MEMO and ROUTE SLIP

WCR 1 Check for Well No. 5723-01 to 03 (survey to regulation memo)

1. **Pump Tests Check**  Glenn Bauer (initial)  
   
<table>
<thead>
<tr>
<th>Step-Drawdown Test:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>followed WCPI Stds</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>analysis attached</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>proposed pump cap o.k.</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

   **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:**  
   ☐ ☐ ← If yes, identify most probable stream

2. **Construction Check**  Mitch Ohye (initial)   
   
<table>
<thead>
<tr>
<th>Construction Check</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>data complete</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>followed WCPI Stds</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>well database updated</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

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

ATTACHMENTS FOR PUMP INSTALLATION PERMIT:  
1 COVER LETTER  
2 PERMIT (2x)  
3 DOH COMMENTS  
4 LAND DIV. COMMENTS  
5 WCR 2 FORM  
6 WUR FORM  

4. Roy (initial) check  
5. Kathy (initial) finalize  
6. Linnel (initial) signature  
7. Charley/Lenore/Ryan File
Mr. Troy Tanigawa  
County of Kauai  
Department of Public Works  
4444 Rice Street  
Lihue, HI 96766

Dear Mr. Tanigawa:

Well Completion Report for Well No. 5723-01 to 03

We received your Well Completion Report Part I for the MW-1 to -3 (Well No. 5723-01 to 03) on October 30, 2001 and acknowledge that it is complete. Thank you for your attention to this matter.

If you have any questions, please contact Lenore Nakama of the Commission staff at 587-0218 or toll-free at 274-3141, extension 70218.

Sincerely,

LINNEL T. NISHIOKA  
Deputy Director

LN:ky  
c. Mike Furukawa, Grove Farm
TO: Ms. Linnel T. Nishioka, Deputy Director  
Commission on Water Resource Management  
Department of Land and Natural Resources  
P.O. Box 621  
Honolulu, HI 96809

ATTN: Mr. Ryan R. Imata  
DATE: October 29, 2001

RE: Well Completion Reports  
Puhi Metals Recycling Center

PROJECT NUMBER:

WE ARE SENDING YOU:  
ATTACHED UNDER SEPARATE COVER VIA

SHOP DRAWINGS DOCUMENTS TRACINGS
PRINTS SPECIFICATIONS CATALOGS
COPY OF LETTER OTHER:

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>1 copy</td>
<td>Original Well Completion Reports for Monitoring Wells No. 1, 2 and 3</td>
</tr>
<tr>
<td>2 copies</td>
<td>Well Completion Reports for Monitoring Wells No. 1, 2 and 3</td>
</tr>
</tbody>
</table>

IF MATERIAL RECEIVED IS NOT AS LISTED, PLEASE NOTIFY US AT ONCE

REMARKS:

Submitting above referenced reports for your review and files. If you have any questions, please feel free to call me at 521-3051.

COPY TO: Troy Tanigawa (COK) & File

1001 Bishop Street  
Suite 500, Pauahi Tower  
Honolulu, HI 96813  
Voice: 808-521-3051  
Fax: 808-524-0246
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrm/

1. State Well No.: 5723-01
   Well Name: MW-1
   Island: Kauai

2. Address: 3951 Puhi Road, Lihue, Kauai, HI 96766
   Tax Map Key: 3-3-2:1

3. Drilling Company: Geolabs, Inc.

4. Drilling method used during construction: ☐ Rotary ☐ Percussion ☐ Other (describe)

5. Date Well Construction (drilled, cased, grouted) completed: 5/17/01
   Attach Driller's Log (7/26/99 DL Form)

   In addition to the driller's log, if a geologic log was prepared, please submit with this form.

6. Was the subject well cored? ☐ Yes ☒ No

7. Initial water-level encountered 32.3 ft. below ground Date and time of measurement: 5/16/01 11:00am
   month/day/year time

8. Step-Drawdown Test completed? ☐ No ☐ Yes Attach Step-Drawdown Test form (12/17/97 SDPTD Form)

9. Constant Rate Aquifer Test completed? ☐ No ☐ Yes Attach Constant Rate Aquifer Test form (12/17/97 CRPTD Form)

Parameters prior to pump test:

10. Water-level: N/A ft. above msl Date and time of measurement: N/A
    month/day/year time

11. Chloride: N/A ppm Date and time of sampling: N/A
    month/day/year time

12. Temperature: N/A °F Date and time of measurement: N/A
    month/day/year time

13. Fill in the as-built section on the other side of this sheet. (See Attached Figure)


15. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)


---

Licensed Driller (print) GEOLABS INC.
Signature

Surveyor (print) PORTUAL SURVEYING & MAPPING
Signature

Permittee (print) CESAR C. PORTUGAL
Signature

C-S7 Lic. No. 13040
Date 8/23/01

L.P.L.S. Lic. No. 9033
Date 10/19/01

Date 10/22/01
**Location of Boring:** MW-1

**Work Order:** G648-00

**Client:** M. E. Pacific

**Location:** Kawai

**Drilling Method:** Auger/Air

**Boring No.:** MW-1

**Hammer Wt.:** Drop

**Sheet:** 1 of 4

**Sampling Method:** Drilling

**Gravel/Cuttings:**

<table>
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<tr>
<th>Elevation</th>
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</tr>
<tr>
<td>1</td>
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<td>8</td>
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<tr>
<td>9</td>
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<tr>
<td>10</td>
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**Core Recovery:**

<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Sample Number</th>
<th>Sample Depth</th>
<th>Blows</th>
<th>Number of Rings</th>
<th>Depth in Feet</th>
<th>USCS Code</th>
</tr>
</thead>
<tbody>
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<td>Core</td>
<td>1</td>
<td>0-10</td>
<td></td>
<td>0</td>
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<td></td>
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<td>Core</td>
<td>2</td>
<td>10-20</td>
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<td>0</td>
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<td></td>
</tr>
</tbody>
</table>

**Surface Conditions:**

- Reddish brown silty clay
- Moist
- Medium to stiff

**Drilling Details:**

- **Water Level:** 35-4, 35-1, 35-1, 35-4
- **Time:** 10:14, 2:04, 12:50, 1:30
- **Date:** 5/15/01 - 5/16/01 - 5/16/01 - 5/16/01
- **Casing Depth:** 2.0, 11, 14, 20
- **Date:** 5/16/01 - 5/16/01

**By:**

**Date:** JUN 15 '01 07:03
<table>
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<th>ELEVATION</th>
<th>CORE</th>
<th>RECOVERY</th>
<th>SAMPLE</th>
<th>TYPE</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE DEPTH</th>
<th>BLOWS</th>
<th>NUMBER OF RINGS</th>
<th>DEPTH IN FEET</th>
<th>USES CODE</th>
<th>SURFACE CONDITIONS:</th>
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<td>Light brown silty clay</td>
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<td>(moist/medium stiff)</td>
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</table>

Light brown silty clay

(Case 1)
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<th>ELEVATION</th>
<th>SURFACE CONDITIONS:</th>
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<tbody>
<tr>
<td></td>
<td>Light brown clayey silt, some fine sand (Saturated) (Sat.)</td>
</tr>
<tr>
<td></td>
<td>Light brown clayey silt, silt, some fine sand (Medium) (Sat.)</td>
</tr>
</tbody>
</table>

- **Core Recovery**: 25% recovery in sample 5
- **Sample Type**: Soil
- **Sample Number**: 5
- **Sample Depth**: 1.50 ft
- **Blows**: 40
- **Number of Rings**: 3
- **Depth in Feet**: 1.50
- **Uses (Cased)**: N/A

**Location of Boring**: MW-1
**Work Order**: 44648-00
**Client**: M&I Pacific
**Location**: Kaneohe

**Drilling Method**: Auger/Air
**Hammer Wt.**: 3 of 4
**Sampling Method**: Drop
**Drilling Method**: GRAD/CUTTINGS

**Date**: 07/01
**Date**: 07/01
**Time**: 8:30 AM 10:00 AM
**Time**: 10:00 AM 12:00 PM

**Geolabs, Inc.**
<table>
<thead>
<tr>
<th>ELEVATION</th>
<th>SAMPLE TYPE</th>
<th>SAMPLE NUMBER</th>
<th>SAMPLE DEPTH</th>
<th>BLOWS</th>
<th>NUMBER OF RINGS</th>
<th>DEPTH IN FEET</th>
<th>USCS CODE</th>
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</tr>
</tbody>
</table>

**Surface Conditions:**
- Fine sand, clayey silt, some fine gravel, medium dense

**Work Order:** WO-1

**Location:** 806 847 1749 PAGE 07

**Drilling Contr.:** MOBILE B-90

**Client Projects Fabric Location:**

**Dropped:**

**Date:**
- Start: 10/20/XX
- Finish: 11/XX

** Hammer:**
- Water Level
- Grizzly/curtains
- Drop

**Assay/Analysis:**
- Date: 8/XX

**Casing Depth:**

<table>
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<tr>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

**Core Recovery:**

- Depth 0-3

**Date:**

**By:** 7/5/XX

**Date:**

- Date: 7/5/XX

**Location:** 806 847 1749 PAGE 07

**Drilling Contr.:** MOBILE B-90

**Client Projects Fabric Location:**

**Dropped:**

**Date:**
- Start: 10/20/XX
- Finish: 11/XX

** Hammer:**
- Water Level
- Grizzly/curtains
- Drop

**Assay/Analysis:**
- Date: 8/XX

**Casing Depth:**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX</td>
<td>XX</td>
</tr>
</tbody>
</table>

**Core Recovery:**

- Depth 0-3
Groundwater Monitoring Wells

<table>
<thead>
<tr>
<th>Point</th>
<th>North</th>
<th>East</th>
<th>Elev</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>-13990.0256</td>
<td>13707.9707</td>
<td>272.80 MW #1</td>
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<tr>
<td>2</td>
<td>-14250.8083</td>
<td>14033.6464</td>
<td>266.01 MW #2</td>
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</tr>
<tr>
<td>3</td>
<td>-14643.1097</td>
<td>14055.7113</td>
<td>260.50 MW #3</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

A) Coordinates are referred to Government Triangulation Station "Kilohana".
B) Horizontal and Vertical Data are referred from Puhi Industrial Park Constructional Plans.
C) Coordinates on the Monitoring Wells are on the center point of 4" Pipe and Elevations are on the "Box Cut" on the concrete slab next to the Pipe.
**State of Hawaii**  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources  

**WELL COMPLETION REPORT - PART I**  
Well Construction

**Instructions:** Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-2225. For updates to this form or additional information, please visit our website at [http://www.state.hi.us/dlnr/cwrm/](http://www.state.hi.us/dlnr/cwrm/)

<p>| | | | |</p>
<table>
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<tr>
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</thead>
<tbody>
<tr>
<td><strong>1. State Well No.:</strong></td>
<td>5723-02</td>
<td><strong>Well Name:</strong></td>
<td>MW-2</td>
</tr>
<tr>
<td><strong>2. Address:</strong></td>
<td>3951 Puhi Road, Lihue, Kauai, HI 96766</td>
<td><strong>Tax Map Key:</strong></td>
<td>3-3-2:1</td>
</tr>
<tr>
<td><strong>3. Drilling Company:</strong></td>
<td>Geolabs, Inc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>4. Drilling method used during construction:</strong></td>
<td>Rotary</td>
<td>Percussion</td>
<td>Other (describe)</td>
</tr>
<tr>
<td><strong>5. Date Well Construction (drilled,cased,grouted) completed:</strong></td>
<td>5/17/01</td>
<td>Attach Driller's Log (7/26/99 DL Form)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In addition to the driller's log, if a geologic log was prepared, please submit with this form.</td>
<td></td>
</tr>
<tr>
<td><strong>6. Was the subject well cored?</strong></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>7. Initial water-level encountered</strong></td>
<td>32.3 ft. below ground</td>
<td>Date and time of measurement:</td>
<td>5/16/01 11:00am</td>
</tr>
<tr>
<td><strong>8. Step-Drawdown Test completed?</strong></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>9. Constant Rate Aquifer Test completed?</strong></td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Parameters prior to pump test:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>10. Water-level:</strong></td>
<td>N/A</td>
<td>Date and time of measurement:</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>11. Chloride:</strong></td>
<td>N/A</td>
<td>Date and time of sampling:</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>12. Temperature:</strong></td>
<td>N/A</td>
<td>Date and time of measurement:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

13. Fill in the as-built section on the other side of this sheet. (See Attached Figure)


15. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)


---

**Licensed Driller (print):** GEOLABS INC.  
C-57 Lic. No. 13040  
Signature: [Signature]  
Date: 8/23/01

**Surveyor (print):** PORTUGAL SURVEYING, MAPPING INCL. P.L.S.  
Lic. No. 9033  
Signature: [Signature]  
Date: 10/19/01

**Permittee (print):** CESAR C. PORTUGAL  
COUNTY ENGINEER  
Signature: [Signature]  
Date: 10/22/01
8" LOCKABLE WELL COVER

Casing Top EL = 268.11*

BENCHMARK EL = 266.01

Ground EL = 265.57

3'x3' CONC PAD

CEMENT GROUT

20' - 4" DIA
SCH 80 PVC
SOLID CASING
W/T = 0.34"
BTM EL = 248.11

BENTONITE SEAL

WSEL = 237.00

3" ANNULAR SPACE

50' - 4" DIA
SCH 80 PVC SCREEN
W/T = 0.34"
0.020 SLOT

FILTER SAND

10" DIA BOREHOLE
TOTAL DEPTH=84'

Casing BTM EL = 198.11

BENTONITE CHIPS

*ALL ELEVATIONS SHOWN IN FT. MSL

PMRC LIHUE, KAUAI
MW-2
STATE WELL ID: 5723-02
TMK: 3-3-2:1

SCALE: NTS
<table>
<thead>
<tr>
<th>Location of Boring</th>
<th>Work Order</th>
<th>Client</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW-2</td>
<td>4648-00</td>
<td>M &amp; E Pacific</td>
<td>Kauai</td>
</tr>
</tbody>
</table>

**Drilling Method**

- Auger/Air

**Hammer Wt.**

- Drop

**Sampling Method**

- Grab/cutting

**Gravel/flushing**

- Water Level: 29.6, 29.5, 26.2, 21.4
- Time: 7:10 AM, 7:48 AM, 1:47 PM
- Date: 05/10/01, 05/11/01
- Casing Depth: 21.5', 21', 21', 21'

**Surface Conditions:**

- Cutting
- Reddish brown silty clay (consist) medium stiff
- Cutting
- Light brown silty clay
- Medium stiff
<table>
<thead>
<tr>
<th>ELEVATION</th>
<th>SURFACE CONDITIONS:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LIGHT BROWN SILTY CLAY</td>
</tr>
<tr>
<td></td>
<td>MOIST - SOFT</td>
</tr>
<tr>
<td>20</td>
<td>LIGHT BROWN SILTY CLAY</td>
</tr>
<tr>
<td>21</td>
<td>MOIST - SOFT</td>
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<tr>
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<td>LIGHT BROWN SILTY CLAY</td>
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**WORK ORDER**
4645-00

**CLIENT**
McE Pacific

**LOCATION**
1N. W. 2

**DRILLING METHOD**
Auger/Air

**HAMMER WT.**
DROP 2 OF 4

**SAMPLING METHOD**
Drilling

**WATER LEVEL**

**TIME**

**DATE**

**CASING DEPTH**

**ELEVATION**

**USEGS CODE**

**SURFACE CONDITIONS:**

**DATE**

---

**GEOLABS, INC.**

---

**JUN 15 '01 07:04**

---

**PAGE 09**

---

**888 847 1749**
<table>
<thead>
<tr>
<th>ELEVATION</th>
<th>HAMMER WT.</th>
<th>SHEET</th>
<th>DROPS</th>
<th>BORING NO.</th>
<th>LOCATION</th>
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</table>

**Location of Boring:** Mw-2

**Drilling Method:** Air/Air

**Surface Conditions:**

- Light brown clayey silt with some fine sands, [saturated]
- Light brown clayey silt with some fine sands, [saturated]
LOCATION OF BORING

WORK ORDER

CLIENT

LOCATION

DRILLING METHOD

BORING NO.

HAMMER WT.

SAMPLING METHOD

DROPS

DRILLING

DEPTH

WATER LEVEL

TIME

TIME

DATE

DATE

SURFACE CONDITIONS:

light brown clayey silt w/ some fine sands, (saturated)

light brown clayey silt w/ some fine sand, (saturated)

soft easy to drill

Boring terminated at 8'.
Groundwater Monitoring Wells

PROJECT: C:\tmcustom\Kauai\3\302pl.pro

Point Coordinates Listing

<table>
<thead>
<tr>
<th>Point</th>
<th>North</th>
<th>East</th>
<th>Elev</th>
<th>Name</th>
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</table>

Notes:

A) Coordinates are referred to Government Triangulation Station "Kilohana".
B) Horizontal and Vertical Data are referred from Puhi Industrial Park Constructional Plans.
C) Coordinates on the Monitoring Wells are on the center point of 4" Pipe and Elevations are on the "Box Cut" on the concrete slab next to the Pipe.
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
WELL COMPLETION REPORT - PART I
Well Construction

Instructions: Please print in ink or type and send completed report (with attachments, if applicable) to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. The Commission may not accept incomplete reports. This form shall be submitted within 60 days of the completion of work. For assistance, please consult the Hawaii Well Construction and Pump Installation Standards or call the Regulation Branch at 587-0225. For updates to this form or additional information, please visit our website at http://www.state.hi.us/dlnr/cwrm/

1. State Well No.: 5723-03  Well Name: MW-3  Island: Kauai
2. Address: 3951 Puhi Road, Lihue, Kauai, HI 96766  Tax Map Key: 3-3-2:1
3. Drilling Company: Geolabs, Inc.
4. Drilling method used during construction: ☑ Rotary  ☐ Percussion  ☐ Other (describe)
5. Date Well Construction (drilled,cased,grouted) completed: 5/17/01  Attach Driller's Log (7126199 DL Form)

6. Was the subject well cored? ☐ Yes  ☑ No
7. Initial water-level encountered: 32.3 ft. below ground  Date and time of measurement: 5/16/01 11:00am
8. Step-Drawdown Test completed? ☑ No  ☐ Yes  Attach Step-Drawdown Test form (12117197 SDPTD Form)
9. Constant Rate Aquifer Test completed? ☑ No  ☑ Yes  Attach Constant Rate Aquifer Test form (12117197 CRPTD Form)
Parameters prior to pump test:
10. Water-level: N/A  ft. above msl  Date and time of measurement: N/A
11. Chloride: N/A  ppm  Date and time of sampling: N/A
12. Temperature: N/A  °F  Date and time of measurement: N/A
13. Fill in the as-built section on the other side of this sheet. (See Attached Figure)
15. If a pump is not planned to be installed, please describe (below in the remarks section) how well is secured to prevent unauthorized access (example: lockable cover, threaded coupling, etc.)

Licensed Driller (print) GEOLABS INC.  C-57 Lic. No.  12040
Signature  Date 8/23/01

Surveyor (print) PORTULAR SURVEYING & MAPPING INC.  L.P.L.S. Lic. No.  9033
Signature  Date 10/19/01

Permittee (print) CESAR C. PORTUGAL  COUNTY ENGINEER
Signature  Date 10/22/01
8" LOCKABLE WELL COVER

CASING TOP EL = 262.91

BENCHMARK EL = 260.50
GROUND EL = 260.10

3'x3' CONC PAD

CEMENT GROUT

20' - 4" DIA SCH 80 PVC SOLID CASING
W/T = 0.34" BTM EL = 242.91

BENTONITE SEAL

3" ANNULAR SPACE WSEL = 228.80

50' - 4" DIA SCH 80 PVC SCREEN
W/T = 0.34" 0.020 SLOT

FILTER SAND

10" DIA BOREHOLE TOTAL DEPTH=70'

BOREHOLE BTM EL = 190.10

CASING BTM EL = 192.91

*ALL ELEVATIONS SHOWN IN FT. MSL

PMRC LIHUE, KAUAJ
MW-3
STATE WELL ID: 5723-03
TMK: 3-3-2:1
SCALE: NTS
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<th>ELEVATION</th>
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<td>Rabbles Brown Silt Clay</td>
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<td>1</td>
<td>Moist (medium STIFF)</td>
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<td>Light Brown Silt Clay</td>
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<tr>
<td>11</td>
<td>Moist (medium STIFF)</td>
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### Core Recovery Table

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<th>Sample Type</th>
<th>Sample Number</th>
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### Drilling Details

- **Date:** 06/15/01
- **Time:** 07:05
- **FAX:** 808 847 1749
- **Geolabs-Hawaii**

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### Notes

- **Elevation:** 0
- **By:** 6/15/01
- **Date:** 6/15/01 07:06
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**Surface Conditions:**
- Light brown clayey silt or sand (Saturated)
- Elevation: 10' 8"
- Date: Jun 15, 1981
- Time: 07:06
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</table>

Notes:

A) Coordinates are referred to Government Triangulation Station "Kilohana".
B) Horizontal and Vertical Data are referred from Puhi Industrial Park Constructional Plans.
C) Coordinates on the Monitoring Wells are on the center point of 4" Pipe and Elevations are on the "Box Cut" on the concrete slab next to the Pipe.
GEOLABS, INC.
2006 Kalihi Street
Honolulu, Hawaii 96819
Phone: (808)841-5064 Fax: (808)847-1749

LETTER OF TRANSMITTAL
DATE: May 23, 2001
JOB NO.: W.O. 4640-00

ATTENTION: Lenore Nakama

RE: Monitoring Well Installation Services
Puhi Metals Recycling Facility
Puhi, Island of Kauai

TO: State of Hawaii, DLNR
The Commission on Water Resource Management
P.O. Box 621
Honolulu, HI 96809

WE ARE SENDING YOU Attached Under separate cover via MAIL the following items:

Shop drawings
Prints
Plans
Samples
Specifications
Copy of letter
Change order

COPIES DATE NO. DESCRIPTION
1 Sht 5-3-01 Well Construction Permit MW-1, MW-2, MW-3, Well No. 5723-01 to 03
(Date of Approval)

THESE ARE TRANSMITTED as checked below:

For approval
Approved as submitted
Resubmit ___ copies for approval

For your use and distribution
Approved as noted
Submit ___ copies for distribution

As requested
Returned for corrections
Return ___ corrected prints

For review & approval
Returning after review and signature

FOR BIDS DUE ________________ 19___

SIGNED AND RETURNED

REMARKS:

COPY TO County of Kauai – Mr. Troy Tanigawa (1 ORIGINAL)
Department of Public Works
4444 Rice Street, Room 255
Lihue, HI 96766

SIGN: Clayton S. Mimura, P.E.
President

CSM:as
If enclosures are not as noted, kindly notify us at once.
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 MW-1, MW-2, MW-3 (Well No. 5723-01 to 03) at 4261 Puhi Road, Kauai, TMK 3-3-2:1, 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 of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-15, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 14-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

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

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

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

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established in-stream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

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

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

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

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

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

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

Date of Approval: May 3, 2001
Expiration Date: May 3, 2003

GILBERT S. COLOMA-AGARAN, Chairperson
Commission on Water Resource Management

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day assessed from the permit date of approval.

Permittee's Signature: [Signature]
Printed Name: [Printed Name]
Firm or Title: [Firm or Title]
Driller's Signature: [Signature]
Printed Name: [Printed Name]
C-57 License #: [License Number]
Date: [Date]

Please sign both copies of this permit, return one to the Chairperson, and retain the other for your records.
Mr. Troy Tanigawa  
County of Kauai  
Department of Public Works  
4444 Rice Street  
Lihue, HI 96766

Dear Mr. Tanigawa:

Well Construction Permit  
MW-1, MW-2, MW-3 (Well No. 5723-01 to 03)

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

Special Conditions

1. Standard Condition 2 is modified to exempt the permittee from the requirements to install a monitor tube and conduct pumping tests.

2. Standard Condition 7.e. is waived.

3. Separate Well Completion Reports shall be filed for each well.

This permit does not authorize work for your permanent pump installation. Approval and issuance of your pump installation permit is contingent upon completed application and information provided to and accepted by Commission staff as required in the Well Construction & Pump Installation Standards (123/97) and any special conditions performed under this permit. However, a permanent pump may be installed prior to the permanent pump installation permit issuance in accordance with the Commission's April 15, 1998 Declaratory Ruling No. DEC-ADM98-G5, which states that:

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

If you qualify and wish to take advantage of this ruling, please include a written request to install the permanent pump prior to final pump installation permit issuance when you return to us your signed well construction permit.

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

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

If you have any questions, please call Lenore Nakama of the Commission staff at 587-0218 or toll-free at 274-3141, extension 70218.

Aloha,

[Signature]

GILBERT S. COLOMA-AGARAN  
Chairperson

Enclosures  
c. Grove Farm
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 MW-1, MW-2, MW-3 (Well No. 5723-01 to 03) at 4261 Puhi Road, Kauai, TMK 3-3-2:1, 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 of the Commission on Water Resource Management (Commission), P.O. Box 621, Honolulu, HI 96809, shall be notified, in writing, at least two (2) weeks before any work authorized by this permit commences and staff shall be allowed to inspect installation activities in accordance with §13-168-13, Hawaii Administrative Rules.

2. The well construction permit shall be for construction and testing of the well only. A minimum 1\(\frac{1}{4}\)-inch diameter monitor tube shall be permanently installed, in a manner acceptable to the Chairperson, to accurately record water levels. The permittee, well operator, and/or well owner shall coordinate with the Chairperson and conduct a pumping test in accordance with the Standards (a pump testing worksheet is attached). The permittee, well operator, and/or well owner shall submit to the Chairperson the test results as a basis for supporting an application to install a permanent pump and withdraw water for use. No permanent pump may be installed until a pump installation permit is approved and issued by the Chairperson.

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

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

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

6. The proposed well construction shall not adversely affect existing or future legal uses of water in the area, including any surface water or established instream flow standards. This permit or the authorization to construct the well shall not constitute a determination of correlative water rights.

7. The following shall be submitted to the Chairperson within sixty (60) days after completion of work:
   b. Elevation (referenced to mean sea level, msl) survey by a Hawaii-licensed surveyor.
   c. As-built sectional drawing of the well.
   d. Plot plan and map showing the exact location of the well.
   e. Complete pumping test records, including time, pumping rate, drawdown, chloride content, and other data.

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

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

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

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

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

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

Date of Approval: May 3, 2001
Expiration Date: May 3, 2003

I have read the conditions and terms of this permit and understand them. I accept and agree to meet these conditions as a prerequisite and underlying condition of my ability to proceed and understand that I shall not commence work until I and the driller have signed, dated, and returned the permit to the Commission. I also understand that non-compliance with any permit condition may be grounds for revocation and fines of up to $1000 per day starting from the permit date of approval.

Permittee's Signature: ________________________________ Date: ______________

Printed Name: ________________________________ Firm or Title: ________________________________

Driller's Signature: ________________________________ C-57 License #: ________________ Date: ________________

Printed Name: ________________________________ Firm or Title: ________________________________

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

Attachment:
USGS
Department of Health's Safe Drinking Water, Wastewater, and Clean Water Branches
Kauai Department of Water Supply
Grove Farm
**MISSION ON WATER RESOURCE MANAGEMENT**

**ROUTE SLIP FOR NEW APPLICATIONS**


DATE: 10-May-01

FOR: 3 Approval 3 Signature 4 Information

PLEASE:

- See Me
- Review & Comment
- Take Action
- Type Draft acknow letter
- Type Final, label new file folder
- File
- Xerox copies

SUSPENSE DATE:

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</table>

DATE: 3 Approval 3 Signature 4 Information

WELL NUMBER

WELL NAME MW-1, 2, & 3

- WELL CONSTRUCTION
- PUMP INSTALLATION
- BOTH

ATTACHMENTS FOR APPLICATION PROCESSING - Both applicant & staff generated

1. TRANS. LETTER
2. CWRM MAP
3. APPL. FORM (3X)
4. USGS MAPS (3X)
5. TAX MAPS (3X)
6. PARCEL OWNER VERIF. MLS PRINTOUT
7. CONTRACTOR VERIF. DCCA LICENSE SCREEN PRINTOUT
8. ALL INFO FILLED IN
9. BACKGROUND CHECK

FOLDER:
- MADE NEW FILE FOLDER, ATTACHED
- FILE FOLDER ALREADY MADE, IN FILE CABINET

INCOMPLETE ACTION DATES:

<table>
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<tr>
<th>DATE</th>
<th>ACTION</th>
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- Monitor Wells
- No need DO IT OR
- LD review

-
## Well Background Check

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<tr>
<th>Approved Well No.</th>
<th>Well Name</th>
<th>Applicant</th>
<th>Driller</th>
<th>Type</th>
<th>Well Construction</th>
<th>Pump Installation</th>
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<td>MW-3</td>
<td>MW-3</td>
<td>County of Kauai DPW</td>
<td>C-21563</td>
<td>WELL</td>
<td>Issued Signed WCR1 Accept</td>
<td>Issued Signed WCR2 Accept</td>
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<td>MW-2</td>
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<tr>
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<td>C-21563</td>
<td>WELL</td>
<td></td>
<td></td>
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</table>
**SECTION 1: WELL LOCATION INFORMATION**

<table>
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<tr>
<th>Island</th>
<th>KAUAI</th>
<th>Proposed Use</th>
<th>Other</th>
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<tbody>
<tr>
<td>Aquifer System</td>
<td>LIHUE</td>
<td>Proposed Withdrawal</td>
<td>1</td>
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<tr>
<td>Aquifer Sector</td>
<td>HANAMAULU</td>
<td>System Sustainable Yield</td>
<td>40</td>
</tr>
</tbody>
</table>

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

| Elevation at top of casing | ft., m.s.l. | Solvent Casing | Material | Designation | ft. |
| Ground Elevation | ft., m.s.l. | Cement Grout | ft. | Rock Packing | in. |
| Hole Diameter | ft. | Rock Packing | in. | Total Depth | ft. |
| Estimated Head | ft., m.s.l. | Calculated Aquifer Thickness | 41 ft. | County Water Supply (Y/N ?) | |

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

<p>| Well Depth | Theoretical Thickness of Aquifer | 41 ft. | 1/4 Aquifer Thickness | 10.25 ft. | Depth of Well below Sea Level | 30 ft. | too deep | (refer to HWCPIS Section 2.2) |
| Well Casing | Minimum Wall Thickness Material | PVC | County or Non-County | non-county | Minimum Thickness per standards | 0.337 in. | | |
| | Well Thickness Provided | 0.337 in. | okay | (refer to HWCPIS Section 2.4 c) | Minimum Length of Solid Casing (disregard this if this is a non-county well) | 242.1 ft. | | |
| | Length of solid casing Provided | 250 ft. | okay | (refer to HWCPIS Section 2.4 d) | Casing Material | Sch 80 | okay | (refer to HWCPIS Section 2.4 e) |
| | Annular Space | If the cell above reads #N/A, reference HWCPIS | | Depth of Grouting | Calculated Depth of Grouting | 188.3 ft. | | |
| | Depth of Grouting provided | 253 ft. | okay | (refer to HWCPIS Section 2.6 c) | Thickness of Annular Space | 3 in. | okay | (refer to HWCPIS Section 2.6 d) |</p>
<table>
<thead>
<tr>
<th>Taxkey</th>
<th>Subdiv/Condo-Apt Tnr Property</th>
<th>Address</th>
<th>Owner/Lessee</th>
<th>Beds</th>
<th>Baths</th>
<th>Land area</th>
<th>Living area</th>
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<tr>
<td>4-3-3-2-1 Haiku</td>
<td>F 4261 PUHI RD GROVE FARM CO INC</td>
<td>3 1+1/2 617.31 ac 617.31 ac</td>
<td>960 LIHUE PLANTATION CO LTD</td>
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</table>

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

To: Troy Tanigawa/Bruce Wade
Company: County of Kauai DPW/M&E
Fax Number: 241-6204/524-0246
Phone Number: 245-3678/529-7261

From: Lenore Nakama
Date: May 11, 2001
Pages Including Header: 3
Subject: Well Construction Permit

Notes/Comments:
The original is being sent via regular mail.
Please fully execute the permits and return one copy.
Thank you
May 3, 2001

Ms. Lenore Nakama
State of Hawaii
Department of Land and Natural Resource
Commission of Water Resource Management
1151 Punchbowl Street
Honolulu, HI 96813

Subject: Well Construction Permit Application - Puhi, Kauai, Hawaii

Dear Lenore:

Enclosed is a completed and signed application for the construction of three monitoring wells at the Puhi Metals Recycling Facility located outside of Lihue, Kauai. Included with this letter are a TMK map and a portion of the USGS quad map relating to the project site.

Construction of these wells was mandated by the Department of Health before allowing operation of the recycling facility. Please note that these wells are for monitoring purposes and will not be utilized as a new drinking water source. Dedicated, very low-flow capacity pumps will be installed in each well and only operated intermittently (i.e., during sampling events approximately twice per year.)

We ask for your expeditious review and issuance of a permit to construct.

Thank you for your assistance. You may contact me at the numbers shown below if you have any questions or comments.

Sincerely,

Bruce Wade, P.E.
Project Engineer

Cc: Mr. Troy Tanigawa – County of Kauai DPW file

Attachments

1001 Bishop Street
Suite 500, Pauahi Tower
Honolulu, HI 96813
Voice: 529-7261     Fax: 524-0246

DLNR Permit App Letter.doc
State of Hawaii
Commission on Water Resource Management
Department of Land and Natural Resources
Application for Permit

Well Construction and/or Pump Installation

Instructions: Please print in ink or type and send completed application with attachments to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96808. Application must be accompanied by 3 copies and a non-refundable filing fee of $25.84 payable to the Dept. of Land and Natural Resources. The Commission may accept incomplete applications. For assistance, call the Regulation Branch at 808-668-0857. For further information and updates to this application form, visit http://www.state.hi.us/dlnr.com.

Applicant Information: (Fill out all three, if applicable, and please check next to the primary contact)

1. (a) Well Owner: County Kauai DPW Contact Person: Troy Tanigawa Phone: 241-6880 Mailing Address: 444 Rice Street, Lihue, Kauai, HI 96766 Fax: 241-6204 E-mail: ttanigawa@kauai.gov

(b) Landowner: Grove Farm Contact Person: Mike Furukawa Phone: 245-3678 Mailing Address: PO Box 2069, Lihue, Kauai, HI 96766 Fax: E-mail:

(c) Contractor: Geolab Inc. Contact Person: Clayton Mimura Phone: 841-5064 Mailing Address: 2006 Kalani Street, Honolulu, HI 96819 Fax: 847-1749 E-mail: C21563

Well & Pump Information: (Please fill in the diagram on the back of this form.)

2. Well Name: MW-1, MW-2, MW-3 Island: Kauai Address: 4261 Puhi Rd, Lihue HI 96766 Tax Map Key: 3-3-2-1-0

Attach the relevant portion of (a) a 7.5-Minute Series U.S.G.S. topographic map (scale 1:24,000) and include the name of the quad map, and (b) a property tax map, showing well location referenced to established property boundaries.


*State Well No.: [ ] (If unknown, please call Commission at 808-668-0857)

4. Construction: [ ] Dug [ ] Shaft [ ] Tunnel

Is this well part of a battery of wells? Yes No (Please describe)

5. Proposed Pump Information: Rated Pump Capacity: 0.15 gallons per minute

Pump Type (Check one):

[ ] Deep Well Turbine [ ] Rotary [ ] Propeller
[ ] Submersible [ ] Rotary-Displacement [ ] Reciprocating
[ ] Centrifugal [ ] Rotary-Gear [ ] Impulse (Bladder)

6. Proposed Use: [ ] Municipal (including hotels, stores, etc.) [ ] Industrial
[ ] Domestic (individual, non-commercial water system)

Does this well serve 25 or more people at least 60 days per year or have 15 or more service connections? Yes No

[ ] Irrigation (crop) [ ] No. of Acres:

[ ] Military [ ] Other (explain): [ ] Intermittent sampling

7. (a) Proposed Amount of Withdrawal: ___ gallons per day (Intermittent)

(b) Method of Flow Measurement: [ ] Flowmeter [ ] Open-pipe [ ] Well [ ] Orifice [ ] Other (explain)

Other Important Information:

8. Legal Requirements: [ ] CDUP [ ] SMAP [ ] EIS [ ] EA [ ] None [ ] Other (explain)


I understand that approval of this application implies 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/bandonment report within 90 days after the completion date of the permitted work; 3) monthly water use data shall be submitted to the Commission; 4) such approval shall not constitute a determination of correlative water rights and shall not guarantee the pump capacity or future use up to the permitted pump capacity.

Well Owner: [ ] Print legibly
Signature: [ ] Date: [ ]

Landowner: [ ] Print legibly
Signature: [ ] Date: [ ]

Contractor: [ ] Print legibly
Signature: [ ] Date: [ ]

Geolab Inc.

Well No. [ ] Aquifer System No. [ ] State Well No. 5723-01, 02, 03

For official use only

Latitude [ ] Longitude [ ]

WCPIPA Form 10/25/00
10. PROPOSED WELL SECTION (Please attach schematic if different from diagram provided below)

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,
Bottom Elevation of Well Limit = (Water Elevation - 1/4 Aquifer Thickness) / 4
Example: Estimated = 3 ft. Water Elevation = 18 ft. Aquifer Thickness = 12 ft. = 18 ft. / 4 = 4.5 ft.

Solid Casing Material:
- Carbon Steel: compliant with [check one or more]: ANSI/AWWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: (check one): ASTM A409 (production wells), ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM D480 and ASTM D1527: (check one) Schedule 40, Schedule 80
- PVC Plastic conforming to ASTM D480 and (ASTM D1785 or ASTM D2241): (check one): Schedule 40, Schedule 80
- Thermoset Plastic: (check one): Filament Wound Resin Pipe conforming to ASTM D2998, Centrifugally Cast Resin Pipe conforming to ASTM D2997, Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3617, Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950, PTFE Fluorocarbon Tubing conforming to ASTM D3296, FEP Fluorocarbon Tubing conforming to ASTM D3296

Open Casing Material:
- Carbon Steel: compliant with [check one or more]: ANSI/AWWA C200, API Spec. 5L, ASTM A53, ASTM A139
- Stainless Steel: (check one): ASTM A409 (production wells), ASTM A312 (monitor wells)
- ABS Plastic conforming to ASTM D480 and ASTM D1527: (check one) Schedule 40, Schedule 80
- PVC Plastic conforming to ASTM D480 and (ASTM D1785 or ASTM D2241): (check one): Schedule 40, Schedule 80
- Thermoset Plastic: (check one): Filament Wound Resin Pipe conforming to ASTM D2998, Centrifugally Cast Resin Pipe conforming to ASTM D2997, Reinforced Plastic Mortar Pressure Pipe conforming to ASTM D3617, Glass Fiber Reinforced Resin Pressure Pipe conforming to AWWA C950, PTFE Fluorocarbon Tubing conforming to ASTM D3296, FEP Fluorocarbon Tubing conforming to ASTM D3296

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

For non-salt water Basal Wells - bottom elevation of well should not be deeper than 1/4 of aquifer thickness or,
Bottom Elevation of Well Limit = (Water Elevation - 1/4 Aquifer Thickness) / 4
Example: Estimated = 2 ft. Water Elevation = 18 ft. Aquifer Thickness = 12 ft. = 18 ft. / 4 = 4.5 ft.