Mangroye

PROJECT AREA
Molokai

Exhibit 1
1. **STATE WELL NO.** 0603-01 **WELL NAME** Maui-15 **ISLAND** Molokai

2. **LOCATION:** Address: Kalamauea Landfill Tax Map Key

3. **DRILLING OR PUMP INSTALLATION CONTRACTOR** Ernest K. Hiato - Assoc. Inc.

4. **CONTRACTORS C-57 LICENSE NUMBER**

5. **NAME OF DRILLER WHO PERFORMED WORK** Owen Adam

6. **TYPE OF RIG/CONSTRUCTION** Mobile Drill

7. **DATE OF WELL DRILLING COMPLETION** 8-9-92

8. **GROUND ELEVATION (msl)** ~ 5 ft.
   - Top of Drilling Platform (msl)
   - Height of Drilling Platform above Ground surface
   - Bench Mark and Method Used to Determine Ground Elevation

9. **DRILLER'S LOG:**
   - Water Level
   - Depth (ft.)
   - Rock Description, Remarks, Dates
   - Well Log
   - Depth (ft.)
   - Rock Description, Remarks, Dates

10. **TOTAL DEPTH OF WELL BELOW GROUND** 20 ft.

11. **HOLE SIZE:**
   - 10 Inch dia.
   - from 0 ft. to 20 ft. below ground

12. **CASING INSTALLED:**
   - 4 in. I.D. x 3 in. wall solid section to 5 ft. below ground
   - 4 in. I.D. x 5 in. wall perforated section to 20 ft. below ground

13. **ANNUALIS:**
   - Grouted from 0 ft. below ground to 3.5 ft. below ground
   - Gravel packed from 3.5 ft. below ground to 20 ft. below ground

14. **INITIAL WATER LEVEL** 4 ft. below ground. Date and time of measurement: 8/4/92 11:00
15. **INITIAL CHLORIDE** ppm Date and time of sampling: 8/4/92 15:00
16. **INITIAL TEMPERATURE** 81°F Date and time of sampling: 8/4/92 15:00
17. **DATE OF PUMP INSTALLATION**
18. **PUMP INSTALLATION:**
   - Pump Type, Make, Serial No.
   - Capacity gpm
   - Motor type, H.P., Voltage, rpm
   - Depth of Pump intake Setting ft. below ground, which elevation is ft.
   - Depth of bottom of airline ft. below ground, which elevation is ft.
   - Pumping Head is ft.

19. **PUMPING TESTS:**
   - Reference Point (R.P.) used: which elevation is ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>Draw down (ft.)</th>
<th>Depth of well (ft.)</th>
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<td>ft. below R.P.</td>
<td>(ppm)</td>
<td>ft. below R.P.</td>
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<th>Elapsed Time (hours)</th>
<th>Rate (ppm)</th>
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**Remarks:** For groundwater monitoring only

**For Driller's Use:**
- **JOB NAME:**
- **JOB NO.:** 0009

**For Official Use:**
- **WELL NO.:**
- **LONGITUDE:**
- **LATITUDE:**
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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19. (cont'd) PUMPING TESTS (cont'd):

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<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. F</th>
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**Groundwater Level**

**Soil Sampling Method:**

- Split-spoon (6" x 2.5")
- Equipment: Tool, Monitor

**Drilling Method:**

- Personnel: Contractor, Waterwell

**Soil Type:**

- Loose, sandy soil with some gravel
- Gravel mix
- Gravel混土

**Soil Conditions:**

- Loose, sandy soil
- Sandy gravel
- Gravel

**Remarks:**

- Monitoring instrument to check groundwater levels
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<th>#</th>
<th>Item</th>
<th>Details</th>
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<td>2</td>
<td>WELL NAME</td>
<td>MW-2</td>
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<td>3</td>
<td>ISLAND</td>
<td>Molokai</td>
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<td>4</td>
<td>LOCATION: Address</td>
<td>Kalamaula landfill</td>
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<td>5</td>
<td>Tax Map Key</td>
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<tr>
<td>6</td>
<td>CONTRACTOR'S C-57 LICENSE NUMBER</td>
<td>Erwin K. Hirane and Assoc., Inc.</td>
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<td>7</td>
<td>TYPE OF RIG/CONSTRUCTION</td>
<td>Mobel Drill B-53</td>
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<td>8</td>
<td>Date of Well Drilling Completion</td>
<td>8/4/92</td>
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<tr>
<td>9</td>
<td>GROUND ELEVATION (msl)</td>
<td>~ 10 ft.</td>
</tr>
<tr>
<td>10</td>
<td>Top of Drilling Platform (msl)</td>
<td>x ft.</td>
</tr>
<tr>
<td>11</td>
<td>Height of Drilling Platform above Ground surface</td>
<td>x ft.</td>
</tr>
<tr>
<td>12</td>
<td>Bench Mark and Method Used to Determine Ground Elevation</td>
<td>x ft.</td>
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<tr>
<td>13</td>
<td>TOTAL DEPTH OF WELL BELOW GROUND</td>
<td>25 ft.</td>
</tr>
<tr>
<td>14</td>
<td>HOLE SIZE</td>
<td>10 inch dia. from x ft. to 25 ft. below ground</td>
</tr>
<tr>
<td>15</td>
<td>CASING INSTALLED</td>
<td>x ft. below ground</td>
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<tr>
<td>16</td>
<td>ANNULS</td>
<td>x ft. below ground</td>
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<tr>
<td>17</td>
<td>INITIAL WATER LEVEL</td>
<td>14.5 ft. below ground</td>
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<tr>
<td>18</td>
<td>INITIAL CHLORIDE</td>
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<td>19</td>
<td>INITIAL TEMPERATURE</td>
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<td>20</td>
<td>DATE OF PUMP INSTALLATION</td>
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<td>PUMP INSTALLATION</td>
<td>Pump Type, Make, Serial No.</td>
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<td>22</td>
<td>Motor type, H.P., Voltage, rpm</td>
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<tr>
<td>23</td>
<td>Depth of Pump Intake Setting</td>
<td>ft. below, which elevation is x ft.</td>
</tr>
<tr>
<td>24</td>
<td>Depth of bottom of airline</td>
<td>ft. below, which elevation is x ft.</td>
</tr>
<tr>
<td>25</td>
<td>Pumping Head</td>
<td>x ft.</td>
</tr>
<tr>
<td>26</td>
<td>PUMPING TESTS</td>
<td>Reference Point (R.P.) used: x ft. which elevation is x ft.</td>
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<tr>
<td>27</td>
<td>Date</td>
<td>Start water level ft. below R.P.</td>
</tr>
<tr>
<td>28</td>
<td>End water level</td>
<td>ft. below R.P.</td>
</tr>
<tr>
<td>29</td>
<td>Depth of well</td>
<td>ft. below R.P.</td>
</tr>
<tr>
<td>30</td>
<td>Elapsed Time (hours)</td>
<td>Draw down (ft.)</td>
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<td>31</td>
<td>Rate (gpm)</td>
<td>Ca. Temp. °F</td>
</tr>
<tr>
<td>32</td>
<td>Elapsed Time (hours)</td>
<td>Draw down (ft.)</td>
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<tr>
<td>33</td>
<td>Rate (gpm)</td>
<td>Ca. Temp. °F</td>
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<tr>
<td>34</td>
<td>Remarks</td>
<td>For groundwater monitoring only</td>
</tr>
</tbody>
</table>

For Driller's Use:
- Job Name: 7009
- Job No.

For Official Use:
- Well No.
- Longitude
- Latitude
### DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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### PUMPING TESTS (cont'd):

<table>
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<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
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<th>Temp. °F</th>
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Remarks (cont'd):

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## Location of Boring

- **Location**: Kalaheo - LF
- **Job No.**: Ld 70
- **Boring No.**: MW-2
- **Driller**: Chen

### Borehole/Well Log

<table>
<thead>
<tr>
<th>Location</th>
<th>Water Level</th>
<th>Water Level at Time</th>
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</thead>
<tbody>
<tr>
<td>Kalanaheo-LF</td>
<td>AT TIME OF DRILLING</td>
<td>AT TIME OF SECOND</td>
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</table>

<table>
<thead>
<tr>
<th>Time</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Time</td>
<td>Time</td>
</tr>
<tr>
<td>07/10/02</td>
<td>07:55</td>
<td>09:30</td>
</tr>
<tr>
<td>04/12/02</td>
<td>09:30</td>
<td>11:00</td>
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</tbody>
</table>

### Drilling Information

- **Drilling Contractor**: Hiroko-3 Assoc.
- **Rig Type**: Mobile Drill B-53
- **Drilling Method**: Fluid Used: 10" Hollow stem auger

### Soil Sampling Method
- **Split Spoon**: 18" x 2 1/2" Surface Elev.

### Monitoring Instrument
- **Geotech LF Monitor**

### Surface Conditions
- **Soil Type**: Very soft, sandy soil

### Description
- **Soil Type**: Sandy silt, fine to coarse sand
- **Color**: Gray
- **Moisture**: Slightly moist
- **Organic Material**: Silt with organic material, roots, trash, trash
- **Surface Conditions**: Slightly moist

### Soil Sampling

<table>
<thead>
<tr>
<th>Soil Layer</th>
<th>Depth (ft)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MW-4</td>
<td>0-1</td>
<td>0-9 trash, plastic, wood, rubber, smelly</td>
</tr>
<tr>
<td></td>
<td>2-5</td>
<td>9-10.5 sandy silt, fine to coarse sand, win silt, red clay, lot of organic material, roots, trash, trash</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>15-15.5 silt w/ organics, black, old silt, old leaves, smelly</td>
</tr>
</tbody>
</table>

### Soil Sampling Results

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Soil Type</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>Sandy silt</td>
<td>Gray</td>
</tr>
<tr>
<td>2-5</td>
<td>Sandy silt</td>
<td>Gray</td>
</tr>
<tr>
<td>6-10</td>
<td>Sandy silt</td>
<td>Gray</td>
</tr>
</tbody>
</table>

### Soil Groups

- **USCS Group Symbol**: CL-12/TP, P-1-P
- **Munsell Color No.**

### Instrumentation
- **Description**: Soil type, color, moisture, consistency, density, other

### Drilling Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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<tbody>
<tr>
<td>Depth</td>
<td>0-10</td>
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<tr>
<td>Time</td>
<td>07:55</td>
</tr>
<tr>
<td>Finish</td>
<td>09:30</td>
</tr>
<tr>
<td>Date</td>
<td>07/10/02</td>
</tr>
</tbody>
</table>

---

**Location**: Kalaheo - LF

**Client**: Co of Maui

**Date**: 07/10/02

**Time**: 07:55

**Finish**: 09:30

**Drilling Contractor**: Hiroko-3 Assoc.

**Rig Type**: Mobile Drill B-53

**Drilling Method**: Fluid Used: 10" Hollow stem auger

**Soil Sampling Method**: Split Spoon 18" x 2 1/2" Surface Elev.

**Surface Conditions**: Very soft, sandy soil

**Description**: Sandy silt, fine to coarse sand

**Soil Type**: Sandy silt, fine to coarse sand

**Color**: Gray

**Moisture**: Slightly moist

**Organic Material**: Silt with organic material, roots, trash, trash

**Surface Conditions**: Slightly moist

**Soil Sampling Results**: 0-9 trash, plastic, wood, rubber, smelly

**Soil Groups**: CL-12/TP, P-1-P

**Munsell Color No.**

**Instrumentation**: Soil type, color, moisture, consistency, density, other

**Drilling Parameters**: Depth 0-10, Time 07:55, Finish 09:30, Date 07/10/02.
<table>
<thead>
<tr>
<th>Soil Sample No.</th>
<th>Depth in Feet</th>
<th>Instrument Reading (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

**Soil Information:**
- **Marsh Funnel Mud Weight:** 0.020
- **Sieved Analysis:**
- **Gravel:**
- **Sand:**
- **Fines:**

**Munsell Color No.:**

**USCS Group Symbol:**

**Logging Details:**
- **Logged By:** Tina Bauer  Date: 8/4/92
- **Checked By:**
- **Driller:** Owen Aden

**Logging Notes:**
- **No 3 boston sand**
- **4" slotted .020**

**Well Log Details:**
- **Drilling Contractor:** Hireco & Assoc.
# WELL COMPLETION REPORT

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

9/8/92  

**BASE: 49:02**

### Instructions:  
Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96808. An as-built drawing of the well and location shall also be submitted. For assistance call the Commission Regulation Branch at 587-0225.

### 1. STATE WELL NO.  
**OW-0344**  
WELL NAME: MW-3  
ISLAND: MOLOKAI

### 2. LOCATION:  
Address:  
Kalonaula - Leahi  
Tax Map Key:

### 3. DRILLING OR PUMP INSTALLATION CONTRACTOR:  
Ernest K. Hirata & Assoc.

### 4. CONTRACTOR'S C-57 LICENSE NUMBER  
---

### 5. NAME OF DRILLER WHO PERFORMED WORK:  
Owen Adam

### 6. TYPE OF RIG/CONSTRUCTION:  
Mobile Drill $-53

### 7. DATE OF WELL DRILLING COMPLETION:  
7/28/92

### 8. GROUND ELEVATION (msl)  
---

### 9. DRILLER'S LOG:  

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
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<tbody>
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(If more space is needed, continue on back.)

### 10. TOTAL DEPTH OF WELL BELOW GROUND  
---

### 11. HOLE SIZE:  
10 inch dia. from 0 ft. to 30 ft. below ground

### 12. CASING INSTALLED:  
in. I.D. x 4 in. wall solid to 9.6 ft. below ground

### 13. ANNULUS:  
Grouted from 0 ft. below ground to 4.5 ft. below ground

Gravel packed from 4.5 ft. below ground to 30 ft. below ground

### 14. INITIAL WATER LEVEL  
7 ft. below ground. Date and time of measurement 7-24-92 0:00

### 15. INITIAL CHLORIDE  
---

### 16. INITIAL TEMPERATURE  
82 °F

### 17. DATE OF PUMP INSTALLATION  
---

### 18. PUMP INSTALLATION:  
Pump Type, Make, Serial No. Capacity gpm  
Motor type, H.P., Voltage, rpm  

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

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>C-1 (ppm)</th>
<th>Temp. °F</th>
<th>Depth (ft.)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>C-1 (ppm)</th>
<th>Temp. °F</th>
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(If more space is needed, continue on back.)

**Remarks:** For groundwater monitoring only

Contractor (print): Brann and Caldwell  
Title: Geologist  
Signature:  
Date: 8/31/92

For Driller's Use:  
Job Name:  
Job No.:  
For Official Use:  
Well No.:  
Longitude:  
Latitude:  

---
### DRILLER'S LOG (cont'd):

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<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
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### PUMPING TESTS (cont'd):

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<th>Rate (gpm)</th>
<th>Draw-down (ft.)</th>
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<th>Elapsed Time (hours)</th>
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Remarks (cont'd): 

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**BOREHOLE/WELL LOG**

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<th>LOCATION OF BORING</th>
<th>BORING NO.</th>
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<tbody>
<tr>
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<td>MW-3</td>
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<table>
<thead>
<tr>
<th>WATER LEVEL</th>
<th>JOB NO.</th>
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<th>DRILLING CONTRACTOR</th>
<th>WELL CONSTR.</th>
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<th>DRILLING METHOD, FLUID USED</th>
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<th>TIME</th>
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<tr>
<th>SOIL SAMPLING METHOD</th>
<th>SURFACE ELEV.</th>
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</table>

**SOIL SAMPLING METHOD**

**DESCRIPTION:** Soil Type, Color, Moisture, Consistency, Density, Other

- **DATE:**
- **CHECKED BY:**
- **LOGGED BY:**

### WELL CONSTRUCTION

<table>
<thead>
<tr>
<th>CASING</th>
<th>SAMPLER TYPE</th>
<th>INTERVAL SAMPLED</th>
<th>SEWAGE ANALYSIS</th>
<th>DEPTH FEET</th>
<th>INSTRUMENT READING (rpm)</th>
<th>SAND</th>
<th>FINE</th>
<th>MARSHALL GROUP SYMBOL</th>
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</tbody>
</table>

**MOISTURE**

20-21.5% Coral sand, it gray.

**COLOR**

N1, very fine to coarse sand, grayish to medium gray.

**DESCRIPTION**

- **TO = 30 FT**
- **30 FT, pull bit covered with gray**

*Note: Handwritten notes and initials are present on the form.*
WELL COMPLETION REPORT

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96820. An as-built drawing of the well and chemical analysis report must be submitted. For assistance call the Commission Regulation Branch at 587-0225.

1. STATE WELL NO.: 0603-W-4
   ISLAND: Molokai
2. LOCATION: Address: Kalama, Land/Res Tax Map Key
3. DRILLING OR PUMP INSTALLATION CONTRACTOR: Ernest K. Hirara's Assoc.
4. CONTRACTOR'S C-57 LICENSE NUMBER
5. NAME OF DRILLER WHO PERFORMED WORK: Oscar Adam
6. TYPE OF RIG/CONSTRUCTION: Mobile Drill B-53
7. DATE OF WELL DRILLING COMPLETION: 7/24/92

8. GROUND ELEVATION (msl) ~ 30 ft.
   Top of Drilling Platform (msl) _____ ft.
   Height of Drilling Platform above Ground surface _______ ft.
   Bench Mark and Method Used to Determine Ground Elevation _______ ft.

9. DRILLER'S LOG:
   Rock Description, Remarks, Dates Water Level
   Depth (ft.) Rock Description, Remarks, Dates Water Level
   to see attached well log to
   to
   to
   to
   to
   (If more space is needed, continue on back.)

10. TOTAL DEPTH OF WELL BELOW GROUND 25 ft.
11. HOLE SIZE: 10 inch dia. from 0 ft. to 25 ft. below ground
    inch dia. from ft. to ft. below ground
    inch dia. from ft. to ft. below ground
12. CASING INSTALLED: 6 in. wall solid section to 9.5 ft. below ground
    4 in. wall perforated section to 25 ft. below ground
13. ANNULUS: Grouted from 0 ft. below ground to 7 ft. below ground
    Gravel packed from 7 ft. below ground to 25 ft. below ground
14. INITIAL WATER LEVEL: 9 ft. below ground. Date and time of measurement 7/31/92 08:30
15. INITIAL CHLORIDE ppm Date and time of sampling
16. INITIAL TEMPERATURE ~ 82 °F Date and time of sampling 8/3/92 12:30
17. DATE OF PUMP INSTALLATION
18. PUMP INSTALLATION:
   Pump Type, Make, Serial No. Capacity gpm
   Motor type, H.P., Voltage, rpm
   Depth of Pump Intake Setting ft. below _______, which elevation is _______.
   Depth of bottom of airlift ft. below _______, which elevation is _______.
   Pumping Head is _______.
19. PUMPING TESTS:
   Reference Point (R.P.) used: _______, which elevation is _______.
   Date
   Start water level ft. below R.P. Date
   End water level ft. below R.P. Date
   Depth of well ft. below R.P. Date
   Elapsed Time (hours) Rate (gpm) Draw down (ft.) C1 ppm Temp °F Elapsed Time (hours) Rate (gpm) Draw down (ft.) C1 ppm Temp °F
   to
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   to
   Remarks: For groundwater monitoring only
   (If more space is needed, continue on back.)

Contractor (print) Brian and Caldwell
Signature
Title Geologist
Date 8/3/92

For Driller's Use:
Job Name
Job No. 4004

For Official Use:
Well No.
Longitude
Latitude
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
</tr>
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<tbody>
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10. (cont'd) PUMPING TESTS (cont'd):

<table>
<thead>
<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
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Remarks (cont'd):

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<table>
<thead>
<tr>
<th>DEPTH (FT)</th>
<th>CASING</th>
<th>MARSH-MELL</th>
<th>INTERVAL SAMPLED</th>
<th>INSTRUMENT READING (WP)</th>
<th>ESTIMATED PERCENT</th>
<th>USGS COLOR NO.</th>
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</table>

**SOIL SAMPLING METHOD:** 18" x 2.5" SURFACE ELEV. +10

**SOIL SAMPLING:**

- D-5: Trash, plastic, paper bags, wood shavings
- 7-8: Trash, 7-7.5 most
- 7.5-8: Analytical sample - moist
- 8-8.5: Trash, light sand, 35%
- Moist brown sand, 35% fines, 20% coarse to sandy brown gravel, black (N1), matrix with bones (cut 3/4"
- Seems to be from burned material, charred wood, no nasty odors
- V. moist

**MONITORING INSTRUMENTS:**

- Surface conditions dry, dusty, track
- Heat, dust

**DESCRIPTION:**

- Soil Type, Color, Moisture, Consistency, Density, Other

---

Client: OZ Main
Location: Matamata LF
Job No.: 0270

**DRILLING:**

- Start: 08:05
- Finish: 10:30
- Date: 08/12/70

- Drilling Contractor: Huta, Associates
- Rig Type: Mobile drill
- Drilling Method: Fluid used 10" Hollow

**SOIL SAMPLING:**

- Sampled 18" x 2.5"
- Surface Elevation: +10

**DESCRIPTION:**

- D-5: Trash, plastic, paper bags, wood shavings
- 7-8: Trash, 7-7.5 most
- 7.5-8: Analytical sample - moist
- 8-8.5: Trash, light sand, 35%
- Moist brown sand, 35% fines, 20% coarse to sandy brown gravel, black (N1), matrix with bones (cut 3/4"
- Seems to be from burned material, charred wood, no nasty odors
- V. moist

- 15-15.5: No recovery
- 16.5: Silty sand, brow, med. grey (N-5), saturated

**NOTATION:**

- Drillers: David Oliver
- Checked by: Ted Baker

---

**LOCATION OF BORING:**

- MW-4
- MW-3
- MW-04
- MW-05

**WELL CONSTRUCTION:**

- Casing: 4" PVC 20" apron
- No 3 Londer sand
- MW

---

**DRILLING:**

- Start: 08:05
- Finish: 10:30
- Date: 08/12/70

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- Rig Type: Mobile drill
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- 16.5: Silty sand, brow, med. grey (N-5), saturated

**NOTATION:**

- Drillers: David Oliver
- Checked by: Ted Baker

---
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Soil Type</th>
<th>Munsell Color No.</th>
<th>Uscs Group Symbol</th>
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</thead>
<tbody>
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</table>

**Notes:**
- TD = 23 ft
- 26’ - Gravel
- 15.25’ - Gravel
- 10.5’ - Gravel
- 7.25’ - Gravel
- 3.5’ - Gravel
- 3’ - Gravel
- 0.5’ - Gravel

**Monitoring Instrument:**
- Soil Type, Color, Moisture, Consistency, Density, Other

**Soil Sampling Method:**
- Surface Conditions

**Soil Sampling Location:**
- Borehole/WELL LOG

**Logging by:**
- Tina Brown

**Date:**
- 7-29-2
State of Hawaii  
COMMISSION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources  

WELL COMPLETION REPORT  

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well should accompany this report. The Contractor should also submit for the Commission’s Regulation Branch at 567-0025.

1. STATE WELL NO. 0003-05M  
WELL NAME MWS ISLAND Molokai

2. LOCATION: Address Kalama Lab Land Fill, Tax Map Key  

3. DRILLING OR PUMP INSTALLATION CONTRACTOR: Ernest K. Hiraiz and Assoc.

4. CONTRACTOR’S C-57 LICENSE NUMBER

5. NAME OF DRILLER WHO PERFORMED WORK: Owen Adam

6. TYPE OF RIG/CONSTRUCTION: Mobile Drill R-53

7. DATE OF WELL DRILLING COMPLETION: 7/30/92  

(Note: Report must be submitted within 30 days after this date)

8. GROUND ELEVATION (msl) ~ 25 ft.  
Top of Drilling Platform (msl) ______ ft.  
Height of Drilling Platform above Ground surface ______ ft.  
Bench Mark and Method Used to Determine Ground Elevation ______ ft.

9. DRILLER’S LOG:  

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
</tr>
</thead>
<tbody>
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(Media more space is needed, continue on back.)

10. TOTAL DEPTH OF WELL BELOW GROUND 25 ft.

11. HOLE SIZE:  10 inch dia. from 0 ft. to 25 ft. below ground

12. CASING INSTALLED:  4 in. wall solid section to 10 ft. below ground  
Type of Perforation 0.020" machine slotted

13. ANNULUS:  Grouted from 0 ft. below ground to 8.5 ft. below ground

Gravel packed from 8.5 ft. below ground to 25 ft. below ground

14. INITIAL WATER LEVEL 11 ft. below ground. Date and time of measurement 7/30/92 08:30

15. INITIAL CHLORIDE ppm Date and time of sampling

16. INITIAL TEMPERATURE ~ 82 *F Date and time of sampling 7/30/92 16:30

17. DATE OF PUMP INSTALLATION

18. PUMP INSTALLATION:  

<table>
<thead>
<tr>
<th>Pump Type, Make, Serial No.</th>
<th>Capacity</th>
<th>gpm</th>
</tr>
</thead>
</table>

Motor type, H.P., Voltage, rpm

Depth of Pump Intake Setting ______ ft. below ______, which elevation is ______ ft.

Depth of bottom of airline ______ ft. below ______, which elevation is ______ ft.

Pumping Head is ______ ft.

19. PUMPING TESTS:  

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>ft. below R.P.</th>
<th>Start water level</th>
<th>ft. below R.P.</th>
<th>Elapsed Time (hours)</th>
<th>Drawn-down (ft.)</th>
<th>Chloride (ppm)</th>
<th>Temp. *F</th>
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(Time (hours) ppm)  

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<th>Date</th>
<th>Depth of well</th>
<th>ft. below R.P.</th>
<th>Depth of well</th>
<th>ft. below R.P.</th>
<th>Elapsed Time (hours)</th>
<th>Drawn-down (ft.)</th>
<th>Chloride (ppm)</th>
<th>Temp. *F</th>
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Remarks: For groundwater monitoring only  

Contractor (print): Brain and Caldwell  
Title: Geologist

Signature:  

Date: 8/31/92

For Driller’s Use:  
Job Name: Job No. 7007

For Official Use:  
Well No.  
Longitude  
Latitude
8. (conf'd) DRILLER'S LOG (conf'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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9. (cont'd) PUMPING TESTS (cont'd):

<table>
<thead>
<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
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Remarks (conf'd):

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<table>
<thead>
<tr>
<th>Depth in Feet</th>
<th>Instrument Reading (cm)</th>
<th>Gravel</th>
<th>Sand</th>
<th>Fines</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td></td>
<td></td>
<td>0-10 - Trash &amp; cover soil 1-5 cm plastic, wood, metal pieces</td>
</tr>
<tr>
<td>1-2</td>
<td>14.95</td>
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<td></td>
<td></td>
<td>10-11 silt, moderate brown to black, volcanic silt, low plastic, silty moist, medium brown color from Channel, more red than black, few cobbles in 10 mm, trace of basal sand</td>
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<tr>
<td>3</td>
<td>72132 NS 8M</td>
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<td>B possible metal object like a refrigerator or washing machine</td>
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<td></td>
<td>B-11 silt, yellow sand, medium gray to light gray, saturated, loose, slightly sandy, fine to coarse sand, gravel 3, some volcanic</td>
</tr>
</tbody>
</table>

**SOIL SAMPLING METHOD:** 18" x 2.5"

**SURFACE ELEVATION:** 2.15

**MONITORING INSTRUMENT:** Geotech LF driller pipes

**SURFACE CONDITIONS:** Clay soil, trash

**DESCRIPTION:** Soil type, color, moisture, consistency, density, other
## Borehole/Well Log

**Location of Boring:**

- **Location:** [Redacted]
- **Job No.:** MW-512

### Water Table
- **Level:** [Data Missing]
- **Time:** [Data Missing]

### Drilling Contractor
- **Date:** [Data Missing]
- **Start:** [Data Missing]
- **Finish:** [Data Missing]

### Well Construction
- **Date:** [Data Missing]
- **Start:** [Data Missing]
- **Finish:** [Data Missing]

### Soil Sampling

<table>
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<tr>
<th>Depth (FEET)</th>
<th>Instrument Reading (gpm)</th>
<th>Estimated Percent</th>
<th>Munsell Color No.</th>
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### Soil Sampling Method
- **Surface Elevation:** [Data Missing]

### Monitoring Instrument
- **Surface Conditions:** [Data Missing]

### Description:
- **Soil Type, Color, Moisture, Consistency, Density, Other:**
  - **20-31.5:** dual sand, small coral chunks probably drilling through old, white, 1F gray (NT)
  - **Bottom of casing at 29.5:**
  - **TD = 25:** some (1-1.5') bearing sands
**Borehole/Well Log**

**Location of Boring:** Hoaen Rd

**Location of Well:** Palaomaila LF JOB NO. 10620

**Borehole No.:** MW-5/L1

**Water Level:** At time of drilling

**Well Construction:**
- **Casing:** NA
- **Sampler:** NA
- **Marshall Funnel:** NA
- **Interval Sampled:** NA
- **Seve Analysis:** NA

**Estimated Percent:**
- **Gravel:** 0%
- **Sand:** 100%
- **Fines:** 0%

**Munsell Color Symbol:** NA

**Soil Sampling Method:** Stem Auger

**Drilling Contractor:** Hirak & Assocs.

**Drilling Method:** Fluid Used: 18" x 2.5" Split Sand 10" OD Hollow

**Drilling Equipment:** Mobile Drill 53

**Drilling Start:** 15:20 06/20

**Drilling Finish:** 15:20 06/20

**Well Constr.:**
- **Start Time:** 06/20 06:20
- **Finish Time:** 06/20 06:20

**Surface Conditions:** Dusty, Trash, Dusty

**Monitoring Instrument:** Gas Tech Landfill Dragger

**Surface Elev.:**

**Description:** Soil Type, Color, Moisture, Consistency, Density, Other

- **0 - 9.5:** Trash
- **9.5 - 10:** Analysed sample
- **10 - 10.5:** Sandy gravel with charcoal, red, brown, black, moist, loamy

**TD = 10.5 ft**

**Notes:**
- Handwritten notes:
  - This hole
  - Backfilled with cuttings
## WELL COMPLETION REPORT

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

### Instructions:
- Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96808. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0228.

### 1. STATE WELL NO.: 0003 - 004
   **WELL NAME:** W∞ S. ROUND Mokai

### 2. LOCATION: Address
   **Kahaluu LE Tax Map Key**

### 3. DRILLING OR PUMP INSTALLATION CONTRACTOR
   **Ernest K. Hirato & Assoc.**

### 4. CONTRACTORS C-57 LICENSE NUMBER

### 5. NAME OF DRILLER WHO PERFORMED WORK
   **Dave Adam**

### 6. TYPE OF RIG/CONSTRUCTION
   **Mobile Drill B-53**

### 7. DATE OF WELL DRILLING COMPLETION
   **8/16/92**

(NOTE: Report must be submitted within 30 days after this date)

### 8. GROUND ELEVATION (msl) ~ 25 ft.
- Top of Drilling Platform (msl) __________ ft.
- Height of Drilling Platform above Ground surface __________ ft.
- Bench Mark and Method Used to Determine Ground Elevation __________ ft.

### 9. DRILLER'S LOG:

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

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

### 10. TOTAL DEPTH OF WELL BELOW GROUND 26.5 ft.

### 11. HOLE SIZE:
- 10” inch dia. from 0 ft. to 25 ft. below ground
- 8” inch dia. from 25 ft. to 26.5 ft. below ground

### 12. CASING INSTALLED:
- Sch. 40 in. wall solid section to 10 ft. below ground
- 10” in. wall perforated section to 25 ft. below ground

### 13. ANNULUS:
- Grouted from 0 ft. below ground to 8 ft. below ground
- Gravel packed from 8 ft. below ground to 26.5 ft. below ground

### 14. INITIAL WATER LEVEL 10.5 ft. below ground. Date and time of measurement 8/16/92

### 15. INITIAL CHLORIDE __________ ppm
   Date and time of sampling

### 16. INITIAL TEMPERATURE ~82 °F
   Date and time of sampling 8/17/90 11:00

### 17. DATE OF PUMP INSTALLATION

### 18. PUMP INSTALLATION:
   - Pump Type, Make, Serial No.
   - Capacity __________ gpm
   - Motor type, H.P., Voltage, rpm
   - Depth of Pump Intake Setting __________ ft. below ground, which elevation is __________ ft.
   - Depth of bottom of airline __________ ft. below ground, which elevation is __________ ft.
   - Pumping Head __________ ft.

### 19. PUMPING TESTS:
   - Reference Point (R.P.) used: __________, which elevation is __________ ft.
   - Date
     - Start water level __________ ft. below R.P.
     - End water level __________ ft. below R.P.
     - Depth of well __________ ft. below R.P.
   - Start water level __________ ft. below R.P.
   - End water level __________ ft. below R.P.
   - Depth of well __________ ft. below R.P.
   - Elapsed Time (hours) __________
   - Rate (ppm) __________
   - Draw-down (ft.) __________
   - Chlorides (ppm) __________
   - Temp. °F __________

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

### For Driller's Use:
- Job Name __________

### For Official Use:
- Well No. __________
- Longitude __________
- Latitude __________

---

**Remarks:** For groundwater monitoring only

**Contractor (print):** Brown & Caldwell
**Title:** Geologist
**Signature:**
**Date:** 8/3/92
9. (cont'd) DRILLER'S LOG (cont'd):

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

10. (cont'd) PUMPING TESTS (cont'd):

<table>
<thead>
<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>CI (ppm)</th>
<th>Temp. °F</th>
</tr>
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<tbody>
<tr>
<td>to</td>
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<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>CI (ppm)</th>
<th>Temp. °F</th>
</tr>
</thead>
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</tbody>
</table>

Remarks (cont'd):


**BOREHOLE/WELL LOG**

**CLIENT**  Co. of Maui  **BORE NO.**  MW-7

**LOCATION**  Kahului LF  **JOB NO.**  Id670

**TIME**  |  **DATE**  
---|---
08:00 | 8/14/92
09:30 | 8/15/92

**DRILLING CONTRACTOR**  Hiraoka & Assoc.

**RIG TYPE**  Mobile Drill B-53

**DRILLING METHOD**  Penumatic

**DRILLING TIME**  |  **DATE**  
---|---
09:45 | 8/14/92
11:40 | 8/15/92

**SOIL SAMPLES**

**SOIL SAMPLING METHOD**  18" x 6" x 2"  **SURFACE ELEV.**

**SPLIT SPAN**

**Casing**

**Annulus**

**Interval**

**Depth in Feet**

**Reading (rpm)**

**Gravel**

**Sand**

**Rocks**

**Munsell Color No.**

**USCS Group Symbol**

---

**ESTIMATED PERCENT**

**DESCRIPTION**

- 0-10: Tires, alu cans, trash, garbage
- 10-11.5: Dark silt, dusty, brown (5 years)
- Soft, mold, plasticity, moist, some woven sack (nylon), lettuce roots
- Tire pieces: no uncommon odors
- 15-16: Coral gravel w/silt, med. lt. gray (No)
- Saturated, some volcanic sands, mostly coral sands, chunks, loose
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Casing</th>
<th>Soil</th>
<th>Soil Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>XX</td>
<td>No</td>
<td>Clayey silt</td>
</tr>
<tr>
<td>1</td>
<td>XX</td>
<td>No</td>
<td>Coarse gravel</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td>No</td>
<td>Sand</td>
</tr>
<tr>
<td>3</td>
<td>No</td>
<td>No</td>
<td>Sand</td>
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<tr>
<td>4</td>
<td>No</td>
<td>No</td>
<td>Sand</td>
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<tr>
<td>5</td>
<td>No</td>
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<td>Sand</td>
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<td>6</td>
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<td>8</td>
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<td>Sand</td>
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<tr>
<td>9</td>
<td>No</td>
<td>No</td>
<td>Sand</td>
</tr>
<tr>
<td>10</td>
<td>No</td>
<td>No</td>
<td>Sand</td>
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</tbody>
</table>

**Notes:**
- **DP-31.5** Same as 15-60 samples collected for same analysis.
- **25-31.5** Same as above but more fine, med gray (NS)
- **TD = 31.5**
- **Casing at 25 ft BGS.**
Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96809. An as-built drawing of the well and completed plans should also be submitted. For assistance call the Commission Regulation Branch at 587-0225.

**1. STATE WELL NO.** 0603-07J  **NAME** MW-4  **ISLAND** Molokai

**2. LOCATION:** Address: Kalamaula Lane, Tax Map Key

**3. DRILLING OR PUMP INSTALLATION CONTRACTOR** Ernest K. Hula 3 Assoc.

**4. CONTRACTOR’S C-57 LICENSE NUMBER**

**5. NAME OF DRILER WHO PERFORMED WORK** Queen Adam

**6. TYPE OF RIG/CONSTRUCTION** Mobile Drill B-53

**7. DATE OF WELL DRILLING COMPLETION** 8/19/92

**8. GROUND ELEVATION (msl)** ~ 25 ft.
- Top of Drilling Platform (msl) __________ ft.
- Height of Drilling Platform above Ground surface __________ ft.

**9. DRILLER’S LOG:**

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

**10. TOTAL DEPTH OF WELL BELOW GROUND** 50 ft.

**11. HOLE SIZE:**
- 10 inch dia. from 0 ft. to 50 ft. below ground

**12. CASING INSTALLED:**
- 3/4 in. wall solid section to 32.5 ft. below ground
- 4 in. wall perforated section to 32.5 ft. below ground

**13. ANNULUS:**
- Grouted from 29 ft. below ground to 38.5 ft. below ground
- Gravel packed from 29 ft. below ground to 50 ft. below ground

**14. INITIAL WATER LEVEL** 12 ft. below ground. Date and time of measurement 8/19/92 10:30

**15. INITIAL CHLORIDE** 124 ppm Date and time of sampling

**16. INITIAL TEMPERATURE** 81 °F Date and time of sampling 8/19/92 09:30

**17. DATE OF PUMP INSTALLATION**

**18. PUMP INSTALLATION:**
- Pump Type, Make, Serial No. __________
- Capacity _______ gpm
- Motor type, H.P., Voltage, rpm

**19. PUMPING TESTS:**
- Reference Point (R.P.) used: ______, which elevation is ______ ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>Rate (ppm)</th>
<th>Drawdown (ft.)</th>
<th>Cl. Temp. (°F)</th>
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<tbody>
<tr>
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</table>

**Remarks:** For groundwater monitoring only

**Contractor (print)**

**Date** 8/19/92

---

For Driller’s Use: Job No. 7009

For Official Use: Well No. __________________

Longitude __________________

Latitude __________________
<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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19. (cont'd) PUMPING TESTS (cont'd):

<table>
<thead>
<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl (ppm)</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl (ppm)</th>
<th>Temp. °F</th>
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</tbody>
</table>

Remarks (cont'd):

_________________________________________________________________________________________________________________________________________
**DESCRiPTION:**

Soil Type, Color, Moisture, Consistency, Density, Other

- **0-30 ft:** Trash, plastic, rubber, metal pieces.

10-35 ft not logged - see borehole log from MW-6.
<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Soil Type</th>
<th>Color</th>
<th>Consistency</th>
<th>Surface Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>Sand</td>
<td>Pink</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
<tr>
<td>10-20</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
<tr>
<td>20-30</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
<tr>
<td>30-40</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<tr>
<td>40-50</td>
<td>Sand</td>
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<td>Fine, smooth</td>
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<tr>
<td>50-60</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<td>60-70</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<tr>
<td>70-80</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
<tr>
<td>80-90</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
<tr>
<td>90-100</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
</tr>
</tbody>
</table>

**Site:** Location of Boring

**Client:** Client A

**Contractor:** Well Constructor

**Driller:** Allen ADAM

**Date:** 8/1/92

**Logging:** Maria Bauer

**Table:**

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Soil Type</th>
<th>Color</th>
<th>Consistency</th>
<th>Surface Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>Sand</td>
<td>Pink</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<tr>
<td>10-20</td>
<td>Sand</td>
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<td>Silty gravel, med pebbles</td>
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<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<td>Sand</td>
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<td>Silty gravel, med pebbles</td>
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<tr>
<td>40-50</td>
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<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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<td>Fine, smooth</td>
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<td>60-70</td>
<td>Sand</td>
<td>Grey</td>
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<td>90-100</td>
<td>Sand</td>
<td>Grey</td>
<td>Fine, smooth</td>
<td>Silty gravel, med pebbles</td>
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### BOREHOLE/WELL LOG

**LOCATION OF BORING**

**BOREHOLE/WELL LOG**

<table>
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<tr>
<th>DATE</th>
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**WELL CONSTRUCTION**

- **CASING**
  - **ANNUlus**
  - **INTERVAL SAMPLD.**
  - **RECOVERY**
  - **SEIVE ANALYSIS**

<table>
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<th>INSTRUMENT READING</th>
<th>ESTIMATED PERCENT</th>
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<td></td>
<td>95.05</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>95.05</td>
</tr>
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**SOIL SAMPLING METHOD**

- **USCS GROUP SYMBOL**
- **MONITORING INSTRUMENT**
- **SURFACE CONDITIONS**

**DESCRIPTION:** Soil Type, Color, Moisture, Consistency, Density, Other

- **40:** Sandy silt - same as 35-35.5
  - 41.5: Sand is fine to meet, coarse
  - 45-45.5: Sand and some silt, fine to coarse, calcareous, and vesicular sands. Substratum to gravel pebbles up to 5mm. Fossil shell is very pale orange, dry, and pinkish gray (5YR 8/1). Dry, looks like beach sand.

- **49:** Soft clay, moderate dry, v. stiff, dense, impossible v. moist.

**TD = 50.'
1. **STATE WELL NO.**: 0003-054
2. **WELL NAME**: Moanalua Island
3. **LOCATION**: Address Kaloa Lane
4. **CONTRACTOR'S C-57 LICENSE NUMBER**: Ernst K. Hirota % Assc.
5. **NAME OF DRILLER WHO PERFORMED WORK**: Owen Adam
6. **TYPE OF RIG/CONSTRUCTION**: Mobile Drill B-53
7. **DATE OF WELL DRILLING COMPLETION**: 3/1/92
8. **GROUND ELEVATION (msl)**: 10 ft.
   - Top of Drilling Platform
   - Height of Drilling Platform above Ground surface
   - Bench Mark and Method Used to Determine Ground Elevation
9. **DRILLER'S LOG**:
   - Depth (ft.): 
     - 0 ft. to 20 ft. below ground
     - 20 ft. to 21.5 ft. below ground
     - 21.5 ft. to 40 ft. below ground

### Pumping Tests

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level</th>
<th>End water level</th>
<th>Depth of well</th>
<th>Rate (ppm)</th>
<th>Draw-down (ft.)</th>
<th>Cl. Temp.</th>
<th>Elapsed Time (hours)</th>
<th>Distance (ppm)</th>
<th>Draw-down (ft.)</th>
<th>Cl. Temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/1/92</td>
<td>2.4 ft. below ground</td>
<td>0 ft. below R.P.</td>
<td>0 ft. below R.P.</td>
<td>40 ppm</td>
<td>20 ft.</td>
<td>7.3°F</td>
<td>9 hours</td>
<td>20 ppm</td>
<td>20 ft.</td>
<td>6°F</td>
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</tbody>
</table>

**Remarks**: Groundwater Monitor Only

**Contractor (print)**: Brown & Caldwell
**Title**: Geologist
**Date**: 3/1/92

**For Driller's Use**: Job Name: Job No. 7009
**For Official Use**: Well No. Longitude Latitude
## DRILLER'S LOG (cont'd):

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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## PUMPING TESTS (cont'd):

<table>
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<tr>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>C1 (ppm)</th>
<th>Temp. F</th>
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Remarks (cont'd):

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### Remarks (cont'd):

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### Depth to

- 19. (cont'd) PUMPING TESTS (cont'd):

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### Elapsed Time (hours)

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### Rate (gpm)

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### Drawdown (ft.)

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### CI (ppm)

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### Temp. F

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### Details

- Water Level:
  - "Water Level"
  - "Water Level"
  - "Water Level"
  - "Water Level"
  - "Water Level"
  - "Water Level"
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- Drawdown (ft.):
  - "Drawdown (ft.)"
  - "Drawdown (ft.)"
  - "Drawdown (ft.)"
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  - "Drawdown (ft.)"

- CI (ppm):
  - "CI (ppm)"
  - "CI (ppm)"
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  - "CI (ppm)"

- Temp. F:
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  - "Temp. F"
  - "Temp. F"
### Borehole/Well Log

#### LOCATION OF BORING

- **Co. of Mead**

#### BOREHOLE/WELL LOG

<table>
<thead>
<tr>
<th>JOB NO.</th>
<th>MW-8</th>
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</table>

#### WELL CONSTRUCTION

<table>
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<tr>
<th>DATE</th>
<th>CHECKED BY</th>
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<tbody>
<tr>
<td>8/6/82</td>
<td>T. Baker</td>
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</table>

#### SOIL SAMPLING

<table>
<thead>
<tr>
<th>DEPTH IN FEET</th>
<th>ESTIMATED PERCENT</th>
<th>MONTELL COLOR NO.</th>
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<table>
<thead>
<tr>
<th>INSTRUMENT READING</th>
<th>SAND</th>
<th>FINE</th>
<th>USCS GROUP SYMBOL</th>
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</table>

#### MONITORING INSTRUMENT

- **SURFACE CONDITIONS**

- **DESCRIPTION:** Soil Type, Color, Moisture, Consistency, Density, Other

<table>
<thead>
<tr>
<th>INTERVAL</th>
<th>SAMPLER TYPE</th>
<th>MUD WEIGHT</th>
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</thead>
</table>

**Well Location:**

- **Location:** 2 of 2

**Water Level:**

- **At Time:**
- **Second:**
- **Third:**
- **Fourth:**

**Drilling Time:**

<table>
<thead>
<tr>
<th>TIME</th>
<th>START</th>
<th>FINISH</th>
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</table>

**Drilling Contractor:**

<table>
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<tr>
<th>DATE</th>
<th>DATE</th>
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</thead>
</table>

**Drilling Method, Fluid Used:**

- **Start:**
- **Finish:**

**Soil Sampling Method:**

**Location:**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>WELT SAMPLING \ METHOD, FLUID USED</th>
</tr>
</thead>
</table>

**Surface Elev.**

**Monitoring Instrument**

**Surface Conditions**

**Description:** Soil Type, Color, Moisture, Consistency, Density, Other

- **TD = 21.5**
- **Bottom of casing at 19.5**

**Soil Sample:**

- **20-20.5 - gravelly silty clay, gray**
- **20.5-21.5 - gravelly silty clay grayish orange (A) (1YR 7/2) less fine than above.**

---

**Notes:**

- See pg. 1

---

**Log by:**

T. Baker

**Date:** 8/6/82

---

**Logged by:**

T. Baker

**Date:** 8/6/82
State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources

WELL COMPLETION REPORT

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

1. STATE WELL NO. 0023-0771 WELL NAME L-1 ISLAND MOLOKAI
2. LOCATION: Address Kekaha Kai Landfill Tax Map Key
3. DRILLING OR PUMP INSTALLATION CONTRACTOR Ernest K. Hirota and Assoc.
4. CONTRACTOR'S C-57 LICENSE NUMBER
5. NAME OF DRILLER WHO PERFORMED WORK Owen Adam
6. TYPE OF RIG/CONSTRUCTION Mobile drill B-53
7. DATE OF WELL DRILLING COMPLETION 7/10/92

8. GROUND ELEVATION (msl) ~ 30 ft.
   Top of Drilling Platform (msl) __________ ft.
   Height of Drilling Platform above Ground surface __________ ft.
   Bench Mark and Method Used to Determine Ground Elevation __________ ft.

9. DRILLER'S LOG:

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level</th>
<th>Depth (ft.)</th>
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10. TOTAL DEPTH OF WELL BELOW GROUND __________ ft.

11. HOLE SIZE: __________ inch dia. from __________ ft. to __________ ft. below ground

12. CASING INSTALLED:

   | Schedule | Sch. | x | 4 A 4 A | in. wall solid section to __________ ft. below ground
   |----------|------|---|----------|----------------------------------|

13. ANNULUS:
   Grouted from __________ ft. below ground to __________ ft.
   Gravel packed from __________ ft. below ground to __________ ft.

14. INITIAL WATER LEVEL __________ ft. below ground. Date and time of measurement __________

15. INITIAL CHLORIDE __________ ppm Date and time of sampling __________

16. INITIAL TEMPERATURE __________ °F Date and time of sampling __________

17. DATE OF PUMP INSTALLATION __________

18. PUMP INSTALLATION:

   Pump Type, Make, Serial No. __________
   Capacity __________ gpm
   Motor type, H.P., Voltage, rpm __________
   Depth of Pump Intake Setting __________ ft. below __________, which elevation is __________ ft.
   Depth of bottom of airline __________ ft. below __________, which elevation is __________ ft.
   Pumping Head is __________ ft.

19. PUMPING TESTS:

   | Date | Start water level __________ ft. below R.P. | Start water level __________ ft. below R.P. |
   |      | End water level __________ ft. below R.P.   | End water level __________ ft. below R.P.   |
   |      | Depth of well __________ ft. below R.P.     | Depth of well __________ ft. below R.P.     |
   |      | Elapsed Time (hours) __________ | Rate (ppm) | Draw-down (ft.) | Cl. (ppm) | Temp. °F |
   |      | to                                       | to         | to         | to         | to         |
   |      | to                                       | to         | to         | to         | to         |
   |      | to                                       | to         | to         | to         | to         |
   |      | to                                       | to         | to         | to         | to         |

20. Remarks: Leachate monitors only

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

Contractor (print) Brian and Caldwell
Title Geologist
Signature __________
Date 8/3/92

For Driller's Use:
Job Name __________
Job No. __________

For Official Use:
Well No. __________
Longitude __________
Latitude __________
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
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<tr>
<th>Depth (ft.)</th>
<th>Rock Description, Remarks, Dates</th>
<th>Water Level (ft.)</th>
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19. (cont'd) PUMPING TESTS (cont'd):

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<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
<th>Elapsed Time (hours)</th>
<th>Rate (gpm)</th>
<th>Drawdown (ft.)</th>
<th>Cl- (ppm)</th>
<th>Temp. °F</th>
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Remarks (cont'd):

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BOREHOLE/WELL LOG

LOCATION: 10th Main, Job No. L-10

DATE: 7/3/92

TIME: 9:30 AM

DRILLING CONTRACTOR: Hyper Drilling

RIG TYPE: Mobile Drill R-53

DRILLING METHOD, FLUID USED: 10" OD Hollow Stem Auger

SOIL SAMPLING METHOD: 18" x 2.5"

SURFACE ELEV.: Split spoon

MONITORING INSTRUMENT: GasTech

SURFACE CONDITIONS: Dry soil, trash, metal parts

DESCRIPTION: Soil Type, Color, Moisture, Consistency, Density, Other

D-5: Trash, bed, plastic, diapers

S-10: Trash — same as above

10-15: Trash

About 17: Hit same soil — block

Very smelly borehole — monitor for gases in future

LOGGED BY: Mark Smith

CHECKED BY: Jim Johnson

CERTIFIED BY: John Doe

DATE: 7/3/92

NOTES:

0-3: Lomask, sand

4-5: Nile clay

6-10: Blue
Mr. William W. Paty, Chairperson  
State of Hawaii  
Department of Land and Natural Resources  
Commission on Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Dear Mr. Paty:

SUBJECT: WELL CONSTRUCTION PERMIT FOR KALAMAULA MONITOR WELLS; WELL NOS. 0603-01M TO 09M; KALAMAULA, MOLOKAI

Thank you for your letter dated July 20, 1992 approving our application to construct nine monitor wells at the Kalamaula Sanitary Landfill.

We have reviewed the permit conditions and are in agreement with them. A copy of the permit, which was signed by my Acting Deputy Director of Public Works for myself, is attached for your files.

Thank you once again for your assistance in this matter.

Very truly yours,

GEORGE N. KAYA  
Director of Public Works
TO: County of Maui
Department of Public Works
200 South High Street
Wailuku, HI 96793

In accordance with Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct nine monitor wells (Well Nos. 0603-01M to 09M) at the Kalamaula Sanitary Landfill, TMK: 5-2-11:21, is approved, subject to the following conditions:

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

2. The wells shall be used for ground water quality monitoring, sampling, and testing only.

3. The following shall be submitted to the Commission staff within 30 days after completion of the wells:
   a. Well Completion Reports.
   b. As-built sectional drawings of the wells.
   c. Plot plan and map showing the exact locations of the wells.
   d. Periodic reports of monitoring and testing results.

4. The applicant shall comply with all applicable laws, rules, and ordinances.
WELL CONSTRUCTION PERMIT
Well Nos. 0603-01M to 09M

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.

6. Upon completion of monitoring operations, the applicant shall obtain a well construction permit to seal the wells with cement grout in a manner approved by the Commission staff.

[Signature]
WILLIAM W. PATY, Chairman
Commission on Water Resource Management

JUL 20 1992
Date of Issuance

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

Applicant's Signature: [Signature] Date: 7-28-92
Printed Name: George N. Kaya
Firm or Title: Director of Public Works

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

Enc. (Well Completion Report form)
c: USGS
   Department of Health
      Safe Drinking Water Branch
      Solid and Hazardous Waste Branch
      Ground Water Protection Program
      Maui Department of Water Supply
State of Hawaii  
COMMISION ON WATER RESOURCE MANAGEMENT  
Department of Land and Natural Resources

WELL COMPLETION REPORT

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96810. An as-built drawing of the well and chemical analysis should also be submitted. For assistance call the Commission Regulation Branch at 587-0225.

1. STATE WELL NO.  WELL NAME  ISLAND
2. LOCATION: Address  Tax Map Key:
3. DRILLING OR PUMP INSTALLATION CONTRACTOR
4. CONTRACTOR'S C-57 LICENSE NUMBER
5. NAME OF DRILLER WHO PERFORMED WORK
6. TYPE OF RIG/CONSTRUCTION
7. DATE OF WELL DRILLING COMPLETION  
(NOTE: Report must be submitted within 30 days after this entry)

8. GROUND ELEVATION (msl)  ft.  
Top of Drilling Platform (msl)  ft.  
Height of Drilling Platform above Ground surface  ft.  
Bench Mark and Method Used to Determine Ground Elevation  ft.

9. DRILLER'S LOG:  

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

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

10. TOTAL DEPTH OF WELL BELOW GROUND  ft.

11. HOLE SIZE:  
in. dia. from  ft. to  ft. below ground
in. dia. from  ft. to  ft. below ground
in. dia. from  ft. to  ft. below ground

12. 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
Type of Perforation

13. ANNULUS:  
Grouted from  ft. below ground to  ft. below ground
Gravel packed from  ft. below ground to  ft. below ground

14. INITIAL WATER LEVEL  ft. below ground. Date and time of measurement

15. INITIAL CHLORIDE  ppm  Date and time of sampling

16. INITIAL TEMPERATURE  °F Date and time of sampling

17. DATE OF PUMP INSTALLATION

18. PUMP INSTALLATION:

Pump Type, Make, Serial No.  Capacity  gpm  
Motor type, H.P., Voltage, rpm
Depth of Pump Intake Setting  ft. below  , which elevation is  ft.
Depth of bottom of airline  ft. below  , which elevation is  ft.

Pumping Head is  ft.

19. PUMPING TESTS:  

Reference Point (R.P.) used:  , which elevation is  ft.

<table>
<thead>
<tr>
<th>Date</th>
<th>Start water level  ft. below R.P.</th>
<th>Start water level  ft. below R.P.</th>
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<tbody>
<tr>
<td></td>
<td>End water level  ft. below R.P.</td>
<td>End water level  ft. below R.P.</td>
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<td>Depth of well  ft. below R.P.</td>
<td>Depth of well  ft. below R.P.</td>
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Elapsed Rate Draw- Cl- Temp. Elapsed Rate Draw- Cl- Temp.  
Time (hours) (ppm) down (ft.) (ppm) °F Time (hours) (ppm) down (ft.) (ppm) °F

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Remarks:

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

Contractor (print)  
Title  
Signature  
Date

For Driller's Use:  
Job Name  
Job No.

For Official Use:  
Well No.  
Longitude  
Latitude
9. (cont'd) DRILLER'S LOG (cont'd):

<table>
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<th>Rock Description, Remarks, Dates</th>
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19. (cont'd) PUMPING TESTS (cont'd):

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Remarks (cont'd):

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July 27, 1992

The Commission on Water Resource Management staff
P.O. Box 621
Honolulu, Hawaii 96809

Subject: Monitoring Hole Construction at the Kalamaula Sanitary Landfill on the Island of Molokai

Thank you for approving the County of Maui's permit to construct nine monitoring holes at the Kalamaula Sanitary Landfill on the Island of Molokai. Brown and Caldwell is assisting the County in constructing these holes.

The purpose of this letter is to notify you that we are beginning construction of the monitoring holes today (July 27, 1992). If you have any questions or concerns, please contact me or Mr. Brian Hashiro (243-7875).

Very truly yours,

BROWN AND CALDWELL

Westley K.C. Chun
Project Coordinator

cc: Mr. B. Hashiro, County of Maui, DPW Solid Waste Division
    Mr. P.A. Scheidegger, Brown and Caldwell, Pleasant Hill
July 27, 1992

The Commission on Water Resource Management staff  
P.O. Box 621  
Honolulu, Hawaii 96809

Subject: Monitoring Hole Construction at the Kalamaula Sanitary Landfill on the Island of Molokai

Thank you for approving the County of Maui's permit to construct nine monitoring holes at the Kalamaula Sanitary Landfill on the Island of Molokai. Brown and Caldwell is assisting the County in constructing these holes.

The purpose of this letter is to notify you that we are beginning construction of the monitoring holes today (July 27, 1992). If you have any questions or concerns, please contact me or Mr. Brian Hashiro (243-7875).

Very truly yours,

BROWN AND CALDWEBLL

Westley R.C. Chun  
Project Coordinator

WKC:

cc: Mr. B. Hashiro, County of Maui, DFW Solid Waste Division  
Mr. P.A. Scheidegger, Brown and Caldwell, Pleasant Hill
TO: County of Maui  
Department of Public Works  
200 South High Street  
Wailuku, HI 96793

In accordance with Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct nine monitor wells (Well Nos. 0603-01M to 09M) at the Kalamaula Sanitary Landfill, TMK: 5-2-11:21, is approved, subject to the following conditions:

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

2. The wells shall be used for ground water quality monitoring, sampling, and testing only.

3. The following shall be submitted to the Commission staff within 30 days after completion of the wells:
   a. Well Completion Reports.
   b. As-built sectional drawings of the wells.
   c. Plot plan and map showing the exact locations of the wells.
   d. Periodic reports of monitoring and testing results.

4. The applicant shall comply with all applicable laws, rules, and ordinances.
WELL CONSTRUCTION PERMIT
Well Nos. 0603-01M to 09M

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.

6. Upon completion of monitoring operations, the applicant shall obtain a well construction permit to seal the wells with cement grout in a manner approved by the Commission staff.

[Signature]
WILLIAM W. PATY, Chairman
Commission on Water Resource Management

JUL 20 1992
Date of Issuance

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

Applicant’s Signature: ___________________________ Date: ____________________

Printed Name: ________________________________

Firm or Title: _________________________________

Please sign and return one copy of this permit to the Commission and retain a copy for your record.

Enc. (Well Completion Report form)
c: USGS
Department of Health
Safe Drinking Water Branch
Solid and Hazardous Waste Branch
Ground Water Protection Program
Maui Department of Water Supply
COMMISSION ON RESOURCE MANAGEMENT

FROM: __________ DATE: 7/7/92 FILE IN: __________

TO: _______ INIT: _______ PLEASE: _______ REMARKS: _______

G. Matsumoto See Me __________

E. Sakoda Call __________

Y. Shiroma Review & Comment __________

E. Hirano Take Action __________

S. Samuels Investigate & Report __________

G. Bauer Draft Reply __________

B. Rozeboom Acknowledge Receipt __________

R. Hardy Type Draft __________

Type Final __________

Xerox ____ copies __________

FOR YOUR: _______ _______ _______ _______

R. LOUI Approval __________

S. Kokubun Signature __________

Information __________

--- Vortex holes wanted? ---
Division of Water Resource Management  
P. O. Box 621  
Honolulu, Hawaii 96809

Gentlemen:

SUBJECT: KALAMAULA SANITARY LANDFILL CLOSURE - WELL CONSTRUCTION PERMIT APPLICATION

The County of Maui is planning to close the Kalamaula Sanitary Landfill on the island of Molokai. Approximately nine (9) boreholes will be needed to assess the hydrogeological conditions at the landfill site. These boreholes will be used to measure groundwater levels and allow groundwater and soil sampling.

We are therefore enclosing our well construction permit application for these boreholes as well as a site map of the approximate locations of these boreholes. It is our understanding that the $25.00 filing fee is waived for government agencies, such as the County of Maui's Department of Public Works.

Please feel free to call my Solid Waste Division Chief, Brian Hashiro, at telephone 243-7875 should there be any questions.

Very truly yours,

GEORGE N. KAYA  
Director of Public Works

Enclosures
APPLICATION FOR: ☐ Well Construction or ☐ Pump Installation PERMIT

Instructions: Please print or type and send completed application with attachments to the Div. of Water Resource Management, P.O. Box 735, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of $25.00 payable to the Dept. of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7643, Hydrology/Geology Section for assistance.

1. WELL LOCATION/NAME: Kalamaua Landfill
   Address: Kalamaua, Molokai, Hawaii
   Tax Map Key: 5-2-11:21
   (Attach a USGS map, scale 1",-2000", and a property tax map showing well location referenced to established property boundaries.)

2. (a) WELL OWNER: (Subject to negotiation)
   Firm Name: County of Maui
   Contact Person: Brian Hashiro
   Address: 200 S. High Street
   Wailuku, HI 96793 Ph: (808)243-7875

   (b) LANDOWNER:
   Firm Name: Dept. of Hawaiian Homelands
   Contact Person: Rodney Asada
   Address: P.O. Box 1879
   Honolulu, HI 96805 Ph: 586-3821

3. PROPOSED CONTRACTOR:
   Name: Ernest K. Hirata & Associates, Inc.
   Address: 99-1433 Koaha Place
   Aiea, HI 96701-3279
   Contractor's License No.: ph. (808) 486-0787

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.) ☐ Military
   ☐ Domestic (individual, noncommercial water sys.) ☐ Industrial
   ☐ Irrigation (specify) ☐ Other (specify) ☐ Monitoring Hole

6. PROPOSED AMOUNT OF WITHDRAWAL: 0 gallons per day monitoring hole

7. PROPOSED PUMP INFORMATION: None
   Pump Type: ☐ Vertical Turbine ☐ Diesel
   ☐ Submersible ☐ Gas
   ☐ Centrifugal ☐ Electric, at a rated horsepower of ______
   Rated Pump Capacity: Gallons per minute ______

For Official Use Only:
Field Check/ld Date 8/1992
Hydrologic Unit
State Well No. 0603-DIM 09M

Well Owner (print) COUNTY OF MAUl
Signature: __________________________ Date: 5/28/92
Landowner (print) Dept. of Hawaiian Homelands
State of Hawaii
Signature: __________________________ Date: 6/4/92
Hawaiian Homes Commission

For Official Use Only:
Field Checked By __________________________ Date __________________________
Latitude __________________________ Longitude __________________________
Hydrologic Unit
State Well No. 0603-DIM 09M

KALAMAULA MON.
Briefly describe the proposed work:

DRILL 9 BOREHOLES. COMPLETE 7 AS 4-INCH-DIAMETER MONITORING HOLE APPROXIMATELY 30 FEET DEEP WITH 10 FOOT SCREENS. COMPLETE ONE AS A 4-INCH-DIAMETER MONITORING HOLE NO DEEPER THAN 75 FEET WITH APPROXIMATELY 10 FOOT SCREEN. COMPLETE ONE AS 4-INCH-DIAMETER LEACHATE HOLE APPROXIMATELY 20-FOOT-DEEP TO BASE OF LANDFILL.

PROPOSED SECTION OF WELL

Elevation at top of casing:
Variable ft., msl. depending on well location

Ground Elevation: ft., msl*

Cement Grout: Variable ft. depending on depth of well

Solid Casing:
Material PVC
Length Variable depending on ft.
Diameter 4" in.
Wall thickness SCH 40 in.

Hole Diameter: 12" in.

Casing: □ Perforated □ Screen

Total Depth: 20, 30, 75 ft.

Material PVC
Length approximately 10' ft.
Diameter 4" in.
Wall thickness SCH 40 in.
Openings .020 sq. in./L.F.

Rock Packing: 12' ft.

Open Hole: NO

Length
Diameter

*Approximate elevation at time of filing application. Final elevation (msl) by a surveyor licensed by the State must be submitted at start of construction.
Proposed Shallow Well Locations

Proposed Deep Well Locations

Leachate Monitor Well locations

Figure 1 Location of Proposed Monitoring Wells