## WELL CONSTRUCTION PERMIT

<table>
<thead>
<tr>
<th>WELL NAME or LOCATION:</th>
<th>Hanaa Well</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISLAND:</td>
<td>Maui</td>
</tr>
</tbody>
</table>

| WELL NUMBER:          | 4300-02    |
| Tax Map Key:          | 1-4-09:2   |

### OWNER/OPERATOR:
- **Firm Name:** Maui DWS  
- **Contact Person:**  
- **Address:**  
- **Phone:**  

### LANDOWNER:
- **Firm Name:** Hana Ranch, Inc.  
- **Address:** P.O. Box 158, Hana, HI 96713  
- **Phone:**  

### Dates:
- **Date application received:** 6-18-90  
- **Date acknowledged receipt/request more info:** 8-30-90  
- **Suspense date (90 days):**  
- **Date filing fee deposited:**  

### Application sent to following:

<table>
<thead>
<tr>
<th>Dept.</th>
<th>Date sent</th>
<th>Comments received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dept. of Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>County water board/dept</td>
<td></td>
<td></td>
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<tr>
<td>Dept. Pub. Wrks (Hawaii)</td>
<td></td>
<td></td>
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<tr>
<td>Dept. of Havn Homes</td>
<td></td>
<td></td>
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<tr>
<td>Koolauloa NB #28</td>
<td></td>
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<tr>
<td>[AC] Senate [ ] House</td>
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</tbody>
</table>

### Dates:
- **Date agenda due:**  
- **Date submittal due:**  
- **Date submittal sent to applicant:**  

### Date application approved or disapproved:  

### Date applicant notified of decision:  

### REMARKS:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>TO:</td>
<td>INIT.</td>
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<td>---------------</td>
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</tr>
<tr>
<td>BAUER, G.</td>
<td></td>
</tr>
<tr>
<td>CHING, F.</td>
<td></td>
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<tr>
<td>FUJII, N.</td>
<td></td>
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<tr>
<td>HARDY, R.</td>
<td></td>
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<tr>
<td>HIGA, D.</td>
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<tr>
<td>HIRANO, E.</td>
<td>3/6</td>
</tr>
<tr>
<td>ICE, C.</td>
<td></td>
</tr>
<tr>
<td>IMATA, R.</td>
<td></td>
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<tr>
<td>JINNAI, R.</td>
<td></td>
</tr>
<tr>
<td>JOHNS, T.</td>
<td>6</td>
</tr>
</tbody>
</table>

Hawaii well 4,000-02

1. well drilling permit issued 6/11/84
   (CHAP. 166 TITLE 13)
2. Drilling completed Nov. 85
3. 200 GPM Pump installed Dec. 84
   (original)
   Last thing in file - so don't know
   IF ATF APPL. Says NEW PUMP.
**WCR 2 Check for Well No. 4300-02** (survey to regulation memo)

1. **Pump Tests Check** (special condition of PIP? Yes/No) Glenn Bauer (initial if yes)

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>If no, describe deficiency</th>
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</thead>
<tbody>
<tr>
<td>Step-Drawdown Test:</td>
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</tr>
<tr>
<td>acceptable</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>followed WCPI Stds</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>analysis attached</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>proposed pump cap o.k.</td>
<td>☐</td>
<td>☐</td>
<td></td>
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<tr>
<td>Aquifer Pump Test:</td>
<td></td>
<td></td>
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</tr>
<tr>
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<td>☐</td>
<td>☐</td>
<td></td>
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<td>followed WCPI Stds</td>
<td>☐</td>
<td>☐</td>
<td></td>
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<tr>
<td>T &amp; S analysis attached</td>
<td>☐</td>
<td>☐</td>
<td></td>
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<tr>
<td>Well Interference:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>estimated Steady-State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>drawdown at 1-mile radius is</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>analysis attached</td>
<td>☐</td>
<td>☐</td>
<td></td>
</tr>
<tr>
<td>Stream Surface Water Impacted:</td>
<td>☐</td>
<td>☐</td>
<td>← If yes, identify most probable stream</td>
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2. **Pump Installation Check** Mitch Ohye (initial)

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<tr>
<th></th>
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</thead>
<tbody>
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<tr>
<td>welaplic.dbf updated</td>
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1. WCR list pump distance 300 ft
2. As-pump list 200 ft
August 13, 1998

Honorable Timothy E. Johns
Deputy Director
State of Hawaii
Department of Land & Natural Resources
COMMISSION ON WATER RESOURCE MANAGEMENT
P. O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Johns:

Subject: Hamoa Well - State Well No. 4300-02
Hamoa Well Source Development and Tank
TMK 1-4-009:002, Hana, Maui, Hawaii

Transmitting, for your use, is the completed pump installation report and as-built drawing.

Should you have any questions, please contact Andy Pascua, Acting Plant Maintenance Superintendent, (808) 243-7551.

Sincerely,

David Craddick, Director
DC:AP:jaw
Transmittals
copy: DWS Engineering
Andy Pascua

"By Water All Things Find Life"
## (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: **Roscoe Moss Hawaii, Inc.**

21. Name of person performing work: __________________________

22. Date Pump Installation Completed: **Dec 1989**

23. **PUMP INSTALLATION:**
   - **Pump Type, Make, Serial No.:** Vert Turb, Layne
   - **Capacity:** 300 gpm
   - **Motor type, H.P., Voltage, rpm:** VHS, 40, 460, 1770
   - **Depth of Pump Intake Setting:** 358 ft. below **Head**, which elevation is 350 ft.
   - **Depth to bottom of airline:** 352 ft. below **Head**, which elevation is 350 ft.
   - **Pumping Head is:** ______ ft. **Type of flow meter:** Prop which measures in Gal

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

25. Other remarks/comments: *(See below)*

<table>
<thead>
<tr>
<th>Pump Installation Contractor (print)</th>
<th>Roscoe Moss Hawaii, Inc.</th>
<th>C-57 Lic. No.</th>
<th>AC-16437</th>
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</thead>
<tbody>
<tr>
<td><strong>Signature</strong></td>
<td><strong>William C. Moore</strong></td>
<td><strong>Date</strong></td>
<td>8/6/98</td>
</tr>
<tr>
<td><strong>Applicant (print)</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Signature</strong></td>
<td><strong>David C. Moore</strong></td>
<td><strong>Date</strong></td>
<td>8/13/98</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Water Level Depth (ft.)</th>
<th>Rock Description, Remarks, Dates (ft.)</th>
<th>Water Level Depth (ft.)</th>
<th>Rock Description, Remarks, Dates (ft.)</th>
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</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

19. & 25. Remarks: **4300-02 HAMOA WELL**
# State of Hawaii
## COMMISSION ON WATER RESOURCE MANAGEMENT
### Department of Land and Natural Resources

**WELL COMPLETION REPORT**  
(Aug 14, 1996 Form)

<table>
<thead>
<tr>
<th>State Well No.:</th>
<th>4300-02</th>
<th>Well Name:</th>
<th>Hamoa</th>
<th>Island:</th>
<th>Maui</th>
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<tbody>
<tr>
<td>Location/Address:</td>
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<td>Tax Map Key:</td>
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</tbody>
</table>

## 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): __________ ft.  
   Well Bench Mark (description/location): ____________________________ Elevation(msl): __________ ft.

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

   Depth (ft.) | Rock Description, Water Level, Dates, etc. | Depth (ft.) | Rock Description, Water Level, Dates, etc.  
   --- | --- | --- | ---  
   (If more space is needed, continue on back.)

9. Total depth of well below ground: __________ ft.

10. Hole size:  
    - __________ inch dia. from __________ ft. to __________ ft. below ground  
    - __________ inch dia. from __________ ft. to __________ ft. below ground  
    - __________ inch dia. from __________ ft. to __________ ft. below ground

11. Casing installed:  
    - __________ in. I.D. x __________ in. wall solid section to __________ ft. below ground  
    - __________ in. I.D. x __________ in. wall perforated section to __________ ft. below ground  
    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: ____________________________, which elevation is __________ ft.  
   (1) Step-Drawdown Test Date ____________________________  
   Start water level __________ ft. below R.P.  
   End water level __________ ft. below R.P.  
   (2) Long-term Aquifer Test Date ____________________________  
   Start water level __________ ft. below R.P.  
   End water level __________ 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) ____________________________  
C-57 Lic. No. ____________________________  
Signature ____________________________  
Date ____________________________

Surveyor (print) ____________________________  
Lic. No. ____________________________  
Signature ____________________________  
Date ____________________________

Applicant (print) ____________________________  
Signature ____________________________  
Date ____________________________
October 4, 1990

Mr. William W. Paty, Chairman
Commission on Water Resource Management
State of Hawaii
P. O. Box 621
Honolulu, Hi 96809

Dear Mr. Paty:

Subject: Hamoa Well No. 4300-02, Hana, Maui

We have received your letter with regard to the permit for pump installation for the Hamoa Well. We concur and will comply with all the provisions set forth in your letter.

Thank you for your swift response to our request.

Sincerely,

[Signature]

Rae M. Shikuma, Director

NGP/ao

cc: Engr.

"By Water All Things Find Life"
See Eric H irano, DWRM

DAIL Y DRILLING REPORTS ARCHIVED MARCH 96
PUMP INSTALLATION PERMIT

for

Hamoa Well
Well No. 4300-02
Hana, Maui

TO: Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui, HI 96793-7109

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to install a pump in Hamoa Well (Well No. 4300-02), for municipal use, is approved subject to the following conditions:

1. The Division of Water Resource Management (DWRM), Geology-Hydrology Section, shall be notified at 548-7543, before any work covered by this permit commences.

2. The proposed use shall not adversely affect existing legal uses in the area.

3. The following shall be submitted to DWRM, P.O. Box 373, Honolulu, Hawaii 96809, within 30 days after completion of the work:
   a. Well Completion Report.
   b. Complete pumping test record, including time, pumping rate, drawdown, chloride content, and water quality data.

4. The applicant shall comply with all applicable laws, rules, and ordinances.
5. This permit may be revoked if work is not started within six months of the date of issuance or if work is suspended or abandoned for six months. The work shall be completed within two years of the date of issuance.

WILLIAM W. PATY, Chairperson
Commission on Water Resource Management

OCT 2 1990
Date of Issuance

cc: USGS
Department of Health
    Drinking Water Branch
    Ground Water Protection Program
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
Honolulu, Hawaii

September 19, 1990

Chairperson and Members
Commission on Water Resource Management
State of Hawaii
Honolulu, Hawaii

Gentlemen:

Maui Department of Water Supply
Application for Pump Installation Permits
Kualapuu Well, Hamoa Well, Waiehu Heights 2, and Honokahua B,
County of Maui

Applicant: Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui, HI 96793-7109

The Maui Department of Water Supply requests permission to install pumps into the following wells for municipal use:

1. Kualapuu Well (Well No. 0801-03)
   
   Landowner: Molokai Ranch, Ltd.

   Proposed Action: Install new 900 gallons per minute pump.

   Proposed Amount of Withdrawal: 450,000 gallons per day.

   Analysis: The well was drilled in 1987 under the exploratory drilling program of the Department of Land and Natural Resources and turned over to the County Department of Water Supply for development. The well will develop fresh basal water and will become the primary source for Kaunakakai. No immediate adverse impacts are expected.

   Water Availability: The well is located in the Central Sector, Kualapuu System of Molokai, according to the latest work in conjunction with the Hawaii Water Plan. Sustainable yield is estimated at 7 mgd. Present use in the system is about 1 mgd.

   Agency Review: The Department of Hawaiian Home Lands (DHHL) "is extremely concerned about this application and recommends that it be denied at this time. Until the current difficulties surrounding water use from the Kualapuu aquifer are resolved, there should be no additional permits granted." The DHHL further recommends that the Commission "defer action on all well construction permit applications and on applications for new pumps or pumps of greater size than currently exist for those areas which impact on Hawaiian Home Lands until such time as the Native Hawaiian rights portion of the State Water Plan is completed."

ITEM 1
RECOMMENDATION:

That the Commission approve the issuance of a pump installation permit for Kualapuu Mauka Well, subject to the following conditions:

(1) The applicant shall notify the Division of Water Resource Management (DWRM) before work begins.

(2) The applicant shall submit a well completion report to DWRM within 30 days after completion of the work.

(3) The proposed use shall not adversely affect existing legal uses in the area.

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

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

2. Hamoa Well (Well No. 4300-02)

Landowner: Hana Ranch, Inc.

Proposed Action: Install new 200 gallons per minute pump.

Proposed Amount of Withdrawal: 82,000 gallons per day.

Analysis: The well was drilled in 1985 under the exploratory drilling program of the Department of Land and Natural Resources and turned over to the County Department of Water Supply for development. The well will develop fresh basal water and will supply the community of Hana. No adverse impacts are expected.

Water Availability: The well is located in the Hana Sector, Kawaipapa System of Maui, according to the latest work in conjunction with the Hawaii Water Plan. Sustainable yield is estimated at 48 mgd. Present use in the system is less than 0.5 mgd.

RECOMMENDATION:

That the Commission approve the issuance of a pump installation permit for Hamoa Well, subject to the same conditions as the previous permit.

3. Waiehu Heights 2 (Well No. 5430-02)

Landowner: County of Maui

Proposed Action: Replace existing 1,250 gpm pump with a new 1,250 gpm pump.

Proposed Amount of Withdrawal: 860,000 gallons per day.
Chairperson and Members  
Commission on Water Resource Management  
September 19, 1990

Water Availability: The well is located in the Wailuku Sector, Iao System of Maui, according to the latest work in conjunction with the Hawaii Water Plan. Sustainable yield is estimated at 20 mgd. Present use in the system is about 18 mgd.

RECOMMENDATION:

That the Commission approve the issuance of a pump installation permit for Waiehu Heights 2 Well, subject to the same conditions as the previous permit.

4. Honokahua B (Well No. 5938-01)

Landowner: Maui Land and Pine

Proposed Action: Install new 700 gallons per minute pump.

Proposed Amount of Withdrawal: 1,000,000 gallons per day.

Analysis: The well will develop fresh basal water and will supply the Lahaina-Alaieoa public water system. No immediate adverse impacts are expected.

Water Availability: The well is located in the Lahaina Sector, Honolua System of Maui, according to the latest work in conjunction with the Hawaii Water Plan. Sustainable yield is estimated at 8 mgd.

RECOMMENDATION:

That the Commission approve the issuance of a pump installation permit for Honokahua B Well, subject to the same conditions as the previous permit.
In reply, please refer to:

SEP 17  90

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

Dear Mr. Paty:

Subject: PUMP INSTALLATION PERMIT APPLICATION
HAMOA WELL
STATE WELL NO. 4300-02
HAMOA, MAUI

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

In accordance with the Department’s Administrative Rules, Title 11, Chapter 20, section 11-20-29, the Department of Health has approved the subject well as a source of potable water (November 17, 1989 letter to Vince Bagoyo, Jr.). Thus, we have no objections to the installation of a 200 gallons per minute pump on this well.

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

Very truly yours,

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

cc: Rae Shikuma
Director
Department of Water Supply
P.O. Box 1109
Wailuku, Maui, HI  96793
August 31, 1990

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

Dear Mr. Paty,

Pump Installation Permit Applications

Thank you for the opportunity to comment on these permit applications:

Waiehu Heights 2 (Well No. 5430-02)
\(\checkmark\) Hamoa Well (Well No. 4300-02)
Kualapuu Mauka Well (Well No. 0801-03)
Honokahua B (Well No. 5938-01)

Only the Kualapuu Mauka Well has potential impact on Hawaiian Homes Lands and upon native Hawaiian water rights. This well is located in the immediate vicinity of DHHL's main source for Hawaiian Home Lands on Moloka'i, and thereby draws from the same source. Information provided does not indicate what impact, if any, has been considered. We request an analysis of drawdown and sustainable yield for Well 0801-03 be provided for our consideration.

You may direct questions to Charley Ice in our Planning Office, 548-8785.

Warmest aloha,

Hoaliku L. Drake, Chairman
Hawaiian Homes Commission
Honorable Hoaliku L. Drake
Director
Department of Hawaiian Home Lands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

Dear Mrs. Drake:

Pump Installation Permit Applications

We are sending you copies of the following permit applications and ask that your staff review them to determine if Hawaiian Home Lands may be affected:

- Waiehu Heights 2 (Well No. 5430-02)
- Hamoa Well (Well No. 4300-02)
- Kualapuu Mauka Well (Well No. 0801-03)
- Honokahua B (Well No. 5938-01)

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

Please call Manabu Tagomori at 548-7533 if you have any questions.

Very truly yours,

WILLIAM W. PATY

Encl.
June 13, 1990

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

Gentlemen:

Re: PUMP INSTALLATION PERMITS

Pursuant to your letter of May 30, 1990, we are submitting applications for pump installation permits for the following projects:

2. Honekahua Well B, Pump Installation.  5938-01
3. Waiehu Heights Pump #2, Pump Replacement.  5430-02
4. Hamoa Well, Pump Installation.  4300-02
5. Kula Pump Well, Pump Installation.  0801-03

Kulaopuu Waiola

Additional information requested are as follows:

1. Wakiu Wells "A" and "B" both have 40 horsepower motors and have capacities of 350 gpm.

2. Waihee Wells #1, #2, and #3 all flow through the same meter.

If any additional information is required, please contact us.

Sincerely,

Vince G. Bagoyo, Jr.
Director

Enclosures
APPLICATION FOR

WELL CONSTRUCTION PERMIT

☐ PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96808. Application must be accompanied by a non-refundable filing fee of $15.00 payable to the Department of Land and Natural Resources. (Filing fee waived for Government agencies.) If necessary, phone 548-1543, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island Maui

Address Hana, Hawaii

(Tax Map Key 1-4-09: 2)

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

2. WELL OWNER

Firm Name Dept of Water Supply

Contact Person

Address P.O. Box 1107

Wailuku, Maui, Hawaii

Phone 243-7730

Firm Name Hana Ranch, Inc.

Contact Person

Address P.O. Box 158

Hana, Hawaii 96713

Phone

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

Name Roseau Moss Co.

Address 830 Alaka St.

Honolulu, Hawaii 96819

Contractor's License No. 2101

Phone 839-6888

4. PROPOSED WORK

☐ Drill New Well ☐ Deepen ☐ Redrill

☐ Alter ☐ Seal ☐ Abandon

☐ Install New Pump ☐ Replace Pump ☐ Modify Pump

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

5. PROPOSED USE

☐ Municipal (including hotels, stores, etc.) ☐ Industrial

☐ Domestic (individual, noncommercial water systems) ☐ Irrigation (specify)

☐ Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL 82,000 gallons per day

7. PROPOSED PUMP INFORMATION

Pump Type: ☐ Vertical Turbine ☐ Submersible

☐ Centrifugal

Motor: ☐ Diesel ☐ Gas ☐ Electric: 40

Rated Pump Capacity 200 gallons per minute (gpm)

Well Owner (print) Debra Watanabe Landowner (print)

Signature ____________________________ Signature ____________________________

Date 6-18-90 Date ____________________________

For Official Use Only:

Field Checked By ____________________________ Latitude ____________________________

Date ____________________________ Longitude ____________________________

Hydrologic Unit ________________

State Well No. 4300-02

Hana
Briefly describe the proposed work:

Install new 6" 8 stage deepwell pump with control building and emergency generator. Construct 150,000 gallon tank

PROPOSED SECTION OF WELL

<table>
<thead>
<tr>
<th>Description</th>
<th>Measurement</th>
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<tbody>
<tr>
<td>Elevation at top of casing</td>
<td>ft., msl.</td>
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<td>Ground Elev.</td>
<td>ft., msl*</td>
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</tr>
<tr>
<td>Solid Casing:</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>ft.</td>
</tr>
<tr>
<td>Diameter</td>
<td>in.</td>
</tr>
<tr>
<td>Wall thickness</td>
<td>in.</td>
</tr>
<tr>
<td>Casing:</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td>ft.</td>
</tr>
<tr>
<td>Diameter</td>
<td>in.</td>
</tr>
<tr>
<td>Wall thickness</td>
<td>in.</td>
</tr>
<tr>
<td>Openings</td>
<td>sq. in./L.F.</td>
</tr>
<tr>
<td>Screen</td>
<td></td>
</tr>
<tr>
<td>Open Hole:</td>
<td></td>
</tr>
<tr>
<td>Length</td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td></td>
</tr>
</tbody>
</table>

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
Form 8810-1

STATE OF HAWAII
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT

REGISTRATION OF WELL AND DECLARATION OF WATER USE

INSTRUCTIONS: Please type or print. If information is not available or not applicable, indicate as N.A. Fill out as completely as possible, sign, and file form with the Division of Water Resource Management, P.O. Box 373, Honolulu, Hawaii 96806. Phone 548-3048 or 548-7545 for assistance.

BATTERY OF WELLS: For a battery of wells, on the surface, in a tunnel, or in a shaft, submit a registration form for each well together with a single map or plot plan showing layout of wells.

STATE OF HAWAII

| STATE WELL NO. | 4300-02 |
| WELL NAME OR DESIGNATION | Hamoa |
| ISLAND | Maui |

### A. WELL OPERATOR
Firm name: Dept. of Water Supply
Contact person: 
Address: P. O. Box 1109
Zip: 96793
Phone: 243-7730

### B. OWNER OF WELL SITE
Firm name: Hana Ranch
Contact person: 
Address: 
Zip: 
Phone: 

### C. WELL LOCATION
Tax Map Key: 4-6-09:2
Town, Place, District: Hamoa

Attach USGS "Quad" map (scale 1:24,000), tax map, or other map showing the well location.

### D. WELL DATA
For Drilled Wells, submit "as-built" drawing, driller's log, and pump test results, and complete items below. For Tunnels and Shafts, submit construction drawings, plot plan, or sketch map.

- **Ground elevation (mean sea level):** 350 ft.
- **Reference point (used to measure depth to water):**
  - Elevation: 350 ft.
  - Description: Ground Surface
- **Depth to water (below reference point):** 343 ft.
- **Maximum recorded chloride:** ppm
- **Minimum recorded chloride:** ppm
- **Maximum chloride in 1987:** ppm
- **Year drilled or constructed:** 
- **Well contractor:** reconnaissance

- **Casing diameter:** 14 in.
- **Solid casing depth (below ground):** 399 ft.
- **Perforated casing depth (below ground):** 399 ft.
- **Total depth of well:** 399 ft.
- **Minimum chloride in 1987:** ppm

### E. INSTALLED PUMP DATA
- **Pump type:** Vertical shaft
- **Power:** Diesel 40 HP
- **Pump capacity:** 200 gallons per minute
- **Pump installation contractor:** DNL Construction
- **Pump still under construction:**

(continued over)

For Official Use Only:

- **Date received:** 3-20-69
- **Date accepted:**
- **Field checked by:**
- **Date:**
- **Latitude:** 19° 50' 47"
- **Longitude:** 156° 00' 16"
- **Hydrologic Unit:**
- **State Well No.:** 4300-02

References: Hawaii Revised Statutes, Chapter 174C.
Hawaii Administrative Rules, Chapters 13-167 to 13-171.
**F. DECLARATION OF WATER USE**

**NOTE:** The purpose of the Declaration of Water Use is to obtain information necessary for the management of the State's water resources. The Declaration does not confer a legal right to water or its use.

Water use data are recorded:  
- Daily  
- Weekly  
- Monthly  
- Other (describe): 

Method of measurement:  
- Flow Meter  
- Orifice  
- Other (describe): 

Quantity of Use (Report metered or estimated monthly water use from the well described on the reverse side of this form, for the calendar years 1983 through 1987. For a battery of wells which are not individually metered, but which are connected to a single meter or other measuring device, report total use from the battery):

<table>
<thead>
<tr>
<th>WATER USE, IN GALLONS x 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
</tr>
<tr>
<td>March</td>
</tr>
<tr>
<td>April</td>
</tr>
<tr>
<td>May</td>
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<td>June</td>
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<td>July</td>
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<td>August</td>
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<td>September</td>
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<tr>
<td>October</td>
</tr>
<tr>
<td>November</td>
</tr>
<tr>
<td>December</td>
</tr>
<tr>
<td>ANNUAL</td>
</tr>
</tbody>
</table>

- Minimum day's use: ___________ gallons  
- Maximum day's use: ___________ gallons  
- Typical times of usage: ________________________

Type of Use (Check all category boxes that apply and provide additional information as indicated):

<table>
<thead>
<tr>
<th>Category</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal (including resorts,</td>
<td>Number of service</td>
</tr>
<tr>
<td>hotels, businesses)</td>
<td>connections:</td>
</tr>
<tr>
<td>Domestic (systems serving 25</td>
<td>Acres irrigated:</td>
</tr>
<tr>
<td>people or less)</td>
<td></td>
</tr>
<tr>
<td>Irrigation</td>
<td>Crop(s):</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Crop:</td>
<td>Landscape</td>
</tr>
<tr>
<td></td>
<td>Other (specify):</td>
</tr>
<tr>
<td>Method:</td>
<td>Drip</td>
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<tr>
<td></td>
<td>Cooling</td>
</tr>
<tr>
<td></td>
<td>Other (specify):</td>
</tr>
<tr>
<td></td>
<td>Specify (livestock, aquaculture, etc.):</td>
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</tr>
</tbody>
</table>

I declare that the contents of the above Declaration of Water Use are, to the best of my knowledge and belief, true, correct, and complete.

Water User's Signature: [Signature]  
Printed Name: [Printed Name]  
Date: [Date]

Firm or Title (Well Operator, etc.): Director of Department of Water Supply  
County of Maui
SECTION "A"

NOT TO SCALE
March 18, 1988

Mr. Manabu Tagomori, Manager-Chief Engineer
Division of Water & Land Development
State Department of Land & Natural Resources
P. O. Box 373
Honolulu, Hi 96809

Dear Mr. Tagomori:

Subject: GROUNDBREAKING CEREMONY - HAMOA WELL PROJECT

The Department of Water Supply has awarded the construction contract to DNL Construction, Inc., for the construction of the Hamoa Well Project in Hana. This project will provide adequate water of excellent quality for the residents of the Hana Community.

We cordially invite you to attend our groundbreaking ceremony scheduled on March 29, 1988, at 11:00 a.m., at the project site. A map showing the site of the groundbreaking ceremony is attached for your information.

We hope that you can join us on this occasion. If you have any questions, please feel free to contact me.

Sincerely,

[Signature]
Vince G. Bagoyo, Jr., Director

RSVP: March 25, 1988 - Phone Number 244-7816

"By Water All Things Find Life"
March 18, 1988

Mr. Manabu Tagomori, Manager-Chief Engineer
Division of Water & Land Development
State Department of Land & Natural Resources
P. O. Box 373
Honolulu, Hi 96809

Dear Mr. Tagomori:

Subject: GROUNDBREAKING CEREMONY - HAMOA WELL PROJECT

The Department of Water Supply has awarded the construction contract to ONL Construction, Inc., for the construction of the Hamoa Well Project in Hana. This project will provide adequate water of excellent quality for the residents of the Hana Community.

We cordially invite you to attend our groundbreaking ceremony scheduled on March 29, 1988, at 11:00 a.m., at the project site. A map showing the site of the groundbreaking ceremony is attached for your information.

We hope that you can join us on this occasion. If you have any questions, please feel free to contact me.

Sincerely,

Vince G. Bagoe, Jr., Director

RSVP: March 25, 1988 - Phone Number 244-7816
Dr. Bruce S. Anderson  
Deputy Director for Environmental Health  
Department of Health  
P.O. Box 3378  
Honolulu, Hawaii 96801

Dear Dr. Anderson:

Thank you for giving us the opportunity to review the Preliminary Engineering Report for the Hanoa Well No. 4300-02, Wailua-Hana Water System. We have no comments to offer.

Very truly yours,

WILLIAM W. PATY  
Chairperson of the Board
Mr. William W. Paty  
Chairman of the Board  
Dept. of Land and Natural Resources  
1151 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Mr. Paty:

SUBJECT: Preliminary Engineering Report for the Hamoa Well No. 4300-02, Wailua-Hana Water System

Transmitted herewith for your review and comments is a copy of the preliminary engineering report for the Hamoa Well No. 4300-02. This report has been prepared pursuant to Section 11-20-29, Chapter 20, Title 11, Administrative Rules, Potable Water Systems.

Your review and comments are solicited as your concerns, knowledge and expertise in this area may assist us in determining potential impacts which may result by the proposed project.

Your early attention and reply to this matter will be greatly appreciated. Please respond by November 16, 1987.

Please return the preliminary engineering report with your comments.

Sincerely,

BRUCE S. ANDERSON, PH.D.  
Deputy Director for Environmental Health

Enclosure
| Date | Manganese | Iron | Copper | Lead | Molybdenum | Manganese | Nickel | Silver | Zinc | Iodine | Chromium | Cadmium | Cobalt | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | 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Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | 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Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | Total | T
CONTRACT COMPLETION REPORT

1. Project

2. Location

3. Job No.

4. Contractor

5. Contract No.

6. Final Inspection Held on

7. Final Inspection Made By: MICHAIL K. OYAE

Name

Title

ENGINEERING TECH V

8. Final Inspection Report:

The general area around the well is clear and free of debris. The 11 inch steel casing is capped with a ¾ inch steel plate and a 1 inch coupling with crossplug was also installed for well access. (See attached photos) Contractor has completed all work in compliance to contract plans and specifications.

9. Computed Completion Date

10. Actual Completion Date

11. Receipt of Necessary Documents for Completion of Contract

<table>
<thead>
<tr>
<th>Document</th>
<th>Date of Receipt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Clearance</td>
<td></td>
</tr>
<tr>
<td>Clearance Certificate</td>
<td></td>
</tr>
<tr>
<td>Claims Affidavit</td>
<td></td>
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<tr>
<td>Bonding Company Clearance</td>
<td></td>
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<tr>
<td>Notice of Final Settlement Affidavit</td>
<td></td>
</tr>
<tr>
<td>Warranty</td>
<td></td>
</tr>
</tbody>
</table>

12. "As Built" Forwarded to User Agency


14. Letter of Dedication to User Agency

15. Report Prepared By

16. Checked by

Head Construction Engineer

17. Acceptance
    Recommended
    Chief Design and Construction Engineer

18. Accepted
    Manager-Chief Engineer

19. Accepted
WATER RESOURCES & FLOOD CONTROL TRANCH
Division of Water and Land Development

FROM: [Name]  DATE: [Date]  FILE IN: [File ID]

TO: INITIAL:

Please:
- See Me
- Call
- Review & Comment
- Take Action
- Investigate & Report
- Draft Reply
- Acknowledge Receipt
- Type Draft
- Type Final cc:
- Xerox copies
- File
- Mail

Remarks:
- HAMDA WELL 4300-02
- FINAL INSPECTION
- WATER LEVEL MEASUREMENT.

For your:
- Approval
- Signature
- Information

[Handwritten note: Can we get maps from Maui DWS showing well site boundaries and location of well? In DOC files注明 and B14(s).]
MEMO: TO THE RECORDS
FROM: M. OHYE
SUBJECT: FINAL INSPECTION AND WATER LEVEL MEASUREMENT
HAMOA WELL 4300-02, HANA, MAUI

On Friday January 10, 1986 I visited the subject well to conduct a final inspection of the well and to obtain a water level measurement. The general area around the well is clear and free of debris. The steel casing is capped with a .25 inch thick steel plate and a 6 inch coupling with cross plug was installed to provide access into the well (See attached photos).

At about 1030 hrs. a steel surveyor's tape was lowered into the well and the tape measured 353.00 ft. at the top of the 6 inch coupling and a wet line chalk mark was recorded at 2.60 ft.

The depth to water, therefore was 350.40 ft. below the top of the coupling (elevation 358.27 ft., msl as determined by the MAUI DWS survey crew). The static water level of the Hamoa Well was 7.87 ft., msl, on Jan. 10, 1986.

MITCHELL K. OHYE
HAMDA WELL 4300-02

STEEL CASING WITH 6' COUPLING AND CROSSPIV.

MAUI DWS SURVEY TEAM
JUNE 10, 1986

JOB#35-MW-39 (NOUI)
MEMORANDUM FOR THE RECORD

FROM: Mitchell K. Ohye

SUBJECT: T.V. Log Hamoa Well 4300-02, Hana, Maui

Present on the site were P. Wanke, T. Riddle, P. Mihlbauer of Roscoe Moss Co.

On November 20, 1985, I visited the Hamoa Well 4300-02 to witness a television log performed by Paul Wanke of Roscoe Moss Company. We used the camera lense as zero and top of casing as reference point.

Started logging at 1215 hrs. The solid cased section of the well is in good condition. The camera lense hit water at 348 ft.; water very cloudy, difficult to see. As best as I could determine, the slotted casing section began at 361 ft. in depth. At 394 ft., the camera lense hit what appeared to be some fine fill. The driller will bail hole and check the bottom which he says, should be at 406 ft. Television log ended at 1240 hrs.

MITCHELL OHYE

MO:ko
November 22, 1985

Mr. Stanley Kapustka
District Chief
U.S. Geological Survey
P.O. Box 50166
Honolulu, Hawaii 96850

Attention: Mr. John Yee

Dear Stan:

Water Sample, Hamoa (Hana) 4300-02

Transmitted under separate cover to Mr. John Yee of your office is a one-gallon water sample taken on November 8, 1985 from the Hamoa (Hana) Well 4300-02.

We would appreciate your running the usual chemical analyses and forwarding us a copy of the results as soon as they become available.

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

MO:ko
November 13, 1985

Mr. Vince Bagoyo, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui 96793-0343

Dear Mr. Bagoyo:

Hamoa Well 4300-02, Job No. 35-MW-39, Maui

We are pleased to inform you that the Hamoa exploratory well has been successfully completed. On November 4-8, 1985, the Hamoa well was pump tested at a sustained rate of 700 gallons per minute (one million gallons per day) for approximately 90 hours. The drawdown of water level ranged between 4.5 and 5.0 feet, and the chloride content of the water was 10 parts per million (250 parts per million is the upper limit for potable water). The water temperature was 19.0°C (66.2°F).

Based on the pumping test results, the well is capable of producing 700 gpm of potable water; however, the 11-inch diameter casing probably will physically limit the size of pump that can be desirably installed in the well to a capacity of about 500 gpm.

The drilling of the well was completed in October 1985 and the pertinent physical data include:

Ground elevation . . . . . . . 357+ feet
Depth to water . . . . . . . 350+ feet, below ground elev.
11" I.D. Solid Casing . . . . . . . . 0 to 366 feet depth
11" I.D. Screen Casing . . . . . . . 366 to 406 feet depth
Total depth of well . . . . . . . 406 feet (-49 ft., mean sea level)

The pump test and other data for the Hamoa well will be sent to you when it is assembled. In the meantime, if you or your staff have any questions please feel free to contact Dan Lum at 548-7643.

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

DL:dh
**HAMDA WELL 4300-2**

**PLUMBNESS AND ALIGNMENT.**

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>FOOTAGE</th>
<th>MAUKA</th>
<th>X</th>
<th>REMARKS</th>
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<tbody>
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<td>5.7</td>
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</tbody>
</table>

CHECK OUT:

|       |       | 6.5   |     | 5.75   |     |
HAMOA EXPLORATORY WELL 4300-02
PLUMBNESS AND ALIGNMENT TEST
NOVEMBER 19, 1985 HANA, MAUI

SUSPENSION POINT - 20 FT. ABOVE TOP OF CASING.

WIRE CAGE - B METAL RIBS 10% IN. DIA., 3 FT. LENGTH.

CASING DIA. - 11 IN. I.D

PRESENT ON SITE - PAUL WANKE, JIM RIDDLE, PETER MILLBAUER, OF ROSEDE MOSS COMPANY; MITCH HUYE - DONALD.

DUMMY: 40 FT. LENGTH
3 RING HUBS 10% IN. D.D

<table>
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<th>FROM</th>
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Oct. 1, 1985

MEMO: THE RECORDS

SUBJECT: HAMOA WELL 4300-02

FROM: H. OUME

On Sept. 30, 1985 I visited the Hamoa well 4300-02 in Hana, Maui to measure the static water level using a steel surveyor's tape. I was unable to read a net line mark because of water falling from the sides of the uncased well, therefore I could not determine a water level.

A water sample was obtained by means of a bailer and a 10 ppm chloride content was determined by lab analyses. The total depth of the well as of Sept. 30, 1985 is 381 ft. below ground. Water level measurement should be possible after well casing is installed.

Mitch
Driller's Report

Date of report: 12-10-85

Person filing report: Loran H. Runnells

WELL NAME: Hamoa (Hana)

State: Maui

GENERAL LOCATION: Hana

DRILLING COMPANY: Roscoe Moss Company

TYPE OF RIG: 28L

DRILLING COMPLETED: Nov. 85

DRILLER: L. Runnells

ELEVATION, msl: Top of drilling platform 357 ft. Bench mark and method used to determine.

Height of drilling platform above ground surface: 0 ft. elevation.

HOLE SIZE: 17 in. dia. to 406 ft. below drilling platform.

Casing installed: 11 in. I.D. x 312 in. wall solid section to 366 ft. below drilling platform.

Type of perforation: Louver

Gravel packed: 277 ft. to 406 ft. below drilling platform.

PERMANENT PUMP INSTALLATION:

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

HYDROLOGY

INITIAL WATER LEVEL: 350.5 ft. below drilling platform. Date of measurement.

INITIAL CHLORIDE: 10 ppm, total depth of well 407 ft. below drilling platform.

PUMPING TESTS:

Date: 11-04-85

Reference point (R.P.) used: ft. below R.P.

Start water level: 350.5 ft.

End water level: 406 ft.

Depth of well: 406 ft.

Elapsed Time (hours): 93

Rate (gpm): 700

Draw-down (ft.): 565

Cl- (ppm): 10

Temp. F: to

Sampling Date: to

DRILLER'S LOG:

Rock Description & Remarks

Water Level

0 to 15 ft.: Boulders

15 to 35 ft.: Black rock

35 to 55 ft.: Cinders

55 to 88 ft.: Porous rock

88 to 92 ft.: Hard rock

92 to 113 ft.: Porous rock

115 to 132 ft.: Cinders

132 to 142 ft.: Hard rock

148 to 160 ft.: Hard rock

160 to 194 ft.: Med. hard rock

Water Level

Depth, ft.: 194 to 200

Depth, ft.: 200 to 244

Depth, ft.: 244 to 265

Depth, ft.: 265 to 278

Depth, ft.: 278 to 330

Depth, ft.: 350 to 363

Depth, ft.: 363 to 381

Depth, ft.: 381 to 405

Depth, ft.: 405 to 407

Rock Description & Remarks: Cinders

Med. hard rock

Red cinder

Hard rock

Porous rock

Gray muddy rock

Porous rock

Red cinder

Hard rock

Hard rock

N. REMARKS:

FOR OFFICIAL USE

Latitude: 20° 43° 22'

Longitude: 156° 00'

Well No.: 4300-02

FOR DRILLER'S USE

Job Name: 

Job No.: 

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

HAMOA EXPLORATORY WELL 4300-02, MAUI

Ground Elevation - - - - - - - - - - 357.18 ft. msl
Top of Casing - - - - - - - - - - 358.27 ft. msl
Casing Size - - - - - - - - - - - - - - - 11 I.D. inches
Blank Casing Depth - - - - - - - - - - 366 ft. (- 9 ft. msl)
Shutter Screen Depth - - - - - - - - - - 406 ft. (- 49 ft. msl)
Total Depth of Well - - - - - - - - - - 406 ft. (- 49 ft. msl)
Static Water Level - - - - - - - - - - 350 ft. (+ 7.9 ft. msl)
Bottom of Airline - - - - - - - - - - 370 ft. (- 13 ft. msl)
Test Conducted by - - - - - - - - - - - - - - - - - M. OHYE

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**TEST NO. 1**

1100 0 19.45
1115 0 19.45 (STATIC)

**ADJUST TO 200 GPM**

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(RECOVERY TEST)

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(END RECOVERY)
CHLORIDE TITRATION RECORD
for
MAU  Island  35-MW-39  Project or Job No.  Nov. 4 1985

Titrations conducted by  M. Duyf

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CHLORIDE TITRATION RECORD
for
HAMOA Well 4300-02
(MAU) Island 35-MW-39 Project or Job No. 19

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HAMOA WELL 4300-01
STEP-DRAWDOWN TEST
NOVEMBER 4 1986
Q = 100, 400, 1000, 2000
MAUI, MAUI

GALLONS PER MINUTE (GPM) X 100
HAMOA WELL 4300-02

AS-BUILT SECTION

Driller: ROSCOE MOSS COMPANY
Drilled: OCTOBER 1985

NICKLE 358.27 FT. MSL - TOP OF CASING

43-220 GRAVEL
220-325 CEMENT
325-406 GRAVEL

7.87 FT. ABOVE MSL
STATIC WATER LEVEL ON 1-10-86 (STEEL TAPE)

- 49 FT. MSL
BOTTOM OF WELL

NOT TO SCALE
SWL = 6.45

11-4-85 AIRLINE METHOD (1100 LBS)

200 GPM

400 GPM

600 GPM

800 GPM

ADJUSTING RATE

HAMCA WELL 430002

PUMP TEST 

NOV 4-8 1985

Q = 200 GPM

400

600

800

SUSTAINED = 700 GPM

DRAWN IN FEET
July 22, 1985

Mr. Manabu Tagomori  
Manager-Engineer  
Division of Water & Land Development  
State Dept. of Land & Natural Resources  
P. O. Box 373  
Honolulu, Hi 96803

Dear Mr. Tagomori:

Subject: **Hamoa Well**

The purpose of this letter is to request your assistance in providing us with a progress report on the proposed Hamoa Well.

Again, we are very grateful and appreciative of your continued cooperation and assistance to Maui concerning water source development. Should you have any question, please call me.

Sincerely,

Vince G. Bagoyo, Jr., Director

VGB/ao
July 26, 1985

Mr. Vince Bagoyo, Director
Department of Water Supply
County of Maui
P.O. Box 1109
Wailuku, Maui 96793-0343

Dear Mr. Bagoyo:

Progress Report, Hamoa Well, Maui

Thank you for your letter of July 22, 1985 requesting a report on the progress of our project, the drilling Hamoa Well 4300-02.

As of July 22nd, the contractor, Roscoe Moss Co., has completed 200 feet of drilling (44 percent of the contract total depth of 450 feet). The drilling of the well has been slow due to problems with equipment and difficulties in drilling the hard rock formations encountered.

Based on a ground elevation of 357 feet, the basal groundwater lens will not be reached until another 150 feet of drilling (350 feet total) has been completed. The contractor has 175 calendar days remaining to complete the well as specified in the contract, which should be ample time.

If you or members of your staff have any questions during the progress of the Hamoa well drilling project, please feel free to call on me; geologist, Dan Lum, at 548-7643; or Engineering Technician, Mitchell Ohye, at 548-7466.

Sincerely,

[Signature]
MANABU TAGOMORI
Manager-Chief Engineer

DL:dh
## DELIVERY RECEIPT

**Hawaiian Cargo Expediters**

**Roscoe Moss Company**

**MAUI, HI**

**Roscoe Moss Company**

4300 Worth St
Los Angeles, Calif. 90063

**SHIPPER**

**BILL TO:** Roscoe Moss Co., B30 Ahua, HNL, HI 96819

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<td>2 pc No. 11” 10 x 5/16” WALL SLOT PERFORATED CASING 3/16” OPENING ENDS BEVELED W/1-11” AUX 3/4” WILD STEEL SHOE ATTACHED ONE SLOTTED PC 18 pcs 360° 11” 10 x 5/16” WALL, BLANK STEEL PIPE ENDS BEVELED</td>
<td>16000</td>
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<td>79.00</td>
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**Shipped on:** 5/16/65

**Delivered on:** 5/16/65

**ICC & P.U.C. Regulations require payment of freight bills within 7 days of presentation.**

**Delivered the above described property in good condition except as noted.**

**Delivered by:**

**X**

**REMITTANCE ADDRESSES**

Mainland Customers: Hawaiian Cargo Expediters

Box 7250
Los Angeles, CA 90022

Hawaii Customers: Hawaiian Cargo Expediters

P.O. Box 30402
Honolulu, HI 96820

(213) 853-4110

(800) 338-2108

**SHIPPERS:**

**Vessel and Voyage:**

**Kalai** 117

**Container No.:**

**KALAI 117**

**Freight Bill Number:**

**WEY 16211**

**Date:** 5/16/65

**Place of Receipt:**

**Los Angeles, Calif. 90063**
WELL DRILLING PERMIT

for

State Well No. 4300-02
Hamoa Exploratory Well
Hamoa, Maui

TO: Division of Water and Land Development
P.O. Box 373
Honolulu, Hawaii 96809

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii," your application to drill Hamoa Exploratory Well, State Well No. 4300-02, is approved subject to compliance with all applicable rules, ordinances, and laws.

Date of Issuance

6/11/84

cc: USGS
Dept. of Health
Maui DWS

SUSUMU ONO
Chairperson of the Board
APPLICATION FOR (check one)

☒ WELL DRILLING PERMIT  ☐ WELL MODIFICATION PERMIT

Instructions: Send completed application and attachments to Department of Land and Natural Resources, P.O. Box 373, Honolulu, Hawaii 96809.
Reference: Regulation 9, Dept. of Land & Natural Resources.

Is the well located in a Designated Ground Water Control Area?  Yes ☒  No ☐
If "yes", application must be accompanied by a Water Use and/or Water Supply Permit and a non-refundable filing fee of $100 payable to the Department of Land & Natural Resources. However, if application is for minor modification of well, filing fee may be waived. If "no", no filing fee is required. Filing fee is waived for federal, state, and county government agencies.

1. WELL LOCATION: Island Maui Tax Map Key 1-4-09:2. Attach a plot plan showing well location referenced to established property boundaries.

2. WATER USER Maui County Dept. of Water Supply Telephone
   Address P.O. Box 1109 Wailuku, Maui Zip Code 96793

3. PROPOSED DRILLING COMPANY:

4. PROPOSED WORK: ☒ Drill new well  ☐ Deepen  ☐ Redrill  ☐ Alter  ☐ Seal
   ☐ Abandon  ☐ Install new pump  ☐ Replace pump  ☐ Modify pump
   
   Fill in the diagram and briefly describe the proposed work (use back of form if necessary):

   *Drill, case and test an exploratory well above the community of Hano approximately 3,000 feet mauka of the Hano Highway*

5. PROPOSED USE: ☒ Municipal  ☐ Military  ☐ Agriculture  ☐ Industrial
   ☐ Domestic  ☐ Disposal  ☐ Other (specify)

6. PROPOSED AMOUNT OF WITHDRAWAL: Check most appropriate box and fill in amount.
   ☐ Daily gallons
   ☐ Monthly gallons  ☐ Yearly gallons

7. PROPOSED PUMP OR FLOW CAPACITY: 350 gallons per minute

Signature: Water User

Signature: Landowner of Well Site

For Official Use:
State Well No. M100-01
DLNR Permit No.
DLNR Application No. M-16
Field Trip
4-19-83
Carl, Herman Roland
spot el. set at 137'
RW table elev. 2.5 1/2 (altimeter)
4" = 294' ±
Makai Ft. of Mango tree 323' ±
Clara Well site 340' ±
tank site moka 3 well site and adjacent
May 1, 1984

Mr. John I. Hanchett, Vice President
Hana Ranch, Inc.
P. O. Box 158
Hana, Hi 96713

Dear John:

Subject: Hamoa (Hana) Exploratory Well

Thank you for your telephone call yesterday indicating that my letter dated April 27, 1984 has taken care of most of your concerns.

In response to your two additional questions:

1. Enclosed is another set of the maps showing the metes and bounds of the proposed subject well site, the same as those included with my March 28, 1984 letter on the same subject. I agree that at least one of these maps should be included as an exhibit with the Right of Entry and Option to Purchase Agreement.

2. If it is your requirement that the electrical connection to the site be underground, we will go along with it. However, this would increase the problems, stated in Item 9 of my April 27, 1984 letter, with the County's agreeing to a one-time relocation of the access easement at County's expense.

Please call me if you have any other questions.

Sincerely,

William S. Haines, Director

cc: Mayor Tavares
Robert Chuck, Manager-Engineer, DOWALD
Gordon Okazaki, DWS Deputy Director
Carl Kaiuma & David Victor, DWS Engr.
April 8, 1984

MEMORANDUM FOR THE RECORD

FROM: Stephen Miyamoto

SUBJECT: Job No. 35-MW-39, Drilling Hamoa (Hana) Well (4300-02), Hana, Maui, Hawaii

A meeting to discuss the location of the access road and to verify the well location for the subject project was held at the job site in Hana, Maui, on April 3, 1985, 11:00 a.m. Present were the following:

Miles Fujinaka, Jerry Lono - Maui County DWS
L. Runnells, Tracy Runnells - Roscoe Moss Co.
Stephen Miyamoto - DOWALD

Mr. John Hanchett of Hana Ranch was unable to accompany the group to the well site. He stated that an agreement had already been reached between the Hana Ranch and the contractor on the location of the access road to the site. Mr. Runnells later indicated that Hana Ranch would construct the access road for Roscoe Moss Company.

The group traveled up the proposed access road and the well location was verified. Mr. Runnells stated that he would contact Mr. Fujinaka later to obtain a construction water meter.

STEPHEN MIYAMOTO

cc: Maui DWS
Roscoe Moss Company
Hana Ranch
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<td>Robert T. Chuck</td>
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<td>Takeo Fujii</td>
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<td>James Yoshimoto</td>
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<td>Manabu Tagomori</td>
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From: JCA  Date: 8/8/83  File In:

- Take action by
- Route to your branch
- Review & comment
- Draft reply by
- For information
- Xerox distributed
- Acknowledge receipt
- File

- Jane Sakai
- Doris Hamada
- Lorraine Nanbu
- Jean Starot
- Else Yonamino
- Kay Oshiro

Note: 
- Hama will report for
  Hama will report for
- Hama will report for
- Hana will report for
- Hana will report for

Line target for
Billy Smith
March 3, 1983

Mr. Robert T. Chuck, Manager-Chief Engineer
Division of Water & Land Development
State Land & Natural Resources
P. O. Box 373
Honolulu, Hi 96809

Dear Bob:

Subject: EXPLORATORY WELL DRILLING IN HANA

In response to our discussion this morning, I am enclosing copies of portions of Sam O. Hirota, Inc., SDWA compliance study report for the Wailua-Hana area. Related to their proposed wells in the Hamoa area.

These include: (1) Pages VII-3 & 4 regarding their proposed Hamoa Well field; (2) Figure VIII-1, "Alternate Treatment Plant Sites" which shows the proposed location of the Hamoa Wells, described as "Alternative One Hamoa Wells"; and (3) Figure VIII-15, "Alternative Three-A Hamoa Back-Up Well".

Actually they are recommending Alternative 3-A, which includes slow-sand filters near the Wailua source plus back-up wells at Hamoa. I included Figure VIII-1 because it is a more illustrative contour map and location of "Alternate One Hamoa Wells" is the same as the proposed Hamoa back-up wells included in their proposed Alternate 3-A.

Do not hesitate to give me a call if you need any more information.

Sincerely,

William S. Haines

Enc.

"By Water All Things Find Life"
10. The Wakiu Wells have exceeded the maximum contaminant levels for corrosivity, sodium, microbiology, chloride and total dissolved solids, see Table V-5. With the exception of corrosivity and microbiology treatment processes per-se are not believed to be required to reduce the contaminant levels at the wells. Revised management procedures for the source, such as reduced pumping rates, may reduce these contaminants to acceptable levels.

11. Additional streams for surface water sources are available south of Wailua Stream. At least two of these streams would have to be developed to provide the additional year 2000 water demand. The development of these additional streams is considered to have a serious environmental impact as they have been rated as category I (pristine-preservation) or category II (limited consumptive) by the U.S. Fish and Wildlife Service and are protected as part of the coastal ecosystem under the coastal zone management (CZM) program.

12. Groundwater development by drilled wells has some elements of risk but has a high potential for success in the Hana area see Appendix B.

B. AVAILABLE ALTERNATIVE SOURCES

The alternative solutions available for providing drinking water in conformance with the Safe Drinking Water Act and creating a complete water system will be made up from a combination of the different water sources available to the Wailua-Hana Water System.

Four water sources have been identified as available to the Wailua-Hana Water System: (1) The proposed Hamoa well field, (2) The existing Wailua Stream source, (3) The existing Wakiu well field, and (4) other additional sources.

This section will examine each of the available water sources separately to determine the preliminary feasibility of applicable treatment processes or techniques and alternative facilities sizing available to that source.

1. The Proposed Hamoa Well Field
Additional sources must be developed to supplement or replace the existing source at Wailua Stream. The layout of the existing water system and the location of the water demand suggest that the new source be located in the Hamoa area. Hamoa is central to the area of water demand and is midway between the existing sources of supply, providing efficiencies and flexibility for the system operation. The Hamoa site is also good from a hydrogeologic standpoint because it offers an opportunity to maintain the maximum distance from the shoreline (7,000 feet) to reduce the probability of seawater intrusion with the minimum drilling depth to basal water (250 feet). The site shown is only an approximate location, the exact drilling site should be selected based upon a detailed field geologic study by a groundwater geologist familiar with the geology of Pacific Islands. The geologic study would require only one or two days work and would insure that the drilling site is at the most promising location by field verifying geologic conditions.

The Hamoa Well(s) should be drilled at a size sufficient for a minimum 10-inch diameter casing. The depth of the hole should be determined based upon the materials encountered during the drilling and the water table head, but should be a minimum of ten feet below the water table. The pumping test should extend for a period of 120 hours with regular measurements of draw down, chloride level, sodium level and specific conductance.

The well(s) will pump to a new storage reservoir with a 150,000 gallon capacity. The capacity was selected on the basis of maximum daily flow of the service area which extends from Hamoa to Koali.

The recommended site for the reservoir at elevation 350 feet is at the optimum height required to provide water pressures in the range 110 to 40 pounds per square inch to the Hamoa to Haou service area. The pumping lift for the wells is minimized and only a portion of Hamoa will require a pressure reducing valve to keep the static pressure below 110 pounds per square inch.

2. The Existing Wailua Stream Source
   a. General
The water from the Wailua Stream has exceeded the maximum contaminant levels for corrosivity, turbidity, color, iron and odor. Treatment is required to bring this water into compliance with federal and state laws.

No treatment for corrosivity is recommended at this time for the reasons discussed in Chapter V.

Bench scale filtration tests of water from the Wailua Stream have been performed (see Appendix D). The results of that testing program are summarized as follows:

1) Conventional Rapid Sand Filtration
   a) Chemical pre-treatment for Wailua Stream water under dry weather conditions (<10NTU) may be achieved by fairly low doses (4 mg/l) of alum alone as the primary coagulant.
   
   b) Chemical pretreatment for Wailua Stream water under wet weather conditions (>10NTU) may be achieved by alum in combination with a secondary polymer. Doses of 4 mg/l of alum and 0.5 mg/l of chitosan were optimal in the tests conducted for this study. However alum in combination with other commercially available polymers will also adequately treat high turbidity Wailua Stream water.
   
   c) The optimal filtration rate in this study was five gallons per minute per square foot. Slightly higher rates will also provide adequate turbidity removal.

2) Slow Sand Filtration
   a) A slow sand filter will provide acceptable product water under dry weather conditions (<10NTU).
   
   b) Under wet weather conditions (>10NTU) the slow sand filters become less efficient and may require the use of a high level turbidity meter and shut off valve. Turbidity levels greater than 10
PROJECT AREA

ISLAND OF MAUI

SCALE IN MILE

NORTH
Mr. Susumu Ono  
Chairman of the Board  
Dept. of Land and Natural Resources  
1151 Punchbowl Street  
Honolulu, Hawaii  96813

Dear Mr. Ono:

Subject: Hamoa Exploratory Well

The Drinking Water Staff of the Department of Health has reviewed the well drilling permit for the Hamoa Exploratory Well, State Well No. 4300-02, Hamoa, Maui. We would like to take this opportunity to offer the following information with respect to use of the well for potable purposes.

Please be advised that the decision to use this well or other new sources as a source of potable water will require compliance with Section 11-20-29, Chapter 20, Title 11, Administrative Rules. This section requires Department of Health approval of all new potable water sources serving public water systems. Such approval is based upon the submission of an engineering report satisfactorily addressing all concerns set down in Section 11-20-29, Chapter 20, Title 11, Administrative Rules.

As you may know, concerns for well sources identified in Section 11-20-29 of Chapter 20, Title 11, include but are not limited to:

1. Nature of the soil and stratum overlaying the water source;

2. Nature, distance, direction of flow and time of travel of contaminants from present and projected domestic, industrial and agricultural sources of pollution, and waste injection wells and other waste disposal facilities;

3. Probability and effect of surface drainage or contaminated underground water entering the subject water source;


Your careful review of these and other concerns as set down in Section 11-20-29, Chapter 20 is urged. Your consideration and use of this information in the determination of sites for wells of this nature will serve to avoid possible conflicts in use of resources.
Should you have any questions concerning Chapter 20, Title 11, Administrative Rules, please feel free to contact the Drinking Water Program at 548-2235.

Sincerely,

[Signature]

CHARLES G. CLARK
Director of Health