maui

2. Address: Maalaea Triangle, Honoapi'ilani @ Maalaea Tax Map Key: 3-6-1:1

3. Pump Installation Company: 

4. Date Pump Installed: 

5. PERMANENT PUMP INFORMATION (Attach pump specifications and rating curve)

   Pump Type, Make, Serial No.: 

   Rated Capacity: ____________________ gpm at head of: _____________________ ft.

   Motor Type, H.P., Voltage, rpm: 

   Type of flow meter: ____________________ which measures in ____________________

   Pump type (check one):
   □ Deep Well Turbine □ Rotary □ Propeller
   □ Submersible □ Rotary-Displacement □ Reciprocating
   □ Centrifugal □ Rotary-Gear □ Impulse

6. Method of flow measurement:
   □ Flowmeter Manufacturer __________ Make ________ Size __________
   □ Weir □ Open Pipe □ Orifice* □ Other*, explain below

   *attach schematic

7. Fill in the as-built section on the other side of this sheet.

8. Attach photograph of well and concrete pad clearly showing benchmark on concrete pad.

9. Other remarks/comments:

   __________________________________________________________
   __________________________________________________________

Pump Installation Contractor (print) __________________________ C-57/C-57a/A Lic. No. __________

Signature __________________________ Date __________

Permittee (print) __________________________

Signature __________________________ Date __________
9. AS-BUILT PUMP SECTION
(Please attach as-built if different from drawing provided below)

Bench mark elevation surveyed to nearest 0.01 ft. = ______ ft. mean sea level

Elevation of top of chase tube = ______ ft. mean sea level

Pump intake depth = ______ ft.
(referenced to bench mark)

Chase tube depth = ______ ft.
(referenced to bench mark)

If airline installed, bottom of airline elevation = ______ ft. mean sea level
FIGURE 5
LOCATION OF EXISTING WELLS
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

Source: State of Hawaii, Dept. of Land and Natural Resources, Division of Water Resource Management, Map M-6, dated 1994
Prepared by Elizabeth Shedd August 1996
1. **APPLICANT:** (circle primary contact a, b, or c) 
   - **Primary Fax:** (908) 692-5666
   - **LANDOWNER**
     - **Firm/Name:** Malaea Triangle Partnership
     - **Contact Person:** Michael Spalding
     - **Address:** 75-8 North Church Street, Waikiki, HI 96823
   - **CONTRACTOR**
     - **Firm/Name:** Roseco Moss Hawaii, Inc.
     - **Contact Person:** Tracy Runnels
     - **Address:** 21-26A Olai Street, Kapolei, HI 96707

2. **WELL LOCATION/NAMES:** 
   - **Island:** Maui
   - **Address:** Not available at this time
   - **Tax Map Key 2nd Div. 3-6-01:01**
   - (Attach a USGS map, scale 1"=2000', and a property tax map showing well location referenced to established property boundaries.)

3. (a) **PROPOSED WORK:**
   - **Drill New Well**
   - **Modify Existing Well**
   - **Abandon/Seal**
   - **Replace Pump**
   - *Be sure to complete and submit well abandonment report upon completion of work.*

   (b) **WELL TYPE:**
   - **Dug**
   - **Bored**
   - **Driven**
   - **Orilled**
   - **Radial**
   - Is this well a part of a battery of wells?  
     - **Yes**
     - **No**
   - (Briefly describe and fill in the diagram on the back of this form.)

4. **PROPOSED PUMP INFORMATION:**
   - **Rated Pump Capacity:** 75 gallons per minute
   - **>Type:**
     - **Deep Well Turbine**
     - **Submersible**
     - **Centrifugal**
   - **Motor:**
     - **Diesel**
     - **Gas**
   - If Pump Replacement, Existing Pump Capacity: ___ gallons per minute

5. **PROPOSED USE:**
   - **Municipal (including hotels, stores, etc.)**
   - **Domestic (individual, noncommercial water sys.)**
   - **Irrigation (crop landscape irrigation)**
   - **64,500 gpd last month (establish grasses and plants)**
   - **Military**
   - **Industrial**
   - **Other (explain)**

6. (a) **PROPOSED AMOUNT OF WITHDRAWAL:** 23,000 gallons per day thereafter

(b) **METHOD OF FLOW MEASUREMENT:**
   - **Flow-meter**
   - **Open-pipe**
   - **Orifice Plate**
   - **Weir**

7. **PENDING ACTIONS:**
   - **CDUA**
   - **SMA**
   - **EIS**
   - **EA**
   - **NONE**
   - **Other (explain)**

8. **REMARKS, EXPLANATIONS:**

   (If more space is needed, continue on back)

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**For Official Use Only:**

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<thead>
<tr>
<th>Well Owner</th>
<th>Landowner</th>
<th>Contractor</th>
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<td>Date</td>
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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 30 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 correlative water rights and shall not be construed as an indication that the application has been granted. **FOR PERMIT USE ONLY**
8. Remarks, Explanations (cont'd):

9. PROPOSED WELL SECTION

Elevation at top of casing
54± ft., msl.

Cement Grout: 50± ft.

Rock Packing: 17± ft.

Hole Diameter: 12± in.

Total Depth: 92± ft.

Ground Elevation: 50± ft., msl*

Solid Casing:
Material: STEEL
Length: 50 ft.
Diameter: 8 in.
Wall thickness: 0.322 in.

Casing: □ Perforated □ Screen
Material: STEEL
Length: 15 ft.
Diameter: 8 in.
Wall thickness: 0.250 in.
Openings: 20 sq. in./L.F.

Open Hole:
Length: 25 (engineer to field verify) ft
Diameter: 6 in.

*Approximate elevation at time of filing application. Ground elevation above mean sea level (msl) by a surveyor licensed by the State must be submitted at start of construction. Final elevations of well components shall be submitted in the well completion/well abandonment reports.
Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Elizabeth Shedd August 1996
FIGURE 5
LOCATION OF EXISTING WELLS
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

Source: State of Hawaii, Dept. of Land and Natural Resources, Division of Water Resource Management, Map M-6, dated 1994
Prepared by Elizabeth Shedd August 1996
Source: City and County of Honolulu, Real Property Assessment Division, Tax map Section
Prepared by Elizabeth Shedd August 1996

FIGURE 4
TAX MAP KEY 2nd Div. 3-06-01:01
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.

Prepared by Elizabeth Shedd August 1996

FIGURE 2
SITE PLAN
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

NOT TO SCALE
Figure 3
Wastewater Treatment Facility Site Plan
Maalaea Triangle Wastewater Treatment Facility
Maalaea, Maui, Hawaii

Source: Maalaea Triangle Wastewater Treatment Facility Plans, dated 7/26/95, prepared by ECM, Inc.
Prepared by Elizabeth Shedd August 1996

Scale: 1 inch = 30 feet
IRRIGATION PUMP / WELL

CONDUIT TO CONTROL PANEL

4x4x10 DISCHARGE HEAD

TOP COL. FLANGE

CONCRETE

#4 REBAR Ø

ENGINEER TO FIELD VERIFY

CONCRETE

FLOW SWITCH

SUBMERSIBLE MOTOR

SCALE: 3/4" = 1'-0"
FIGURE 1
LOCATION MAP
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
Source: State of Hawaii, Dept. of Land and Natural Resources, Division of Water Resource Management, Map M-6, dated 1994
Prepared by Elizabeth Shedd August 1996

FIGURE 5
LOCATION OF EXISTING WELLS
MAALAEA TRIANGLE WASTEWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII
FIGURE 4
TAX MAP KEY 2nd Div. 3-06-01:01
MAALAEA TRIANGLE WASTERWATER TREATMENT FACILITY
MAALAEA, MAUI, HAWAII

Source: City and County of Honolulu, Real Property Assessment Division,
Tax map Section
Prepared by Elizabeth Shedd August 1996
Figure 2
Site Plan
Maalaea Triangle Wastewater Treatment Facility
Maalaea, Maui, Hawaii

Source: Maalaea Triangle Wastewater Treatment Facility plans, dated 7/26/95, prepared by ECM Inc.
Prepared by Elizabeth Shedd August 1996