Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-31-87
Job No. 42-HW
Description: OLA #3
Driller: Charles
Rig: 36-2
Shift: Day

Engineer:                  Phone: ________________________________

Starting Depth: 652       Finish Depth: 655       Footage Drilled: 3'
Static Water level: _____ Ft. Time: ________
                   _____ Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
</tbody>
</table>
| 652   | 655                  | Red clay - Sea Clinken
                   | Water, Sinking Tree |

Notes and Remarks: Build hole out this morning only got about 1gal of Cutting in hole. Water looks clean, it's a good water, Sinking rock.

Bits used: 22" bit
Mud used: ________________________________
Materials and supplies used: ________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-30-87

Job No. 42-HWA Description: OLAA #3

Driller: Charles Rig: 36-C Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: 642 Finish Depth: 652 Footage Drilled: 10'

Static Water level: _______ Ft. Time: _______

Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>642-648</td>
<td>Gray Hard Lava</td>
<td></td>
</tr>
<tr>
<td>648-652</td>
<td>Red &amp; Gray Clinkers</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
Bailed hole out after setting overnight, water very thick and dirty (at 642' Depth).

At 648' to 652' hit more water in the clinkers.

Bailed hole out but only got about gallon of clinker yet bit hole.

Bits used: 32 Bit
Mud used: ___________________

Materials and supplies used: ___________________
## Daily Drilling Report

**Hawaiian Islands Drilling, Inc.**  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956  

**Date:** 12-29-87  
**Job No.:** 42-HWA  
**Description:** OLAA  

**Driller:** Charles  
**Rig:** 36-1  
**Shift:** Day  

**Engineer:**  
Phone:  

**Starting Depth:** 630  
**Finish Depth:** 642  
**Footage Drilled:** 12'  

**Static Water Level:**  
**Ft. Time:**  

**Drilling Log:**  
<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>630</td>
<td>GRAY &amp; RED LAVA</td>
<td>SOFT</td>
</tr>
</tbody>
</table>

**Notes and Remarks:**  
We are still seeing cuttings in this formation. I don’t know how much water there is in this type of rock, but based on today’s drilling, we do not see any cuttings yet.  

**Bits used:** 20" BIIT  
**Mud used:**  

**Materials and supplies used:**  

---
Date: 12-28-87

Job No. 42-H62A  Description: OIAA #3

Driller: Charles  Rg: 36-2  Shift: clay

Engineer:  Phone:

Starting Depth: 623  Finish Depth: 630  Footage Drilled: 7'

Static Water level:  Ft. Time:  

Drilling Log:

From  To  Description  Drilling Rate
623  624  gray, hard lava
624  630  gray, red lava, soft

Notes and Remarks: Side drilling to hold hole straight

Bits used: 22 Bit  Mud used: 

Materials and supplies used: 
Date: 1-4-88

Job No. 42-HWA Description: OLAA #3

Driller: Chuck Rig: 3C-L Shift: Clay

Engineer: __________________________ Phone: __________________________

Starting Depth: 655 Finish Depth: 658 Footage Drilled: 3'

Static Water level: __________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>655</td>
<td>Radtayaid Brown SOFT LAKA Clinker</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: water bearing rock slow drilling.

Bits used: 22 BIT Mud used: __________________________

Materials and supplies used: __________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 1-5-88

Job No. 42-HWA  Description: OLMA N3

Driller: Chuck  Rig: X-L  Shift: Day

Engineer:  Phone: 

Starting Depth: 658'  Finish Depth: 858'  Footage Drilled: 200'

Static Water level:  Ft.  Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>658'</td>
<td>658'</td>
<td>Hard Gray Lava</td>
<td></td>
</tr>
<tr>
<td>658'</td>
<td>362'</td>
<td></td>
<td>11</td>
</tr>
</tbody>
</table>

Notes and Remarks: Drilling big hole. Hit sand guy
Lava rock. Very slow going

Bits used: 22" Bit  Mud used: 

Materials and supplies used: 
Date: 12-23-87

Job No.: 42, HWA
Description: PLLA #3 3003-01

Driller: Charlie
Rig: 36-L
Shift: Dog

Engineer: __________________________ Phone: ______________________

Starting Depth: 620
Finish Depth: 623
Footage Drilled: 3'

Static Water level: _______ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>620</td>
<td>623</td>
<td>Black &amp; Gray Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Sid. drilling to build hole straight

Bits used: 22" Bit
Mud used: ____________________________

Materials and supplies used: ____________________________
Date: 12-22-87

Job No. 42-HICA  Description: OLAA K3 3603.01

Driller: Charles  Rig: J-4  Shift: Day

Engineer:  Phone: ______________________

Starting Depth: 617  Finish Depth: 620  Footage Drilled: 3'

Static Water level:  Ft. Time: ______________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>617</td>
<td>620</td>
<td>RUSTY GRAY LAGA</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Drilling hole is dropping straight, still trying to drill off sil clay.

Bits used: 2A-BIT  Mud used: ______________________

Materials and supplies used: ______________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

**Job No.** 42-HUA

**Description:** OLAA 3 3607.01

**Driller:** Charlie

**Rig:** 36-C

**Shift:** Day

**Date:** 12-21-87

**Starting Depth:** 610' 
**Finish Depth:** 6-17' 
**Footage Drilled:** 7'

**Engineer:** ____________________________  
**Phone:** ____________________________

**Static Water Level:** 357' 
**Ft. Time:** About

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>610</td>
<td>615</td>
<td>Red Gray Lava</td>
<td></td>
</tr>
<tr>
<td>615</td>
<td>617</td>
<td>Red Gray Clinker</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:** 
Rock is still trying to shift.  
Rock is water bearing area.  Confused one,  
Till there is about 60' of water in hole. 

**Bits used:** 22 BIT  
**Mud used:** ____________________________

**Materials and supplies used:** ____________________________
Date: 12-19-87

Job No.: 47-HWA  Description: OLA-43  3603-01

Driller: Charles  Rig: 36-C  Shift: Clay

Engineer:  Phone:

Starting Depth: 605  Finish Depth: 610  Footage Drilled: 5'

Static Water level:  Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>605</td>
<td>Gray Lava Hard</td>
<td></td>
</tr>
<tr>
<td>607</td>
<td>Red Gray Cinders -</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Red Gray Clay</td>
<td></td>
</tr>
<tr>
<td>610</td>
<td>Hit Water at 607'</td>
<td>Approximately 20' of water.</td>
</tr>
</tbody>
</table>

Notes and Remarks: Holia is still trying to shift. Hole drilling and using same metal in bottom hole to keep hole straight.

Bits used: 22'BIT  Mud used:  

Materials and supplies used:  
Job No. 42-HWA Description: OluKai #3 3603-01

Driller: Chuck Drilling Rig: 76-6 Shift: Day

Engineer: ______________________ Phone: ______________________

Starting Depth: 600 Finish Depth: 605 Footage Drilled: 5'

Static Water level: _____ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>600</td>
<td>GrayLava</td>
<td>hard</td>
</tr>
</tbody>
</table>

Notes and Remarks: Raised today. Hole is still trying to drift off. We are holding high straight by using a little metal in bottom of hole today.

Bits used: 220' Drilling Mud used: 

Materials and supplies used: ____________________________
Date: 12-17-87

Job No.: 42-HWA  
Description: OLAA 43  3603-01

Driller: Charles  
Rig: 36-L  
Shift: Clay

Engineer:  
Phone:  

Starting Depth: 592'  
Finish Depth: 600  
Footage Drilled: 8'

Static Water level:  
Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>592</td>
<td>600</td>
<td>LIGHT GRAY LAVA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5'</td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is trying to drift off. Scheduling on Daylig.

Bits used: 22" Bit  
Mud used:  

Materials and supplies used:  

DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-16-87

Job No. 42-HWA Description: OLAA #3 3603-01

Driller: ____________ Rig: 36-1 Shift: ____________

Engineer: ____________ Phone: ____________

Starting Depth: 580' Finish Depth: 592' Footage Drilled: 12'

Static Water level: ____________ Ft. Time: ____________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>580</td>
<td>Red Clay Chinkers</td>
<td></td>
</tr>
<tr>
<td>585</td>
<td>Red Clay Chinkers Very Soft</td>
<td></td>
</tr>
<tr>
<td>591</td>
<td>Gray Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22'Bit Mud used: ____________________________

Materials and supplies used: ____________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-15-87

Job No.: 42-H1A
Description: OHA #3 3603-01

Driller: Chulu
Rig: J6-L
Shift: Day

Engineer: Phone:

Starting Depth: 575
Finish Depth: 580
Footage Drilled: 5'  

Static Water level: Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>575</td>
<td>Gray + Red Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Note is trying to drift off. Soil drilling well off in better alignment of hole.

Bits used: 22'' Bit
Mud used: ____________________________

Materials and supplies used: ____________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-14-87

Job No.: 42-HWA
Description: OLA# 73

Driller: Chula
Rig: 36-4
Shift: Day

Engineer: Phone:

Starting Depth: 570
Finish Depth: 575
Footage Drilled: 5

Static Water level: ______
Ft. Time:

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>570</td>
<td>Red &amp; Gray Clinkers</td>
<td></td>
</tr>
<tr>
<td>575</td>
<td>Red &amp; Gray Clinkers</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Bits used: 22" Bit
Mud used: ___________________

Materials and supplies used: ___________________
Date: 12-12-87

Job No.: 42-HWA

Description: DLAA #3

Driller: Charles

Rig: 36-6

Shift: Day

Engineer: 

Phone: 

Starting Depth: 557

Finish Depth: 570

Footage Drilled: 13'

Static Water level: 

Ft. Time: 

Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>557</td>
<td>Gray + Red Lava</td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>Gray + Red Lava</td>
<td></td>
</tr>
<tr>
<td>565</td>
<td>Gray + Red Lava Gray Sand</td>
<td></td>
</tr>
<tr>
<td>570</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22 BIT

Mud used: 

Materials and supplies used: 


Date: **12-11-87**

Job No.: **42-44A**  
Description: **OLAA 7**  
**3605.01**

**Driller:** Chico  
**Rig:** J6-4  
**Shift:** Day

**Engineer:**  
**Phone:**

Starting Depth: **557**  
Finish Depth:  
Footage Drilled:

Static Water level:  
Ft. Time:

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>557</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**  
Started to drill  
Rained out

**Bits used:** **22" BIT**  
Mud used:  

**Materials and supplies used:**
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-10-87

Job No. 42-HWA  Description: OLAH #3  0903-01

Driller: Charles  Rig: 36-C  Shift: Day

Starting Depth: ______  Finish Depth: ______  Footage Drilled: ______

Static Water level: ______  Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Stung up drilling string

Bits used: ___________  Mud used: ___________

Materials and supplies used: ______________________________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813  DEC 23  A 8:25
Phone: 808-523-8956

Date: 12-9-87

Job No. 42-HWA Description: OLAH #3 3603-01

Driller: Chuck Rig: X-1 Shift: clay

Engineer: ___________________ Phone: ___________________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: ________

Static Water level: ________ Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
</table>

Notes and Remarks: Waiting on drill stage to be repaired

Bits used: ___________________ Mud used: ___________________

Materials and supplies used: ___________________________________
Date: 12-8-87

Job No. 42-HWR Description: OLAA #3 3603-01

Driller: Charles Rig: 36-6 Shift: day

Engineer: ______________________ Phone: ______________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______

Static Water level: _______ Ft. Time: _______

Ft. Time: ______________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Waiting on drill stem to be repaired

Bits used: ___________________ Mud used: ___________________

Materials and supplies used: ____________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-7-87

Job No. 42-HW-4 Description: OLMA 43 3603-01

Driller: Charles Rig: K-1 Shift: day

Engineer: ___________________ Phone: ___________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______

Static Water level: _______ Ft. Time: _______

Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Waiting on drill stem for repair.

Bits used: ____________ Mud used: _________________________

Materials and supplies used: ________________________________
Date: 12-5-87

Job No. 42-HW4 Description: OLA #3 3603-01

Driller: Tondek Rig: 36-6 Shift: Day

Engineer: ____________________ Phone: ____________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______

Static Water level: _______ Ft. Time: _______

Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hot fish on Bank. Getting another set of drilling tool, located at lot can start drill by Monday, 12-10.

Bits used: 22 Bit Mud used: ____________________

Materials and supplies used: ____________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-4-57

Job No. 42-HW-4A Description: DLHA #3 3603-01

Driller: [Name] Rig: 36-C Shift: Day

Engineer: [Name] Phone: [Number]

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______

Static Water level: _______ Ft. Time: _______

Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22 Bit Mud used: ____________________________

Materials and supplies used: ____________________________

___________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-522-8956

Date: 12-3-87

Job No. 42-HWA Description: OLAA 47 3003-01

Driller: Charles
Rig: 3K-1
Shift: Day

Engineer: Phone: ____________________

Starting Depth: 545
Finish Depth: 557
Footage Drilled: 12'

Static Water level: __________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 545</td>
<td>To 557</td>
<td></td>
</tr>
<tr>
<td></td>
<td>hot &amp; grey &amp; black lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Break pin off on top of stem. Got to go fishing again. Lots of fun!

Bits used: 22\" BIT
Mud used: __________________________

Materials and supplies used: __________________________
Date: 12-2-87

Job No. 42-HWA Description: OLNA #3 3603-01

Driller: Charles Rig: 36-1 Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: 525 Finish Depth: 545 Footage Drilled: 20'

Static Water level: ______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>525</td>
<td>535</td>
<td>Red Black and Gray Clinkers</td>
<td></td>
</tr>
<tr>
<td>535</td>
<td>539</td>
<td>Lost Drill Cutting</td>
<td></td>
</tr>
<tr>
<td>539</td>
<td>543</td>
<td>Red Black and Gray Clinkers</td>
<td></td>
</tr>
<tr>
<td>543</td>
<td>545</td>
<td>Gray Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: At 539' to 543' depth water looks cleaner, may have hit more water or steam.

Bits used: 22"Rit Mud used: ____________________

Materials and supplies used: ________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 12-1-87

Job No. 42-HOA Description: OLAH 43 3603 01
Driller: Charlie Rig: 36-1 Shift: Day
Engineer: ______________________ Phone: ______________________

Starting Depth: 515 Finish Depth: 525 Footage Drilled: 10'
Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>515-520</td>
<td>Black lava, Black sand</td>
<td></td>
</tr>
<tr>
<td>520-525</td>
<td>Red Black grey Chalk</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" BIT Mud used: ________________________________

Materials and supplies used: ___________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **11-30-87**

Job No. **42-HWA** Description: **OLAE**

Driller: **Chad** Rig: **3-52** Shift: **Day**

Engineer: Phone:

Starting Depth: **507** Finish Depth: **515** Footage Drilled: **8'**

Static Water level: _______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>507</td>
<td>515</td>
<td>Red clay, clay</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: **Hole went to drift some had to side drill on side to hold hole straight**

Bits used: **22" Bit** Mud used: 

Materials and supplies used: ____________________________
Date: 11-28-87
Job No. 42-HWA Description: OLAA #3 3003-01
Driller: Clark  Rig: 36-2  Shift: Day
Engineer: Phone: ______________________________
Starting Depth: 498  Finish Depth: 567  Footage Drilled: 9'
Static Water level: _______ Ft. Time: _______
_________ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>498</td>
<td>505</td>
<td></td>
</tr>
<tr>
<td>505</td>
<td>506</td>
<td></td>
</tr>
<tr>
<td>506</td>
<td>587</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole caved in 4' had to redrill out to bottom of hole.

Bits used: 22 Bit  Mud used: ______________________________

Materials and supplies used: ______________________________
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-27-87
Job No. 42-HWA Description: OMA #3 3003-01
Driller: Charles Rig: 36-1 Shift: Day
Engineer: ___________________________ Phone: ___________________________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: ________
Static Water level: ________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained out

Bits used: __________ Mud used: _________________________

Materials and supplies used: ____________________________________________
Date: 11-26-87

Job No. 42-HWA Description: OHA #3 3603-01

Driller: Chuck  Rig: 36-L  Shift: off

Engineer:  Phone:  

Starting Depth:  Finish Depth:  Footage Drilled: 

Static Water level:  Ft. Time:  

Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Thanksgiving

Bits used:  Mud used: 

Materials and supplies used:  
Date: 11-25-87

Job No. 42-HWA Description: OLAA #3

Driller: Charles Rig: 36-C Shift: clay

Engineer: ______________________ Phone: ______________________

Starting Depth: 488 Finish Depth: 498 Footage Drilled: 10'

Static Water level: ______ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>488</td>
<td>498</td>
<td>Brown gray red lava</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22' bit Mud used: ______________________

Materials and supplies used: ______________________
Date: 11-24-87

Job No. 42-HAWA Description: OLAA #3 3603.01

Driller: Charles              Engine: Phone: 

Rig: 36-1                     

Shift: Day

Starting Depth: 482

Finish Depth: 488

Footage Drilled: 6'

Static Water level: 

Ft. Time: 

Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>482</td>
<td>488</td>
<td>Brown + Red clay, firm lnt.</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is trying to shift some. Did drilling to hold hole straight.

Bits used: 22" BIT

Mud used: 

Materials and supplies used: 


DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-23-87
Job No. 42-HWA Description: OMA #3 3603-01
Driller: Charles Rig: 36-1 Shift: day
Engineer: ___________________ Phone: ___________________
Starting Depth: 475 Finishing Depth: 482 Footage Drilled: 7'
Static Water level: __________ Ft. Time: __________
____________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>475</td>
<td>480</td>
<td>Red clay</td>
<td></td>
</tr>
<tr>
<td>480</td>
<td>482</td>
<td>Hard grey &amp; Red clay soft</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" Bit Mud used: ____________________

Materials and supplies used: ____________________
Date: 11-21-87

Job No. 42-HWA Description: OLAA #3 3603-01

Driller: Charles  Rig: 3G-C  Shift: Day

Engineer: ______________________  Phone: ________________________

Starting Depth: 470  Finish Depth: 475  Footage Drilled: 5'

Static Water level: _______  Ft. Time: _______

Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>470</td>
<td>Raw Clay Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" Bit  Mud used: __________________________

Materials and supplies used: _______________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-20-87

Job No. 42-HWA  Description: DLAA 143  3603-01

Driller: Chuck  Rig: 36-C  Shift: Day

Engineer:  Phone: 

Starting Depth: 450  Finish Depth: 470  Footage Drilled: 20'

Static Water level:  Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>450</td>
<td>Silt clay, Red+gray sand</td>
<td></td>
</tr>
<tr>
<td>455</td>
<td></td>
<td></td>
</tr>
<tr>
<td>465</td>
<td>Red clay and gravel, Red clay</td>
<td></td>
</tr>
<tr>
<td>470</td>
<td>Hard Gray Basalt</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Fish on bank, started to drill

Bits used: 22 Bit  Mud used:  

Materials and supplies used:  
DATE: 11-20-87

Job No.: 42-HWA  Description: OLAA #3

Driller:  ____________________  Rig: 36-L  Shift:  day

Engineer: ____________________  Phone: ____________________

Starting Depth: ________  Finish Depth: ________  Footage Drilled: ________

Static Water level: ________  Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained out

Bits used: 22 Bit  Mud used: ____________________

Materials and supplies used: ____________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **11-18-87**

Job No: 42-HWA
Description: OLAA #3 76 ft

Driller: Charles
Rig: 36-4
Shift: Day

Engineer: ________________
Phone: ________________

Starting Depth: **449**
Finish Depth: **450**
Footage Drilled: **1**

Static Water level: ______ Ft.
Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>449</td>
<td>HARD CLAY LAVA</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Tool in hole cable broke off socket. Fishing for tool

Bits used: **22" BIT**
Mud used: ________________

Materials and supplies used: ____________________________________________
Date: 11-17-87

Job No. 42-HWA  Description: Olaa #3  7663-01

Driller: Charles  Rig: 36-k  Shift: Clay

Engineer: Phone:

Starting Depth: 430'  Finish Depth: 449'  Footage Drilled: 19'

Static Water Level:  Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>430</td>
<td>439</td>
<td>Gray Lava &amp; Gray Clay</td>
<td></td>
</tr>
<tr>
<td>437</td>
<td>444</td>
<td>Gray &amp; Red Clay</td>
<td></td>
</tr>
<tr>
<td>444</td>
<td>449</td>
<td>Gray Lava Hard</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" Bit  Mud used:

Materials and supplies used:__________________________________________
Date: 11-16-87

Job No. 42-HUA  Description: OLAAN #3 3603.01

Driller: Charles  Rig: 36-L  Shift: Day

Engineer:  Phone:

Starting Depth: 418'  Finish Depth: 430'  Footage Drilled: 12'

Static Water level:  ________  Ft. Time:  ________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>418</td>
<td>430</td>
<td>GRAY LAVA</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Some gray mud slidding in from about 398' when setting over night.

Bits used: 22" Bit  Mud used:  

Materials and supplies used:  

DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-14-87

Job No.: 42-HUA
Description: OLAKA #3 7603' 01

Driller: Charlie
Rig: 36-L
Shift: Day

Engineer: 
Phone: 

Starting Depth: 406'
Finish Depth: 418'
Footage Drilled: 12'

Static Water level: 
Ft. Time: 

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>406</td>
<td>Gray Lava</td>
<td></td>
</tr>
<tr>
<td>409</td>
<td></td>
<td></td>
</tr>
<tr>
<td>407</td>
<td>Ah Ah Red Berry Broken Rock</td>
<td></td>
</tr>
<tr>
<td>418</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is suffiing in around rope rock bottom area. This area cement did not hold up Loss of water climbing area washed cement out of ground.

Bits used: 22 Bit
Mud used: 

Materials and supplies used: 

---
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **11-12-87**

Job No. **42-HWA** Description: **OLAA #3 7603.01**

Driller: **Clark** Rig: **36-2** Shift: __________

Engineer: ______________________ Phone: ______________________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: ________

Static Water level: _________ Ft. Time: ________

Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: **Raiser Out**

Bits used: ______________________ Mud used: ______________________

Materials and supplies used: ______________________
DAILY DRILLING REPORT

Date: 11-12-87

Job No. 42-HUA Description: PLAA #3 3603-01

Driller: Charles Rig: 36-4 Shift: Day

Engineer: Phone:

Starting Depth: ______ Finish Depth: ______ Footage Drilled: ______

Static Water level: ______ Ft. Time: ______

Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>406</td>
<td>Drilling out cement</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Cement did not set up from 396' to 405' Casing is around bit now.

Bits used: 22" Bit  Mud used: ________________

Materials and supplies used: __________________________
Date: 11-11-87
Job No: 42-HWA  Description: OLAA #3 7604-01
Driller: Chuck  Rig: 36-E  Shift: ______________________
Engineer: ______________________  Phone: ______________________
Starting Depth: ________  Finish Depth: ________  Footage Drilled: ________
Static Water level: ________  Ft. Time: ________
Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Holiday

Bits used: ________  Mud used: ________
Materials and supplies used: ________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

**Date:** 11-10-87  
**Rig:** 36-1  
**Shift:** day

<table>
<thead>
<tr>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drilling and Cement</td>
<td></td>
</tr>
</tbody>
</table>

**Engineer:** Phone:

**Starting Depth:** 390  
**Finish Depth:** 400  
**Footage Drilled:**

**Static Water level:** Ft. Time: |

**Notes and Remarks:** 392' to 394' small stream of water washed cement out of group mix, hole caved in some in this area.

**Bits used:** 22

**Materials and supplies used:**
DAILY DRILLING REPORT

Date: 11-9-87

Job No. 42-HW

Description: OLAA 43 7609.01

Driller: Chuck

Rig: 36-L

Shift: Day

Engineer: 

Phone: 

Starting Depth: Finish Depth: Footage Drilled: 

Static Water level: Ft. Time: 

Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>390</td>
<td>395</td>
<td></td>
</tr>
<tr>
<td>395</td>
<td>400</td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>405</td>
<td></td>
</tr>
</tbody>
</table>

Drilling out cement

Notes and Remarks: Changed bits during bit also welded chisel section of bit. Started drilling at 2:00 PM.

100 yds of cement filled hole from 396' up to 379'.

Total of cement in hole was 15 ft. more.

Bits used: 22" bit. Mud used: 

Materials and supplies used: 

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

□ DAILY DRILLING REPORT

□ RECEIVED

□ DWT

□ OLDP

□ LAND DEVELOPMENT

□ DWT

□ OLDP

□ LAND DEVELOPMENT
Date: 11-7-87

Job No. 42-HWA Description: OLAA #3 7604.01

Driller: Charlie Rig: 36-B Shift: Day

Engineer: Phone:

Starting Depth: Finish Depth: Footage Drilled:

Static Water level: Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Poured 10 yds of cement.

9:30 A.M. Rained

Bits used: Mud used:

Materials and supplies used: 
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-9-87

Job No. 42-HW

Description: OLAA #3 3603-01

Driller: Chuck
Rig: 36-E
Shift: Day

Engineer: ____________
Phone: ____________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: ________

Static Water level: ________ Ft. Time: ________

Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>383</td>
<td>396</td>
<td>Drilling out Cement</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

6 P.M. Going to pump 10 Yd. of cement down hole. Resume at 9:00 A.M.

Hole too large and still caving in.

Bits used: ____________________ Mud used: ____________________

Materials and supplies used: ____________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

**Date:** 11-5-87  
**Job No.:** 42-HW/C  
**Description:** OLA #3  
**Rig:** K-1  
**Shift:** Day  

**Engineer:**  
**Phone:**

**Starting Depth:**  
**Finish Depth:**  
**Footage Drilled:**

**Drill Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>No Footage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Drilled out Cutting Pound Cement</td>
<td></td>
</tr>
</tbody>
</table>

**Static Water Level:** 384.5'  
**Time:** PM

**Notes and Remarks:**

Poured 7 yards of cement along hole. There was no set up in hole. We had about 15' of water in bottom of hole.

**Bits used:**  
**Mud used:**

**Materials and supplies used:**
# DAILY DRILLING REPORT

**Date:** 11-4-87

**Job No.** 42-1114

**Description:** ALAA #3

**Start Depth:** 1403

**Finish Depth:** 405

**Footage Drilled:** 1

**Static Water Level:** 276

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1403</td>
<td>405</td>
<td>Redrilling Grain East in</td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>406</td>
<td>Gray hard blue rock</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:** Changed tool less weight and 6' longer. Started to drill at 3:35 P.M. We are trying this to see if it will help get thru this formation.

**Bits used:** 22" bit

**Mud used:** None

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 11-3-87

Job No. 42-HWA Description: OLA A no.-3 3603-01

Driller: Charles Rig: Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: Finish Depth: Footage Drilled: 

Static Water level: Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>

Notes and Remarks: Waiting decision from D.L.N.R on what to do with water in hole

Bits used: Mud used: __________________________

Materials and supplies used: ________________________
DAILY DRILLING REPORT

Date: 11/21/87

Job No.: 42-HWA
Description: FL Smile 3 DE07-

Driller: ____________  Rig: ____________  Shift: ____________

Engineer: ____________  Phone: ____________

Starting Depth: ________  Finish Depth: ________  Footage Drilled: ________

Static Water level: ________  Ft. Time: ________

Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
</table>

Notes and Remarks:

Meet with the Da Lum DLHR in Honolulu at 2:30 P.M. to discuss plans for the project.

Materials and supplies used:
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

**Date: 10-31-87**  
**Job No.: 42-HUN**  
**Description:** OLAA #3  
**Rig:** 36-6  
**Shift:**

**Engineer:**

**Phone:**

**DTW Starting Depth:** 270  
**Finish Depth:**  
**Footage Drilled:**

**DTW Static Water Level:** 276  
**Ft. Time:** P.M.  
**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
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</tbody>
</table>

**Notes and Remarks:** Checked water level Manual depth

**Bits used:**

**Mud used:**

**Materials and supplies used:**

---

**RECEIVED**

37 NOV '80  8:00 42

DIV OF LAND DEVELOPMENT

DIV OF WATER
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-30-87

Job No. 42-HWA  Description: PLAA #3 3607-01

Driller: Charles  Rig: 36-1  Shift: __________

Engineer: ________________  Phone: ________________

Starting Depth: ______  Finish Depth: ______  Footage Drilled: ______

Static Water level: ______  Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
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</tr>
</tbody>
</table>

Notes and Remarks: Waiting on decision from D.I.N.R. on what to do will write in hole.

Bits used: ________________  Mud used: ________________

Materials and supplies used: ________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-29-87
Job No. 42-HWA Description: 0.1 HA 42 140.0 - 01
Driller: Charlie Rig: 36-6 Shift: Day
Engineer: ______________________ Phone: ______________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______
Static Water level: _______ Ft. Time: _______
__________ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Waiting on decision from D.C. N.R. on what to do with water in hole

Bits used: ____________________ Mud used: _________________________
Materials and supplies used: ______________________________________
**Date:** 10-28-87  
**Job:** OPAW  
**Description:** OLAA #3  
**Rig:** JG-4  
**Shift:** Day  

**Engineer:**  
**Phone:**  

**Starting Depth:**  
**Finish Depth:**  
**Footage Drilled:**  

**Static Water level:** 276  
**Ft. Time:** 4 \text{hr}  

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>403</td>
<td>403</td>
<td>Keeps coming in sand &amp; cinders</td>
<td></td>
</tr>
<tr>
<td>5pm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:** Tried to get Dept of Land & Natural Res.  
Mr. Lom said was in concrete. We used bentonite grout though this formation. It is under water so will have to get permission from OLM.  

**Bits used:**  
**Mud used:** None  

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-27-87

Job No.: 42-H4A Description: Oahu #3 3003-01

Driller: Charles Rig: 36-C Shift: Day

Engineer: ______________ Phone: ______________

Starting Depth: 403.5 Finish Depth: ______ Footage Drilled: ______

Static Water Level: 294.4' Ft. Time: 9:52 AM

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>403</td>
<td>403</td>
<td>Loose Rock, Sand, Hole is sluffing in.</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
Hole is sluffing in and is legacy on bottom and up about 25'. Water test area working.
Some Cinder and Cliner sand coming in.

Bits used: 22" Bit  Mud used: __________________________

Materials and supplies used: __________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

Date: 10-26-87  
Job No. 42-HMA  
Description: OAHU  
Driller: Charles  
Rig: X-2  
Shift: Day  
Engineer:  
Phone:  
Starting Depth: 405  
Finish Depth: 403  
Footage Drilled: -2  
Static Water level:  
Ft. Time:  
Ft. Time:  

**Drilling Log:**  
<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>405</td>
<td>403</td>
<td>Hole caving in loose rock &amp; sand.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Driller has lost footage

Bits used: 22" Bit  
Mud used:  
Materials and supplies used:  

---
Date: 10-24-87  
Job No. 42-HWA  Description: OLAA  
Driller: Charlie  Rig: 3C-4  Shift: Day  
Engineer: ___________________  Phone: ___________________
Starting Depth:  Finish Depth:  Footage Drilled:  
Static Water Level:  Ft. Time:  
Ft. Time:  
Drilling Log:  
<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>405</td>
<td>403</td>
<td>Hole is Caving in Black Cinders/Clinker Gray Sand</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole Caving, Bradley can't make any footage. Drilled 8.2 ft. No footage.

Bits used: 22 STAV  Mud used:  
Materials and supplies used:  

Date: 10-23-87

Job No. 42-HW Description: OLAP 4 3 3603.01

Driller: Charles Rig: K-1 Shift:

Engineer: Phone:

Starting Depth: Finish Depth: Footage Drilled:

Static Water level: 270 Ft. Time: PM

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
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<tbody>
<tr>
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</tr>
</tbody>
</table>

Notes and Remarks: Fished tool out of hole. Will have to get permission to use bentonite and cement to get thru formation that is slumping in hole.

Bits used: 

Mud used: 

Materials and supplies used: 

**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

---

**Date:** 10-32-87

**Job No.** 42-HWA **Description:** 04AH #3 3603-01

**Driller:** Charlie **Rig:** 364 **Shift:**

**Engineer:** ___________________ **Phone:** ___________________

**Starting Depth:** _______ **Finish Depth:** _______ **Footage Drilled:** _______

**Static Water level:** _______ **Ft. Time:** _______

**Ft. Time:** _______

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
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<tbody>
<tr>
<td>From</td>
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</tbody>
</table>

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**Notes and Remarks:**

*Rain out*

---

**Bits used:** ___________ **Mud used:** __________________________

**Materials and supplies used:** ______________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-21-87

Job No. 42-HWA Description: OLAA 443 3603-01

Driller: Charlie Rig: 36-C Shift: clay

Engineer: __________ Phone: __________

Starting Depth: 401 Finish Depth: 405 Footage Drilled: 4'

Static Water level: 280 Ft. Time: PM

270 Ft. Time: PM

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>405</td>
<td>Gray Clay Lava</td>
<td></td>
</tr>
<tr>
<td>405</td>
<td>403</td>
<td>Hole is caving in black cinder gray lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is caving badly in around drilling tools. Cable broke off on top of rope socket. Cause of big hole under top of drilling tools. Tools caving loose rock off walls of hole. Rugging up to fish tools, out of hole.

Bits used: 22" Bit

Mud used: _______________________

Materials and supplies used: _______________________

Water level has dropped
Date: 10-20-87

Job No. 42-H4A  Description: OLA  #3  3603-01

Driller: Charlie  Rig: 364  Shift: Clay

Engineer:  Phone:  

Starting Depth: 407  Finish Depth: 407  Footage Drilled: 

Static Water level:  

Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
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<tbody>
<tr>
<td>407</td>
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</tbody>
</table>

Notes and Remarks: Rained out

Bits used: 22" Steal  Mud used:  

Materials and supplies used:  
**Date:** 10-19-87  
**Job No:** OLAA #3  
**Description:** 3603-01  
**Driller:** Charles  
**Rig:** 36-C  
**Shift:** Day  
**Engineer:**  
**Phone:**  
**Starting Depth:** 401  
**Finish Depth:** 401  
**Footage Drilled:**  
**Static Water level:**  
**Ft. Time:**  
**Ft. Time:**  

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
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<tbody>
<tr>
<td>401</td>
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</tbody>
</table>

**Notes and Remarks:** Rained out  
**Bits used:** 22-BIT  
**Mud used:**  
**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-17-87
Job No.: #42-HUC Description: OLAA 243
Rig: 36-1
Shift: day
Engineer: Phone:

Starting Depth: 397
Finish Depth: 401
Footage Drilled: 4'

Static Water level: 750
Ft. Time: AM

Drilling Log:

From To Description Drilling Rate

397 401 gray clay

Notes and Remarks: Lot of gray and black sand coming in hole with water that I hit at 395', it is very hard to drill here, rock layer sand in in bottom of hole.

Bits used: 22" STAR

Mud used:

Materials and supplies used:
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-16-87

Job No. 42-HWA Description: OLAA #3 3603-01

Driller: Charles Rig: 36-1 Shift: day

Engineer: Phone:

Starting Depth: 395 Finish Depth: 397 Footage Drilled: 3

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>395</td>
<td>Gray sand + Black clay</td>
<td></td>
</tr>
<tr>
<td>397</td>
<td>Hot Water 395</td>
<td></td>
</tr>
</tbody>
</table>

Static Water level: 2250 Ft. Time: __________

Notes and Remarks: Drag sand slurry in on hole
Can't make any footage very slow going
Hot water at 395 depth

Bits used: 22 Star Mud used: __________

Materials and supplies used: ____________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

---

**Date:** 10-15-87  
**Job No.:** 42-HWA  
**Description:** OIAA #3  
**Starting Depth:** 380  
**Finish Depth:** 395  
**Footage Drilled:** 15  
**Driller:** Charlie  
**Rig:** 36-L  
**Shift:** Day  
**Engineer:**  
**Phone:**  

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>380-385</td>
<td>Soft Red Gray Loose Lava</td>
<td></td>
</tr>
<tr>
<td>385-390</td>
<td>Gray Clay Sand Gray Lava Soft</td>
<td></td>
</tr>
<tr>
<td>390-395</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:**

---

**Bits used:** 22" STA  
**Mud used:**  
**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-14-87
Job No. 42-HWA Description: OLA# #3 3603-01
Driller: Charles Rig: 36-6 Shift: day
Engineer: Phone:
Starting Depth: 365 Finish Depth: 380 Footage Drilled: 15
Static Water level: Ft. Time: 
Ft. Time:

Drilling Log:

<table>
<thead>
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<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
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</thead>
<tbody>
<tr>
<td>365</td>
<td>380</td>
<td>Black, Gray &amp; Red Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" STA Mud used: 
Materials and supplies used: 
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

DAILY DRILLING REPORT

Date: 10-22-87
Job No.: 42-HI
Description: OLAA 3603.01
Driller:       Rig: 76-6 Shift: Clay
Engineer: Phone:
Starting Depth: 355 Finish Depth: 365 Footage Drilled: 10
Static Water level: ______ Ft. Time: ______
                      ______ Ft. Time: ______

Drilling Log:
<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>355</td>
<td>365</td>
<td>Black: gray and red lava rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Job was drilling off. Shot hole will be too small for pump. Hole filed in 6" Redrilled shot out. Rate is straight and going good.

Bits used: 22" S1A1  Mud used: ____________________________
Materials and supplies used: ______________________________
**DAILY DRILLING REPORT**

**Date:** 10-12-87

**Job No.:** 42-HWA  **Description:** OAHU #3  7603-01

**Driller:** Charlie  **Rig:** 36-I  **Shift:** day

**Engineer:**  **Phone:**

**Static Water level:**  **Ft. Time:**

**Ft. Time:**

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
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<tbody>
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</tbody>
</table>

**Notes and Remarks:** Holiday

**Bits used:**  **Mud used:**  

**Materials and supplies used:**
Date: 10-10-87

Job No. 42-HUA  Description: OLAA 3

Driller: Charles  Rig: 36-4  Shift: day

Engineer:  Phone: 

Starting Depth: 330  Finish Depth: 355  Footage Drilled: 25

Static Water level: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>330-355</td>
<td>Black Red + gray lava rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 2 1/2" STAAL  Mud used: 

Materials and supplies used:
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **10-9-87**
Job No: **42-HCA**
Description: **OLAA #3**

Driller: **Chuck**
Rig: **36-C**
Shift: **day**

Engineer: __________
Phone: __________

Starting Depth: **305**
Finish Depth: **330**
Footage Drilled: **25'**

Static Water level: ________

Drilling Log:
<table>
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<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>305</td>
<td>318</td>
<td></td>
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<tr>
<td>318</td>
<td>325</td>
<td></td>
</tr>
<tr>
<td>325</td>
<td>330</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: **22' STEEL**
Mud used: __________

Materials and supplies used: __________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-8-87

Job No. 42-HWA  Description: OLA #3  3003-01

Driller: Chuck  Rig: 36-L  Shift: clay

Engineer:  Phone:

Starting Depth: 290  Finish Depth: 305  Footage Drilled: 15'

Static Water level:  Ft. Time: 
  Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>290</td>
<td>Black &amp; red lava</td>
<td></td>
</tr>
<tr>
<td>305</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22'' STA
Mud used: 

Materials and supplies used: 

**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

**Job No.** 42 HUA  #3     **Description:** OIAA

**Driller:** Chuck  **Rig:** 36-L  **Shift:** Day

**Starting Depth:** 279  **Finish Depth:** 290  **Footage Drilled:** 11

**Static Water level:**  **Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>279</td>
<td>286</td>
<td><strong>VERY HARD BONDE BASELT ROCK</strong></td>
<td></td>
</tr>
<tr>
<td>286</td>
<td>290</td>
<td><strong>Dull Black gray lava Rock</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:** Rock is very very hard to drill.

**Bits used:** **22" STA**  **Mud used:**

**Materials and supplies used:**
Date: 10-6-87

Job No. 42-HWA Description: OLAA

Driller: Charles Rig: 36-2 Shift: clay

Engineer: Phone:

Starting Depth: 270' Finish Depth: 279' Footage Drilled: 9'

Static Water level: Ft. Time: Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>270</td>
<td>Red Black grey Lava Soft Brown Black clay</td>
<td></td>
</tr>
<tr>
<td>270</td>
<td>Red+Black Lava iron</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Redrilled shortcut hole changed formation at 270' Red grey black lava Brown Black Clay.

Bits used: 22"STAR Mud used: _____________

Materials and supplies used: __________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-5-87

Job No. 42-HW A Description: OR A. 4.1 3603-01

Driller: Charles Rig: 36-4 Shift: Day

Engineer: Phone:

Starting Depth: 265 Finish Depth: 270 Footage Drilled: 5

Static Water level: Ft. Time: 

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>268-270</td>
<td>Soft Grey and Black Lava soft Brown Clay</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is still shifting, shot failed at 263' depth. Used 1.0 stick of powder.

Bits used: 22" Star Mud used: 

Materials and supplies used: 

---
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-3-87

Job No. 42-H-01
Description: OLAA #3

Driller: Chuck
Rig: 36-L
Shift: Day

Engineer: __________________________ Phone: __________________________

Starting Depth: 262
Finish Depth: 265
Footage Drilled: 3

Static Water level: ________ Ft. Time: __________

Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>262</td>
<td>265</td>
<td>Very hard gray Basalt Red lava rock</td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is still drifting very badly. Used 40' stick of powder to shoot off dog leg in bottom hole. I hope some clay soil will stop out of this formation and start making more depth.

Bits used: 22" STAR
Mud used: __________________________

Materials and supplies used: __________________________
Date: 10-7-87

Job No.: #7-142A Description: OLAA #3 3003-01

Driller: Charles Rig: 36-4 Shift: Day

Engineer: _______________ Phone: _______________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: _______

Static Water level: ________ Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: ____________________ Mud used: ____________________

Materials and supplies used: ___________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 10-1-87

Job No. 42-HYA  Description: DLAA #3  3603-01

Driller: Chuck  Rig: 36-C  Shift: Day

Engineer: Phone:

Starting Depth: Finish Depth: Footage Drilled:

Static Water level: Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained Out

Bits used:  Mud used: 

Materials and supplies used: 

### DAILY DRILLING REPORT

**Hawaiian Islands Drilling, Inc.**
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813

Date: 9-30-87

**Job No. 42 HWA**  
**Description:** OLA 

**Driller:** Charlie  
**Rig:** 36-L  
**Shift:** Day

**Engineer:**  
**Phone:**

**Starting Depth:** 262'  
**Finish Depth:** 263'  
**Footage Drilled:** 1'

**Static Water level:**  
**Ft. Time:**

**Ft. Time:**

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>262'</td>
<td>Very hard basalt lava rock</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:**  
Hole shifting very badly, trying to drill through hole so that clean shot hole. Very hard basalt lava rock.

**Bits used:** 22" STM  
**Mud used:**

**Materials and supplies used:**
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

---

**Date:** 9-29-87  
**Job No.** 42-HWA  
**Description:** OSHA  
**Footage Drilled:** 3'  

**Driller:** Charles  
**Rig:** 36-L  
**Shift:** Day

**Engineer:**  
**Phone:**

**Starting Depth:** 259  
**Finish Depth:** 262  

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>259</td>
<td>Very Hard Basalt</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:** Hole is still drifting off. Will shoot hole tomorrow at 262' Area. Rock is very tough to drill, cause of shifting so fast on side of hole.

**Bits used:** 22" Steel  
**Mud used:**

**Materials and supplies used:**
Date: 5-28-87

Job No. 42-HWX Description: OKA #5 3603-01

Driller: Chulu Rig: 3c-l Shift: Day

Engineer: ___________________ Phone: ___________ 

Starting Depth: 251' Finish Depth: 259' Footage Drilled: 0

Static Water level: _______ Ft. Time: _______

Drilling Log:

Drilling Log:

From | To | Description | Drilling Rate
---- | --- | ----------- | ---------------
251  | 259 | Drilling shot to 259' | 0

Notes and Remarks: Shot hole used 60 sticks of powder. Static wall is moved with 8 foot shot. Hole in straight to 251' depth.

Bits used: 22" Gage Mud used: _______________________

Materials and supplies used: _______________________

---
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-26-87

Job No.: 42-HWA  Description: OLA A T J  3603.01

Driller: Charles  Rig: 36-1  Shift: Clay

Engineer:  Phone:  

Starting Depth: 257  Finish Depth: 259  Footage Drilled: 2

Static Water level:  Ft. Time: 

Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>257</td>
<td>259</td>
<td>Very hard gravel &amp; Red loose Rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Shot filled in hole 6, drilled shot out. Hole is still drifting of 6 very tough drilling. Will shoot Monday.

Bits used: 22' ster  Mud used:  

Materials and supplies used:  

---
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-25-87

Job No.: 42-4W3 Description: OLA 3 H3 3603.01

Driller: Charles Rig: 361 Shift: Day

Engineer: Phone:

Starting Depth: 254 Finish Depth: 157 Footage Drilled: 3

Static Water level: Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>254</td>
<td></td>
<td></td>
<td>Very hard grey basalt + soft red lava rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is drifting off will shoot hole at 257. Hole drifted off very fast and dull bit in drilling time. Very tough drilling area.

Bits used: 22' STAT  Mud used: 

Materials and supplies used: 
### Daily Drilling Report

**Hawaiian Islands Drilling, Inc.**

**210 Central Pacific Plaza**

**220 South King Street**

**Honolulu, Hawaii 96813**

**Phone: 808-523-8956**

---

**Date:** 9-24-87

**Job No.:** 42-HWA  
**Description:** OLAA

**Driller:** Charles  
**Rig:** 36-C  
**Shift:** Day

**Engineer:**  
**Phone:**

**Starting Depth:** 254  
**Finish Depth:** 254  
**Footage Drilled:** 0

**Static Water Level:**  
**Ft. Time:**

**Ft. Time:**

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>254</td>
<td>254</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:** Hole is drifting off going to shoot again at 254. Rock very hard to blast off.

**Bits used:** 22" STA  
**Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-23-87
Job No. 42-Hal Description: OLA A 3603-01
Driller: Charles Rig: 36-5 Shift: Clay
Engineer: ______________________ Phone: ______________________
Starting Depth: 250 Finish Depth: 354 Footage Drilled: 4
Static Water level: _______ Ft. Time: ________

Drilling Log:
From Depth To Description Drilling Rate
250  354 Hard gray Basalt lava Rock

Notes and Remarks: Short hole at 254' depth

Bits used: 22" STAR Mud used: ______________________
Materials and supplies used: ______________________
**Date:** 9-22-87

**Job No.:** 42-HUA **Description:** OLAAN #3 3603-01

**Driller:** Charles **Rig:** 36-2 **Shift:** day

**Engineer:** Phone:

**Starting Depth:** 245 **Finish Depth:** 250 **Footage Drilled:** 5

**Static Water level:** Ft. Time:

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>245</td>
<td>250</td>
<td>Very hard BASALT and Red LAVA ROCK</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:** Hole is drifting off. Set shot at 250' depth. This will move hole to right direction which is down straight.

**Bits used:** 22" STA1 **Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-21-87
Job No. 42-HWA Description: OLAH 3 3603-01
Driller: Charlie Rlg: 36-L Shift: Day
Engineer: Phone:

Starting Depth: 240' Finish Depth: 245' Footage Drilled: 5
Static Water level: Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>240</td>
<td>HARD GRAY BASALT + RED LAVA</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole went to drift off did some side drilling on one side of hole to keep hole straight.

Bits used: 22" STAR Mud used: 

Materials and supplies used: 
Date: 9-19-87

Job No. 42-HWA Description: OLAK #3 (6003-0)

Driller: Charlie Rig: 36 L Shift: day

Engineer: Phone:

Starting Depth: 220 Finish Depth: 240 Footage Drilled: 20

Static Water level: _____ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>220-223</td>
<td>Hard Red &amp; Gray Lava Rock</td>
<td></td>
</tr>
<tr>
<td>223-240</td>
<td>Hard Grey Basalt &amp; Gray &amp; Red Lava Rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Shat hole at 235 to 240'. Hole was drifting off. Hole straight to 240'.

Bits used: 22' STAR Mud used: ____________________________

Materials and supplies used: ________________________________
Date: 9-18-87

Job No. 42. HWA  Description: OLAA #3 3603-01

Driller:  Phone: 

Engineer:  Phone: ___________ _

Starting Depth: 200  Finish Depth: 90  Footage Drilled: 20

Static Water level: Ft. Time: ___________ _

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Red, Black and grey SOFT LAVA Rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" STAT  Mud used: 

Materials and supplies used: 
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-17-87

Job No. 42-HWA  Description: OLA-#3  2603-01

Driller: Charles  Rig: 36-6  Shift: day

Engineer:  Phone:

Starting Depth: 200'  Finish Depth: _______  Footage Drilled: _______

Static Water level: _______  Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Rained Out

Bits used: 22"STAR  Mud used: ____________________________

Materials and supplies used: ____________________________
Date: 9-16-87
Job No. 42-H WA Description: OLAH 3 3003-01
Driller: Charles Rig: 36-C Shift: day

Starting Depth: Finish Depth: Footage Drilled:

Static Water level: Ft. Time:

Drilling Log:
<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Rammed out

Bits used: 21' star Mud used: 

Materials and supplies used: 
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

Date: **9-15-87**  
Job No. **42-HWA-3**  
Description: **OLA**

Driller: **Jack**  
Rig: **30-4**  
Shift: **day**

Engineer: __________________________  
Phone: ___________________________

Starting Depth: **185'**  
Finish Depth: **200'**  
Footage Drilled: **15'**

Static Water level: ________  
Ft. Time: __________

Ft. Time: __________

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>185'</td>
<td>Red Gray Black Lava Soft Loose</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: **22" STAR**  
Mud used: ___________________________

Materials and supplies used: ___________________________

______________________________
Date: 09-14-87

Job No. 42-HWA Description: OLAA #3 3603-01

Driller: Charles Rig: 36-1 Shift: clay

Engineer: Phone:

Starting Depth: 168' Finish Depth: 185' Footage Drilled: 17'

Static Water level: Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>168'</td>
<td>185'</td>
<td>Rock, gray, black sand</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rock is soft and loose.

Bits used: 22" star Mud used: ____________________________

Materials and supplies used: ____________________________
DATE: 9-11-87

Job No. 42-HUA Description: OLAA #3 7607-081

Driller: Charles  Rig: 2-1  Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: 167  Finish Depth: __________ Footage Drilled: _______
Static Water level: _______ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>167</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained Out

Bits used: 22' STAB  Mud used: __________________________

Materials and supplies used: __________________________
Date: 9-10-87

Job No: 42-HWA  Description: OLAA

Driller:        Rig: K-2     Shift: Day

Engineer:       Phone:

Starting Depth: 168  Finish Depth: 3605-01  Footage Drilled:

Static Water level:  Ft. Time: 

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained Out

Bits used: 22" STCH  Mud used: 

Materials and supplies used: 
## Daily Drilling Report

**Hawaiian Islands Drilling, Inc.**

**210 Central Pacific Plaza**

**220 South King Street**

**Honolulu, Hawaii 96813**

**Phone:** 808-523-8956

---

**Date:** 9-9-87

**Job No.:** 42-HWA  
**Description:** OLAA #3  
**Date:** 9-9-87

**Driller:** Chuck  
**Hog:** 36-C  
**Shift:** Day

**Engineer:**  
**Phone:**

**Starting Depth:** 158  
**Finish Depth:** 168  
**Footage Drilled:** 10'

**Static Water Level:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>158</td>
<td>Loose Reddyg Lava Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Hole is Caving in at 158 to 168.
May have to cement loose rock on walls.

**Bits used:** 22" STH  
**Mud used:**

**Materials and supplies used:**
Date: 9-8-87

Job No: 42-HW. Description: OLAA #3 7/607-01

Driller: Chuck Rig: 36-6 Shift: Day

Engineer: __________________ Phone: __________________

Starting Depth: 155 Finish Depth: 158 Footage Drilled: 3

Static Water level: _______ Ft. Time: ________

Ft. Time: ________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>155/158</td>
<td>Red/gray soft lava/rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is drifting off from 152' to 155' depth. Shot hole with 24 sticks of powder. Hole is straight to 155' depth.

Bits used: 22' STH Mud used: __________________

Materials and supplies used: __________________
Date: 9-4-87

Job No. 42-H-104
Description: OLAA

Driller: Charles
Rig: 36-1
Shift: clay

Engineer: ___________________________
Phone: ___________________________

Starting Depth: 145
Finish Depth: __________
Footage Drilled: ______

Static Water level: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>145</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Remedied Out

Bits used: 22" steel

Mud used: ___________________________

Materials and supplies used: ___________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-3-87

Job No.: 42 HIAA
Description: OHAA #3 2603-01

Driller: Charlie
Rig: 36-6
Shift: clay

Engineer: __________________________
Phone: __________________________

Starting Depth: 135'
Finish Depth: 145'
Footage Drilled: 10

Static Water level: ______
Ft. Time: ______

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>135</td>
<td>145</td>
<td>SOFT RED+GRAY LAVA ROCK</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:**

Rock is caving in some off walls.

---

**Bits used:** 22' STAL

Mud used: __________________________

Materials and supplies used: __________________________
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 9-2-87
Job No.: 42 H.U.A. Description: O L A A 3 3003-01
Driller: Charles Rig: 36-2 Shift: Day
Engineer: ______________________ Phone: ______________________

Starting Depth: 107 Finish Depth: 135 Footage Drilled: 28'
Static Water level: ___________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>107</td>
<td>Loose Red + Gray Lava, Root</td>
<td></td>
</tr>
<tr>
<td>125</td>
<td>Gray Breccia</td>
<td></td>
</tr>
<tr>
<td>132</td>
<td>Red + Gray Soft Lava</td>
<td></td>
</tr>
<tr>
<td>135</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22" STJ. Mud used: ________________________________

Materials and supplies used: ___________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

**Date:** 9-1-87

**Job No.:** 49 HWA

**Description:** OLAA

**Driller:** Charles

**Rig:** 36-L

**Shift:** Day

**Engineer:** Phone:

**Starting Depth:** 105

**Finish Depth:** 107

**Footage Drilled:** 2'

**Static Water Level:**   
**Ft. Time:**

**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>107</td>
<td>LOOSE RED+GRAY LAVA ROCK</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:** Changed 22" BIT.

**Bits used:** 22"STAV

**Mud used:** none

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-31-87
Job No. 42 Description: OLAA 163 3603-01
Driller: Chuck Rig: X-L Shift: Day
Engineer: ___________________ Phone: ___________________

Starting Depth: 97 Finish Depth: 105 Footage Drilled: 8

Static Water level: __________ Ft. Time: __________

Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 97</td>
<td>To 105</td>
<td>Red/grey lava</td>
</tr>
</tbody>
</table>

Notes and Remarks: Sand is loose and broken. Boulders and caving in. Hole drifted off. Set shot at 102' shot hole. Hole filled in 4' with rock after shot. Drilling shut out. Hole is very large at 100' to 105'.

Bits used: 20" STL
Mud used:

Materials and supplies used:
# DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-9956

**Date:** 8-28-87  
**Job No.:** 42 HW-4  
**Description:** OLAA #3  
**Engineer:**  
**Phone:**  
**Driller:** Charlie  
**Rig:** 36-Z  
**Shift:** Day

**Static Water level:**  
**Footage Drilled:** 5  
**Depth:** 92  
**Finish Depth:** 97

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>95</td>
<td>Drilling out Benton</td>
<td></td>
</tr>
<tr>
<td>95</td>
<td>97</td>
<td>Push and Bag Mud</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

**Bits used:** 20" STA  
**Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-27-87
Job No. 42 HUA Description: OLAP #3 3603-01
Driller: Chuck Rig: 36-4 Shift: clay
Engineer: _______________ Phone: _______________
Starting Depth: 86 Finish Depth: 92 Footage Drilled: 6
Static Water level: _______ Ft. Time: ____________
                               Ft. Time: ____________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>Drilling out cement</td>
<td></td>
</tr>
</tbody>
</table>

Drilling Log:

Notes and Remarks: Hole starts at 86', after we forced cement in hole, 92' to bottom of hole which is 95'.

Bits used: 20 STA  Mud used: ________________________________

Materials and supplies used: _______________________________________________________
# DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **8-26-67**

Job No.: 42-H WA  
Description: OLAP  
Worker:  
Rig: **36-L**  
Shift: Day

Engineer:  
Phone:  

Starting Depth: **95**  
Finish Depth: **95**  
Footage Drilled: **0**

Static Water Level:  
Ft. Time:  
Ft. Time:  

### Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
<td>95</td>
<td>Hole is about 30&quot; in diameter. Core making saw hole.</td>
<td></td>
</tr>
</tbody>
</table>

### Notes and Remarks:

We are putting 2 yards of cement in hole. This will help to reduce hole when we drill out cement. Pound cement at 1:30 P.M. let cement set for 24 hrs before we start drilling.

Bits used: **20 STR**  
Mud used:  

Materials and supplies used:  

---
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-25-87
Job No. 42-144
Description: OLAA # 1 3003-01
Driller: Charles
Rig: 36-1
Shift: Day

Engineer: __________________________
Phone: __________________________

Starting Depth: 94
Finish Depth: 95
Footage Drilled: 1

Static Water level: ______
Ft. Time: ________________

Drilling Log:
Depth Description Drilling Rate
From | To
94 | 95

Cement very hard Basalt

Notes and Remarks: Helo is very large at bottom as soon as we get hole mended down to 22" will make better progress. Blasting hole off has made large hole at bottom

Bits used: 20' STJ
Mud used: ________________________

Materials and supplies used: ________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-24-87
Job No. 42-HUA
Description: OLAA 43

Driller: Charles
Rig: 36-6
Shift: Day

Engineer: Phone:

Starting Depth: 92
Finish Depth: 94
Footage Drilled: 2

Static Water level: __________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>94</td>
<td>Contacts &amp; very hard Basalt Rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is drifting off setting shot at 90 to 93', used 24 sticks. Hole filled, filled in 2' Redrilling shotout. Hole is straight to 94' depth.

Bits used: 20" Stat
Mud used: ________________________________

Materials and supplies used: ________________________________
**Date:** 8-20-87

**Job No.:** 42-Hiwa

**Description:** DLAA #3 0607-01

**Driller:** Charles

**Rig:** J6-L

**Shift:** Day

**Engineer:**

**Phone:**

**Starting Depth:** 91

**Finish Depth:** 92

**Footage Drilled:** 1

**Static Water level:**

**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>91</td>
<td>92</td>
<td>Cement + gray Basalt Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Hole is drifting off again. Try to drill ahead some. Can't set shot at 90' to 93'. Very rough drilling can only make 4' to 6' per hr.

**Bits used:** 20' STAR

**Mud used:**

**Materials and supplies used:**
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-19-67
Job No. 42-HWA
Description: DL AA #3 3003-01

Driller: Charles
Rig: 26-L
Shift: Day

Engineer: ______________________ Phone: ______________________

Starting Depth: 90
Finish Depth: 91
Footage Drilled: 1

Static Water level: _______

Phone: _____________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 90</td>
<td>Cement &amp; Sand Basalt</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: **Shooting Hole.**
Hole is straight to 89' depth.

Bits used: **20 STAL**
Mud used: ______________________

Materials and supplies used: ______________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-18-87
Job No. 42-48
Description: OLA-3 3603-01
Driller: Claude
Rig: 361
Shift: Day

Engineer: Phone:

Starting Depth: 90 Finish Depth: 90 Footage Drilled: 0
Static Water level: Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>90</td>
<td>Cement &amp; Sand grout Basalt</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
Shooting hole.
85 to 90 Blasting hard core.
90 to 90 Straightening hole.

Bits used: 20' STAR
Mud used:

Materials and supplies used:
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 6-17-87

Job No. 42-46-1 Description: OLHA 3

Driller: Charlie Rig: 36-4 Shift: Day

Engineer: ____________ Phone: ____________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: 0

Static Water level: _______ Ft. Time: _______

Drilling Log:
Depth Description Drilling Rate
From To

Drilling Log:

Notes and Remarks:

Bits used: ____________ Mud used: ____________

Materials and supplies used: ____________

RECEIVED
97 AUG 31 A10:18

OLH OF WATER &
LAND DEVELOPMENT
Date: 8-14-87

Job No. 42-HW-1 Description: OKA #3 3007-01

Driller: Charles Rigg 36-4 Shift: Day

Engineer: Phone:

Starting Depth: 89 Finish Depth: 90 Footage Drilled: 1

Static Water level: _______ Ft. Time: _______

Ft. Time: _______

Drilling Log:

Depth

From 89 To 90 Description Cement and Blackening Basalt Rock

Notes and Remarks:

Same old thing looks back to the last week's report just spinning our wheel trying to get permission to shoot hole.

Bits used: 20" star Mud used:

Materials and supplies used:
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-10-87

Job No. 42-HW-A Description: OLAA 43 3609-01

Driller: Chuck Rig: J6-L Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: 87 Finish Depth: 88 Footage Drilled: 1

Static Water Level: ______ Ft. Time: _______
                        ______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>87</td>
<td>88</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: I NEED TO BLAST HARD ROCK OFF WALL

Bits used: 26" STAIR Mud used: _______________________________

Materials and supplies used: ___________________________________
**Date:** 8-11-87  
**Job No.:** 42-HW-A  
**Description:** OLAKA  
**Driller:** Chuck  
**Shift:** day  
**Engineer:**  
**Phone:**  

**Starting Depth:** 86.87  
**Finish Depth:** 87  
**Footage Drilled:** 1  

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>86</td>
<td>drilling</td>
<td></td>
</tr>
<tr>
<td>87</td>
<td>cement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>gray sand</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Basalt Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Due to a scratch of hole and the formation were drilling in, the rock is very hard and the deep core drill is tough. I feel we should get permission from the headquater to blast off the wall which would prevent me from getting very sick of drilling in this job.  

**Bits used:** G-STAR  
**Mud used:**  

**Materials and supplies used:**  

**Comm**
Date: 8-10-87

Job No. 42-HW-A Description: OLA A WELL Depth 3003-01

Driller: Chuck Rig: KC Shift: Day

Engineer: Phone:

Starting Depth: 85 Finish Depth: 86 Footage Drilled: 1

Static Water level: 85 Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>85</td>
<td>86</td>
<td>Drilling out cement</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Side drilling on hard rock formation

Bits used: 20" STAR Mud used: ___________________________

Materials and supplies used: ___________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

---

**Date:** 8-7-87

**Job No.:** 42-404-A

**Description:** Well #3 3603-01

**Driller:** Charles

**Rig:** 36-6

**Shift:** day

**Engineer:**

**Phone:**

---

**Starting Depth:** 84

**Finish Depth:** 85

**Footage Drilled:** 1'

**Static Water level:**

**Ft. Time:**

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>84</td>
<td>85</td>
<td>Drilling out cement</td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes and Remarks:**

- Hard rock over 70 degree incline very hard to drill off. Hole trends to drift off to the North east. Very rough drilling.

**Bits used:** 20" star

**Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc. RECEIVED
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-6-87

Job No. 42-HW-A Description: OLAA well #3 3607-01

Driller: Charles Rig: 36-L Shift: day

Engineer:____________________ Phone:____________________

Starting Depth: 83 Finish Depth: 84 Footage Drilled: 1'

Static Water level:_________ Ft. Time:_________

Ft. Time:_________

Drilling Log:

Depth Description Drilling Rate
From To

83' 84' Drilling out cement

Raising + side drilling hard shoulder off

Notes and Remarks:

Bits used: 20" J bit Mud used: ____________________________

Materials and supplies used: ____________________________

DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-13-87

Job No.: 42-Hw-A
Description: OLA A #3 3605-01

Driller: Charlie
Rig: 36-6
Shift: day

Engineer: Phone:

Starting Depth: 88
Finish Depth: 89
Footage Drilled:

Static Water level: _______ Ft.
Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>Drilling out cement + loud cracking Basalt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rocks</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is drifting to the North West got to Blast hole now day or shut rig down.

Bits used: 20" steel
Mud used:

Materials and supplies used:
Date: 8-5-87
Job No. 42-HW-A Description: Old Well #3 3603.01
Driller: Charles Rig: 36-1 Shift: day
Engineer: Phone:
Starting Depth: _____ Finish Depth: _____ Footage Drilled: _____
Static Water level: _____ Ft. Time: ______

Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
Wait on cement to dry down

Bits used: __________________ Mud used: __________________
Materials and supplies used: __________________
RECEIVED
37 AUG 17 A 6:38
DIV. OF WATER &
LAND DEVELOPMENT
Date: 7-30-87

Job No. 42-H-KA Description: OLHA

Driller: Charles Rig: 36-2 Shift: day

Engineer: Phone:

Starting Depth: 80 Finish Depth: 82 Footage Drilled: 2

Static Water level: Ft. Time: 

Ft. Time: 

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td></td>
<td>82</td>
<td>Reaming Soil, Cement &amp; Rock Clean</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

/ / / /

Bits used: 20" star Mud used: 

Materials and supplies used: 

----------------------------------

Date: 7-24-87

Job No. 42-H-20  Description: Alarm Pumps  3603-01

Driller: Chuck  Rig: 36-1  Shift: Day 10 hrs

Engineer:  Phone:

Starting Depth: 75'  Finish Depth: 78'  Footage Drilled: 3'

Static Water level: ______ Ft. Time: ______

Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>Reaming Hole, Cement &amp; Black &amp; Red Lines</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Hole is very tough to keep straight, tends to drift off badly.

Bits used: 22' steel  Mud used: 

Materials and supplies used: ___________________________
### Daily Drilling Report

**Date:** 7-23-87  
**Job No.:** 42-H-WP  
**Description:** Clean Reserve 3603-01

**Driller:** Charles  
**Rig:** 36-L  
**Shift:** Day

**Engineer:**  
**Phone:**

**Starting Depth:** 70'  
**Finish Depth:** 75'  
**Footage Drilled:** 5

**Static Water Level:**  
**Pt. Time:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>70'</td>
<td>Reaming hole, cement + black + red lava</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

*Hole straight to 75' depth.*

**Bits used:** 32"  
**Mud used:**

**Materials and supplies used:**
Date: **7-20-87**

Job No.: 42-H-W A Description: *Ala Moana* 3603-01

Driller: *Charles*  Rig: 96-1  Shift: day

Engineer:  Phone:  

Starting Depth:  Finish Depth:  Footage Drilled:  

Static Water level:  Ft.  Time:  

Ft.  Time:  

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: *Raining very hard*  

*Rainout*

Bits used:  Mud used:  

Materials and supplies used:  


Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 7-17-87

Job No. 42 - H - W - A Description: Olaa reservoir

Driller: Chuck Rig: 36-L Shift: day

Engineer: Phone:

Starting Depth: 60 Finish Depth: 65 Footage Drilled: 5'

Static Water level: Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>62</td>
<td>Running Hole</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>65</td>
<td>Cement &amp; Lava</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

60 to 62 Very hard black lava lave
Drilled bit twice Hole is straight to 65.

Bits used: 22' SM1 Mud used: ____________________________

Materials and supplies used: ____________________________
Date: **7-21-87**

Job No. **42-4-1**  Description: **Clara Reservoir 3603-01**

Driller: **Charlie**  Rig: **36-1**  Shift: **Day**

Engineer:  Phone:

Starting Depth:  Finish Depth:  Footage Drilled:

Static Water level:  Ft. Time:

**Rig Out**

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: **Raining very hard**

Bits used:  Mud used:

Materials and supplies used:

---
DAILY DRILLING REPORT
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 7-22-87
Job No. 42-1440 Description: Alan Demanc 3603-01
Driller: Chula Rig: 36-1 Shift: Day
Engineer: Phone:

Starting Depth: 65 Finish Depth: 70 Footage Drilled: 5
Static Water level: Ft. Time:____________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>Running Hole Cement &amp;Rod &amp; gusseted</td>
<td></td>
</tr>
<tr>
<td>To</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
Running side drilling on dog leg. Hole is straight to 70'. Very rough drilling.

Bits used: 22" Mud used: ________________________

Materials and supplies used: ____________________________
**Date:** 7-29-87  
**Job No.:** 414-HW-12  
**Description:** Ocean Breeze 36003-01  
**Driller:** Charles  
**Rig:** 36-2  
**Shift:** Day  
**Engineer:**  
**Phone:**  

**Starting Depth:** 79'  
**Finish Depth:** 80'  
**Footage Drilled:** 1'  

**Static Water Level:**  
**Ft. Time:** __________  
**Ft. Time:** __________  

**Drilling Log:**  
<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>79'</td>
<td>80'</td>
<td>Reaming Hole, Cement, Padeging, Saws.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**  
Strung up 20" tool dressed bit  
To gauge hole is very tough to hold straight. We are keeping hole straight so far.  

**Bits used:** 20" steel  
**Mud used:** __________  
**Materials and supplies used:** __________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 7-27-87
Job No. 42-HIDP Description: Aquifer 3403-01
Driller: Charles Rig: 36-L Shift: __________
Engineer: ________________ Phone: ________________
Starting Depth: ______ Finish Depth: ______ Footage Drilled: ______
Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Change over to 20"

Drilling Tools:

Bits used: 22" star Mud used: ________________

Materials and supplies used: ________________________________
Date: 7-28-87

Job No. 3603-01 Description: Alan Reserve

Driller: Charlie Rig: 36L Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______ 

Static Water level: _______ Ft. Time: _______ _______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

went to get string of 20", tools out to Flower well and got Sam rig, workable

Bits used: ___________________ Mud used: ___________________

Materials and supplies used: ______________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 7-30-87

Job No. 42-446-5A Description: Olae Resources

Driller: ____________ Rig: 76-1 Shift: day

Engineer: ____________ Phone: __________________

Starting Depth: 50 Finish Depth: 82 Footage Drilled: 32

Static Water level: _______ Ft. Time: __________

Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Resuming重要讲话</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

/

Bits used: 30-90. Mud used: __________________

Materials and supplies used: __________________
Date: 8-4-87

Job No. ___________ Description: O L A A 4 0 3 6000 (1)

Driller: Charles Rig: 36-6 Shift: Day

Engineer: ___________ Phone: ___________

Starting Depth: 86' Finish Depth: 92' Footage Drilled: 6'

Static Water level: ______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>86'</td>
<td>92'</td>
<td>Running Hole down Cement Red Gray Grav</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Drilled to 92' hole is crooked from 84 to 92' level. Poured 2 yard of cement in hole. Cement filled hole up to 83' level. Set cement set for 36 hrs for hardness.

Bits used: 20' star Mud used: ________________

Materials and supplies used: ________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: 8-3-87

Job No. 3

Description: Class 3 J-3 3607-01

Driller: Charles
Rig: 36-L
Shift: day

Engineer: Phone:

Starting Depth: 84'
Finish Depth: 86'
Footage Drilled: 2'

Static Water Level:__________ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 84 to 86</td>
<td>Running hole, cement &amp; Reddyguy lace</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Can't hold the hole straight because of the 14" hole that was drilled to the depth of 96'. I have hard bottom to drill on to run hole straight. Plan is going to drill hole to 91' and run cement in hole up to 85'. This will give me hard bottom to drill on as 85". Then keep it straight.

Materials and supplies used: ________________________________
RECEIVED
87 AUG 17 A 6:37
DIV. OF WATER & LAND DEVELOPMENT
Date: 7-31-87

Job No. __________ Description: OLAA +3 3605.01

Driller: Charles Rig: 36-1 Shift: Day

Engineer: __________________ Phone: __________________

Starting Depth: 82 Finish Depth: 84 Footage Drilled: 2'

Static Water level: __________ Ft. Time: __________

Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>Drilling</td>
<td></td>
</tr>
<tr>
<td>To</td>
<td>Hole, Cement, Red clay</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Hole is very hard to hold straight

Bits used: 20" Steel Mud used: ____________________________

Materials and supplies used: ____________________________________________
Date: 7-9-87

Job No. 42-HW1-4 Description: DLAA #3 3603-04

Driller: Sam  Rig: J64  Shift: 

Engineer:  Phone:  

Starting Depth:  Finish Depth:  Footage Drilled:  

Static Water level:  Ft. Time:  

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Raming FROM 58-62</td>
</tr>
</tbody>
</table>

Notes and Remarks: Hot weather today

Bits used: 22' s T AM Mud used:  

Materials and supplies used:  

Good luck Charles J. Ceci!
Date: 7-8-87
Job No. 42-HW-4 Description: DLAA #3 3603.01
Driller: SAM Rig: 36L Shift:

Engineer: ___________________________ Phone: ___________________________

Starting Depth: _______ Finish Depth: _______ Footage Drilled: _______
Static Water level: _______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Backup up to 58', started</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kensing</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: 22' Mud used: ___________________________

Materials and supplies used: ___________________________
**Date:** 7-3-87  

**Job No.:** 42-HW-4  
**Description:** OLA 4 #3 3603-01

**Driller:** Sam  
**Rig:** ______  
**Shift:** __________

**Engineer:** ______________  
**Phone:** __________________

**Starting Depth:** 50-60  
**Finish Depth:** ______  
**Footage Drilled:** 10

**Static Water level:** ______  
**Ft. Time:** __________

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-60</td>
<td>CEMENT</td>
<td></td>
</tr>
<tr>
<td>60-62</td>
<td>REMOVED 6'</td>
<td>RECALCULATED</td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

**Bits used:** 22  
**Mud used:** __________________

**Materials and supplies used:** __________________
Date: 7-2-87

Job No. 42-HW-A Description: OLAA #3 3607-01
Driller: Sam Rig: 36 L Shift: DAY
Engineer: Phone:

Starting Depth: 45' Finish Depth: Footage Drilled:
Static Water level: Ft. Time: 

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>45</td>
<td>50</td>
<td>START DRILLING OUT CEMENT</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>WELDED ON BIT TILL 4'00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PUT BIT ON STARTED DRILLING</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: ____________ Mud used: ____________

Materials and supplies used: _____________________________________________
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 South King Street  
Honolulu, Hawaii 96813  
Phone: 808-523-8956

**RECEIVED**  
27 JUL 31 A 8:44

DIV. OF WATER & LAND DEVELOPMENT

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**Date:** 7/1/87  
**Job No.:** 42-HW-4  
**Description:** Olona #3  
**Shift:** DAY

**Driller:** Mike Samuels  
**Rig:**

**Engineer:**  
**Phone:**

---

**Starting Depth:** _______  
**Finish Depth:** _______  
**Footage Drilled:** _______

**Static Water level:** _______  
**Ft. Time:** _______

**Ft. Time:** _______

---

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
</table>

---

**Notes and Remarks:** welded up tool and drill bit  
Rained real hard changed bits

**Bits used:**  
**Mud used:**

**Materials and supplies used:**
Date: June 5-87

Job No. __________ Description: __________

Driller: Babe
Rig: ____________ Phone: ___________________

Engineer: ________________ Phone: ___________________

Starting Depth: ________ Finish Depth: ________ Footage Drilled: ________

Static Water Level: ________ Ft. Time: ________

Drilling Log:
Depth From | To |
| | |

Notes and Remarks:
Got Rained Out.
Drilled about 2'

Bits used: __________ Mud used: __________

Materials and supplies used: ________________________________
Date: June 4, 87

Job No. ______ Description: ______

Driller: Bale Rig: ______ Shift: ______

Engineer: ______ Phone: ________

Starting Depth: ______ Finish Depth: ______ Footage Drilled: ______

Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td></td>
<td>drilled out 15' of cone.</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: _______ Mud used: _______

Materials and supplies used: ________________________________
Date: Jane 3

Job No. Description: CL A+ 3603-01

Driller: Bob Rig: ______ Shift: DAY

Engineer: Phone: _______________________

Starting Depth: ______ Finish Depth: ______ Footage Drilled: ______

Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

"Drilled about 1/2 of Concrete out today"

Bits used: ______ Mud used: _______________________

Materials and supplies used: _______________________

DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: April 28

Job No. Description: OLAA well

Driller: Buzz  Rig: 41  Shift: Day

Engineer: ___________________ Phone: ____________________

Starting Depth: 135  Finish Depth:  _______  Footage Drilled: 0

Static Water level: _______ Ft. Time: _______

Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Rained off and on all day.
Rained and started hole.

Bits used: _______  Mud used: _______

Materials and supplies used: ________________________________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: April 13-15

Job No. Description: O L A A W e l l

Driller: Buzz Rig: H1 Shift: Day

Engineer: Phone:

Starting Depth: 120 Finish Depth: 127 Footage Drilled:

Static Water level: _______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>Very hard grey rock</td>
<td></td>
</tr>
<tr>
<td>120</td>
<td>Very hard grey rock</td>
<td></td>
</tr>
<tr>
<td>121</td>
<td>Very hard grey rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

April 13 Straightening Hole
April 14 Straightening Hole
April 15 Rained Hard All Day

Bits used: _______________ Mud used: _______________

Materials and supplies used: __________________________
**Date:** March 30-31 - April 1-2-3-6-7-8-9-10

**Job No.** Description: OLA A WEL

**Driller:** BUZZ  **Rig:** H1  **Shift:** DAY

**Engineer:**  **Phone:**

**Starting Depth:** Finish Depth:  **Footage Drilled:**

**Static Water level:**  **Ft. Time:**

**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td>120</td>
<td>HARD GREY ROCK</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

**Bits used:**  **Mud used:**

**Materials and supplies used:**
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **April 21**

Job No. ______ Description: **OLA A well**

Driller: **J** Rig: **H** Shift: **DAY**

Engineer: __________________ Phone: __________________

Starting Depth: **135** Finish Depth: ______ Footage Drilled: **0**

Static Water level: ______ Ft. Time: ______

Ft. Time: ______

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

**Rained all day**

Bits used: ______________ Mud used: ______________________

Materials and supplies used: ______________________________
Date: April 24

Job No. __________________ Description: OLA#1 Well

Driller: Buzz Rig: ___________ Shift: Day

Engineer: __________________ Phone: __________________

Starting Depth: 135 Finish Depth: _______ Footage Drilled: 0

Static Water level: _______ Ft. Time: _______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Reading very hard

Bits used: ______________ Mud used: __________________________

Materials and supplies used: ________________________________
Date: April 23

Job No.: Description: OLA A Well

Driller: Buzz  Rig: H1  Shift: Day

Engineer:  Phone:

Starting Depth: 135  Finish Depth:  Footage Drilled: 0

Static Water level:  Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:
"Put 22" Bit on starter" 

Bits used:  Mud used:  

Materials and supplies used:
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

**Date:** April 22

**Job No.**

**Description:** OLADowell

**Driller:** Buzz

**Rig:** H1

**Shift:** Day

**Engineer:**

**Phone:**

**Starting Depth:** 135

**Finish Depth:**

**Footage Drilled:** 0

**Static Water level:**

**Ft. Time:**

**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Building 22" Bit up to Ream Hole

**Bits used:**

**Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: April 21

Job No. __________ Description: O Lan A We II

Driller: Buzz Rig: #11 Shift: DAY

Engineer: __________ Phone: ____________

Starting Depth: 132 Finish Depth: 135 Footage Drilled: 3

Static Water level: __________ Ft. Time: __________

Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>132</td>
<td>HARD GREY ROCK</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: __________ Mud used: ____________

Materials and supplies used: ________________________________
Date: April 20
Job No. Description: O L A A well
Driller: Bill Rig: Shift: Day
Engineer: Phone:
Starting Depth: 129 Finish Depth: 132 Footage Drilled: 3
Static Water level: Ft. Time: Ft. Time:

Drilling Log:
Depth Description Drilling Rate
From To
129 132 Hard Grey Rock

Notes and Remarks:

Bits used: Mud used:
Materials and supplies used:
Date: April 17

Job No. __________ Description: OLAH well

Driller: Buzz  Rig: _______ Shift: DAY

Engineer: ___________ Phone: ___________

Starting Depth: 127  Finish Depth: 129  Footage Drilled: 2

Static Water level: ________ Ft. Time: ____________

Ft. Time: ___________

Drilling Log:
Depth
From To Description Drilling Rate
127 129 Hard Grey Rock

Notes and Remarks:
Putting on 16" Bit & Drilled and started drilling very hard

Bits used: ____________ Mud used: ____________

Materials and supplies used: ____________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: April 16

Job No. Description: OLA A well

Driller: Buzz Rig: H1 Shift: Day

Engineer: Phone: ____________________________

Starting Depth: 127 Finish Depth: __________ Footage Drilled: 0

Static Water level: _______ Ft. Time: __________

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
</table>

Notes and Remarks:

Straining hole + building 16" bit

Bits used: ____________________ Mud used: ____________________

Materials and supplies used: ___________________________________
Date: March 16-17-18-19-20-21-22-23-24-25-26-27
Job No. Description: Q L A A well
Driller: Buzz Rig: 1 Shift: Day
Engineer: Phone:
Starting Depth: 97 Finish Depth: Footage Drilled:
Static Water level: Ft. Time: 
Ft. Time: 
Drilling Log:
<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>97</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks: Working on Rig

Bits used: Mud used: 
Materials and supplies used: 
**DAILY DRILLING REPORT**

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: **March 5 - March 6 - 9 - 19**

Job No. [Blank] Description: **ALAA WELL**

Driller: **Buzz** Rig: **HI** Shift: **DAY**

Engineer: [Blank] Phone: [Blank]

Starting Depth: **92** Finish Depth: **97** Footage Drilled: **5**

**Static Water level:** [Blank] Ft. Time: [Blank]

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>92</td>
<td>Medium Hard Grey Rock</td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

March 5 worked on Bit.
March 6 Drilled 5' 9 - 13 working on Rig

Bits used: [Blank] Mud used: [Blank]

Materials and supplies used: [Blank]
Date: March 2 87 March 3 87 March 4 87

Job No. Description: QLAA well

Driller: Buzz Shift: Day

Engineer: Phone:

Starting Depth: 88 Finish Depth: 92 Footage Drilled: 4

Static Water level: Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>88</td>
<td>92</td>
<td>Hard Gray Rock</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: Mud used:

Materials and supplies used:
Date: Feb 26 - 27

Job No. Description: OLA NWELL 3603-01

Driller: Buzz  Rig: H  Shift: Day

Engineer: Phone: ___________

Starting Depth: 85  Finish Depth: 88  Footage Drilled: 3

Static Water level: ___________  Pt. Time: ___________

Drilling Log:
                Description                Drilling Rate
From  To       ___________    ___________
85 88          HARD GREY ROCK

Notes and Remarks: Worked on Rig and tools pickup Feb 26. Worked on Bit and started drilling 2:30 Feb 27

Bits used: ___________ Mud used: ___________

Materials and supplies used: ___________
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-9051

Date: Feb 23

Job No. Description: Waiting on tools. Feb 24 P. Hugus o.s.

Driller: Buzz  Rig: Hu Shift: Day

Engineer: ___________ Phone: ___________

Starting Depth: 83 Finish Depth: 85 Footage Drilled: 2

Static Water Level: ______ Ft. Time: ______

__ ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>85</td>
<td>Very very hard grey rock.</td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: ____________________ Mud used: ____________________

Materials and supplies used: __________________________________
### DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

**Date:** Feb 20 1967

**Job No.**

**Description:** OLA A WELL

**Driller:** Buzz

**Rig:**

**Shift:** DAY

**Engineer:**

**Phone:**

**Starting Depth:** 83

**Finish Depth:** 0

**Footage Drilled:** 1

**Static Water level:**

**Ft. Time:**

**Drilling Log:**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes and Remarks:**

Repair R.9

**Bits used:**

**Mud used:**

**Materials and supplies used:**
DAILY DRILLING REPORT

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: Feb 18-87, Feb 19-87

Job No. __________________ Description: OKAA well

Driller: Buzz Shift: DAY

Engineer: __________________ Phone: __________________

Starting Depth: 83 Finish Depth: _______ Footage Drilled: _______

Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>83</td>
<td>83</td>
<td>Grey Rock Very Hard</td>
<td></td>
</tr>
<tr>
<td>83</td>
<td></td>
<td>Broken Stone</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

worked on tools till 1:00 then started drilling

Bits used: ____________ Mud used: ______________________________

Materials and supplies used: ____________________________________
Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 South King Street
Honolulu, Hawaii 96813
Phone: 808-523-8956

Date: Feb-12-87 - Mar-13-87 - Apr-17-87

Job No. Description: O'LA'A'WELL

Driller: Buzz Rig: H-1 Shift: Day

Engineer: ___________________ Phone: ___________________

Starting Depth: 80 Finish Depth: ______ Footage Drilled: ______

Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>Depth To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>81</td>
<td>Reddish Brown Medium</td>
<td>Hard</td>
</tr>
<tr>
<td>81</td>
<td></td>
<td>Gray Rock Very Hard</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Jumped, Pen on Stone</td>
<td>7/8 ft.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cut Holes Out Friday, 13</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Ended out Monday, 16
Begins out Tuesday, 17

Bits used: __________________ Mud used: __________________

Materials and supplies used: ____________________________________________
Date: Feb 11, 87

Job No. Description: DLAA well

Driller: Buzz Hig: Hi Shift: Day

Engineer: Phone:

Starting Depth: 78 Finish Depth: 80 Footage Drilled: 2

Static Water level: Ft. Time:

Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>To</td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>80</td>
<td>Reddish Brown Hard Ledge</td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: ________________ Mud used: ____________________

Materials and supplies used: ____________________________________
Date: Feb 10

Job No.: Description: OLA A well

Driller: Buzz Rig: Shift: DAY

Engineer: Phone:

Starting Depth: 67 Finish Depth: 78 Footage Drilled: 11

Static Water level: Ft. Time:

Drilling Log:

<table>
<thead>
<tr>
<th>Depth From</th>
<th>To</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>67</td>
<td>78</td>
<td>Red cinders &amp; clinkers, med-hard</td>
<td></td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: Mud used:

Materials and supplies used:
Date: Feb 9
Job No. Description: OLA A well
Driller: BUZZ Rig: Shift: DAY
Engineer: Phone:
Starting Depth: 60 Finish Depth: 67 Footage Drilled: 7
Static Water level: Ft. Time:

Drilling Log:
Depth Description Drilling Rate
From To
60 67 Hard O-req + Black Rock LAST 5

Feet turned Red

Notes and Remarks:

Bits used: Mud used:

Materials and supplies used:
Date: Feb 5-6 1987

Job No.: Description: OLA A Well 3603-01

Driller: Buzz Rig: #1 Shift: Day

Engineer: Phone: 

Starting Depth: 55 Finish Depth: 60 Footage Drilled: 5

Static Water level: ______ Ft. Time: ______

Drilling Log:

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
<th>Drilling Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
<td>35-60</td>
<td>Hard Rock - Grey to Black</td>
</tr>
</tbody>
</table>

Notes and Remarks:

Bits used: _______ Mud used: ________________________

Materials and supplies used: ___________________________________
TO: Linnel Nishioka, Deputy Director Commission on Water Resources Management
FROM: Andrew Monden, Chief Engineer
SUBJECT: Job No. 42-HW-A, Olaa Station No. 3 Well Well No. 3603-01, Puna, Hawaii

Transmitted for your files is the Well Completion Report for the subject well.

Should you have any questions, please call Dickey Lee of the Inspection Section at Ext. 7-0280.

DL:
Attach.
WELL COMPLETION REPORT

PART I. WELL CONSTRUCTION REPORT

4. Name of driller who performed work: Paul Frandsen
5. Type of rig/construction: 36-1-RIG
6. Date(s) Well Construction and pump tests (if any) completed: 5-6-1988
7. GROUND ELEVATION (referenced to mean sea level, msl): 602 ft
   Well Bench Mark (description/location): NONE

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

   Depths (ft.) Rock Description, Water Level, Dates, etc.
   0 to 67 Gray rock - hard
   67 to 78 Red Klinkers - med. hard
   (If more space is needed, continue on back)

9. Total depth of well below ground: 662 ft
10. Hole size:
    22 inch dia. from 0 ft. to 664 ft. below ground
    (Blank)
    (Blank)

11. Casing Installed: 16 in. I.D. x 0.3125 in. wall solid section to 596 ft. below ground
    16 in. I.D. x 0.3125 in. wall perforated section to 662 ft. below ground
    Casing Material/Slot Size: COR TEN/100 Sq. in 1 L.F.

12. Annulus:
    Grouted from 0 ft. below ground to 585 ft. below ground
    Gravel packed from 585 ft. below ground to 660 ft. below ground

13. Initial water level: 276 ft. below ground
14. Initial chloride: 3 ppm
15. Initial temperature: 68.5 °F
16. PUMPING TESTS: Reference Point (R.P.) used: GL, which elevation is 602 ft.
   (1) Step-Drawdown Test Date 5-23-88
   Start water level 557.0 ft. below R.P.
   End water level 597.2 ft. below R.P.
   (2) Long-term Aquifer Test Date 5-23-88

17. Aquifer Pump Test Procedures data & graphs (1/19/86 LTAT Form) attached? x Yes No
18. As-built drawings attached? x Yes No
19. Other remarks/comments: (On back of this form)

Well Drilling Contractor (print): Hawaiian Island Drilling L. C-67 Lic. No. 13209
Signature
Date: 10/11/91

Surveyor (print): HONALDO A. ADELLO L. C. No. 8-7564 Hawaii
Signature
Date: 10-11-91

Applicant (print): ANDREW M. MONDEN
Signature
Date: 10/11/91
OLAA STATION NO. 3 3603-01

AS BUILT SECTION
Drilled: May 1988
Driller: Hawaiian Island Drilling, Inc.

Nipple

602 Fl. MSL - Top of Casing

596 Feet Solid Casing, 16 in. I.D. - 313 in. Wall

585 Feet Cement Grout

45 Fl. Above MSL
Static Water Level

Casing Guide

664 Feet Drilled Hole, in. Diameter

65 Feet Open Hole

65 Feet Half-Flo Shutter Screen, 16 in. I.D. - 313 in. Wall

-62 Fl. MSL
Bottom of Well

NOT TO SCALE

Job No. 42-HW-A
TO: Linnel Nishioka, Deputy Director  
Commission on Water Resources Management

FROM: Andrew Monden, Chief Engineer

SUBJECT: Job No. 42-HW-A, Olaa Station No. 3 Well  
Well No. 3603-01, Puna, Hawaii

Transmitted for your files is the Well Completion Report for the subject well.

Should you have any questions, please call Dickey Lee of the Inspection Section at Ext. 7-0280.

DL:

Attach.
PART I.  WELL CONSTRUCTION REPORT


4. Name of driller who performed work: Paul Frandsen

5. Type of rig/construction: 36-L-RIG

6. Date(s) Well Construction and pump tests (if any) completed: 5-6-1988

7. GROUND ELEVATION (referred to mean sea level, msl): 602 ft.
   Well Bench Mark (description/location): NONE
   Elevation(msl):

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

9. Total depth of well below ground: 662 ft.

10. Hole size: 22 inch dia. from 0 ft. to 664 ft. below ground

11. Casing Installed: 16 in. I.D. x 0.3125 in. wall solid section to 596 ft. below ground
    Casing Material Slot Size: CORTEN/100 Sq. in 1 L.F.

12. Annulus: Grouted from 0 ft. below ground to 585 ft. below ground
    Gravel packed from 585 ft. below ground to 660 ft. below ground

13. Initial water level: 276 ft. below ground.

14. Initial chloride: 3 ppm

15. Initial temperature: 68.5 °F

16. PUMPING TESTS: Reference Point (R.P.) used: GL, which elevation is 602 ft.

17. Aquifer Pump Test Procedures data & graphs (1/8/86 LTAT Form) attached? X Yes __ No

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

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

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

JOB NO. 42-HW-A
WELL COMPLETION REPORT

(Check Appropriate Box) [ ] Well Construction [ ] (Permanent) Pump Installation

Instructions: Please print or type and submit completed report within 30 days after well completion to the Commission on Water Resource Management, P.O. Box 621, Honolulu, Hawaii 96802. An as-built drawing of the well and chemical analysis should also be submitted for assistance call the Commission Regulation Branch at 887-0225, or 1-800-465-344 Extension 70225.

1. State Well No.: 3603-01
   Well Name: Olaa Sta. No. 3
   Island: Hawaii

2. Location/Address: Puna HI
   Tax Map Key: 1-7-01

PART II. WELL COMPLETION REPORT

Well Drilling Contractor (License): Hawaiian Island Drilling C-67 No. 13209
Signature

Surveyor (print): KONALDO A. ARELLIO
License No. L & 7564 Hawaii
Signature

Applicant (print): ANDREW M. MONDEN
Signature

Date: 12/11/01
Date: 10-11-01
Date: 10/11/01
OLAA STATION NO. 3 3603-01

AS BUILT SECTION

Drilled: May 1988
Driller: Hawaiian Island Drilling, Inc.

NOT TO SCALE
TO: Michael D. Wilson, Chairperson
Commission on Water Resource Management

FROM: Dean Uchida, Administrator

SUBJECT: Honokaa Exploratory Well A (Well No. 6428-01), Honokaa, Hawaii

The contractor, Paul Frandsen and Associates, declared bankruptcy in November of 1991. Subsequently, the State has worked with the bankruptcy trustee in obtaining the Bankruptcy Court's approval to hire Roscoe Moss Hawaii to complete the subject project. In January 1993, Roscoe Moss Hawaii did a video survey and found a latent defect, where cement grout had been incorrectly placed behind the perforated pipe (see Enclosure 1). It was then decided to drill deeper to elevation (-) 116 ft. and on June 1993, a pump test was conducted. The results using a 300 gpm test pump was a yield of 30 gpm with 37 feet of drawdown. The well was determined to be substandard as currently drilled and was rejected in accordance with the contract.

On September 22, 1995, the Department of the Attorney General and the Water and Land Development Branch reached a tentative agreement with the bonding company to drill a replacement well at no cost to the State.

In the interest of time, we plan to drill the replacement well under the approved Well Construction Permit for the existing rejected exploratory well and follow-up with the necessary permits shortly. We plan to abandon the rejected well or use it as a monitor well.

The replacement well description will be the same as the original well and will be drilled approximately 65 feet northeast from the original site (see Enclosure 2). The drilling is scheduled to start in January 1996.

Should you have any questions, please contact Manabu Tagomori of the Water and Land Branch at extension 7-0230.

AM:ek
Enc.
HONOKAA WELL A (6428-20)
HONOKAA, HAWAII

AS BUILT SECTION

Drilled: February, 1993
Driller: Paul Frandsen & Associates and Roscoe Moss Hawaii

Nipple
1330 Fl. MSL - Top of Casing
1336 Fl. MSL - Finish Grade

1,452 Feet Total Drilled Hole, 14 in. Diameter
80 Feet Full-Pig Shutter
1,320 Feet Solid Casing, 14 in. I.D. x 0.312 in. Wall
1,400 Feet Cement Grout

7.5 Fl. Above MSL
Static Water Level

--- Casing Guide

-116 Fl. MSL
Bottom of Well

NOT TO SCALE
DIVISION OF WATER AND LAND DEVELOPMENT

JOB NO. 48-HW-0

HONOKAA WELL 'A' (6428-01)

HONOKAA, HAWAII

T.M.K.: 4-5-19-20

ACT 216, SLH 1987, Item A-27, B-87-422-C
B-87-423-C
B-87-424-C
B-87-425-C

PLOT PLAN

SCALE: 1" = 40'

CASING GUIDE

1-1/4" Min.
7 1/2" Steel (ASTM 242)

2" Min.
45° Steel casing
August 1, 1988

Mr. William Sewake
Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Sewake:

Olaa Station 3 Well (3603-01)

Attached for your information and files is a copy of the graphical plot of the 3-day pumping test results for Olaa Station No. 3 Well.

Sincerely,

[Signature]

MANABU TAGOMORI
Deputy for Water Resource Management

[Initial]
Attach.
Division of Water & Land Development
Olaa, Hawaii
Well No. 3603-01 Olaa Sta. No.3
71 Hrs. Pump Test
May 23, 1988 to May 26, 1988

CHLORIDE

DRAWDOWN

PUMPAGE

ppm
feet
gpm
June 23, 1988

Paul Frandsen & Associates
765 Amana Street
Room 510
Honolulu, Hawaii 96814

Gentlemen:

Job No. 42-HW-A, Olaa Station Well No. 3,
Exploratory Drilling, Puna, Hawaii

The subject project has been completed and accepted as a result of a pre-final and final inspection conducted on June 17, and June 20, 1988 respectively. As such, the project completion date will be noted as June 17, 1988 and upon your meeting all the requirements of this project, we shall begin the process of closing this contract.

It should be emphasized that weekly payroll reports must be submitted as one of the requirements to close this contract. You may want to contact Hawaiian Islands Drilling, Inc. for the earlier payroll reports as none have been submitted thus far.

Liquidated damages of $100 per day in excess of the completion date will be considered in the final settlement for this project. The notice to proceed on this subject project was issued on January 26, 1987 with a contract completion date of July 25, 1987. Extensions of 15 days and 9 days were granted due to inclement weather with a new completion date of August 19, 1987. The actual completion date of the project, determined by our inspectors, was June 17, 1988. The total days in excess of the completion date is 303 days less 29 days in addition to the above extensions for rainy days giving 274 excess days. Accordingly, the liquidated damages will be 274 days x $100 = $27,400.00.

Should you have any questions, please contact Mr. Linford Chang at 548-3944.

Sincerely,

MAMABU TAGOMORI
Deputy for Water Resource Management

NK:ey
cc: Hawaii Dept. of Water Supply
Hawaiian Island Drilling, Inc.
Morris Ota
June 14, 1988

Department of Land and Natural Resources
Division of Water and Land Development
ATTENTION: MR. NOBU KANESHIRO
P.O. Box 373
Honolulu, HI 96809

JOB NO. 42-HW-A
OLAA STATION WELL O. 3 (3603-01)
EXPLORATORY WELL DRILLING

Attached for your information and files is a copy of the Laboratory Analysis Report of a water sample from the subject well. The sample was obtained May 24, 1988 during the yield test.

William Sewake
Manager

...Water brings progress...
June 13, 1988

Mr. Tom Oothoudt  
President  
Hawaiian Islands Drilling, Inc.  
210 Central Pacific Plaza  
220 So. King St., Suite 210  
Honolulu, Hawaii 96813

Dear Mr. Oothoudt:

Job No. 42-HW-A, Olaa Station Well No. 3,  
Exploratory Drilling, Puna, Hawaii

This is in reply to your letter of May 19, 1988 about your concerns on the problems encountered on this project.

Regarding the third and last alignment test run on this project, it was required by the specifications, "Section 502-6 - PLUMBNESS AND ALIGNMENT" which calls for an alignment test after the hole is drilled and after the casing is installed. You will recall that you decided to run the second alignment test on your own volition on March 8, 1988 to be sure the casing was aligned prior to annular grouting because of marginal alignment results on the initial alignment test on the open hole.

As to your comment about not receiving written orders from the engineer prior to ordering the casings, we would like to refer to our letter of December 15, 1987 denying your request to substitute the casing and informing you to order the specified casing and pursue completion of the project. Also, please refer to our January 13, 1988 letter again notifying you to provide 600 linear feet of solid casing and 60 linear feet of perforated casing as specified.

The meeting on Friday, May 13, 1988 was held in our office at the request of Mr. Paul Frandsen to discuss some of his concerns on the project. You may want to discuss the context of this meeting with Mr. Paul Frandsen. For your information, Mr. Frandsen did not request Mr. Walsh's attendance.

The following is our response to your request for information on the subject project, in the same order as your questions and statements.
Mr. Tom Oothoudt

1. It should be noted that you are allowed any time extensions for legitimate reasons, such as inclement weather etc., subject to review and approval by the Department.

1a. It should be noted that monthly payments are prepared after the 20th of each month and processed thereafter for appropriate signatures and payment in a timely manner. We will be open to discussion of any monthly payment taking an inordinate time to process.

2. 180 days completion is normal for a job of this sort. Others bid on this project under the same constraints taking into consideration time of completion, conditions, etc. As a qualified contractor, Hawaiian Islands Drilling Inc., must have considered this before submitting a bid.

3. Our records indicate that the driller on the job site requested to use dynamite in the hole on or about the week of August 10, 1987. On August 14, 1987, Everett Fukushima was informed that the use of dynamite was acceptable but should the well become unacceptable and abandoned, the contractor must reimburse all payments to the State.

4. Please refer to our earlier comments on this subject matter of ordering the casing. It should be further noted that your request of January 4, 1988 for a value engineering change proposal was not accepted and by our letter of January 13, 1988 you were notified to proceed with the casing as specified.

5. On March 3, 1988 the Department of Water Supply sent samples of rock-pack material that the contractor submitted for our review. By letter dated March 11, 1988 to DWS, rock-pack material was determined unacceptable and we recommended the gravel sample from Allied Aggregate Quarry.

6. Please refer to our comments in this letter.

7. To the best of our knowledge, the area represents typical Hawaiian basalt flow lavas. No data are available to show otherwise. It is incumbent on the contractor to deal with conditions encountered within the time constraints.

7a. Yes, the well should not vary from the vertical in excess of one-half the I.D. per any 100-foot interval of the well being tested and is considered a standard in the alignment test. It should be noted that you were allowed to use a smaller "dummy" for the alignment in this well.

7b. Well records are available. You may research the files and pay for any costs involved.
8. Yes, we shall check the records on our weekly report and grant you credit for any rainy days.

We hope the above information satisfies your concerns. Should you have any questions, please call Mr. Linford Chang at 548-3944.

Sincerely,

MANABU TAGOMORI
Deputy for Water Resource Management

cc: Dept. of Water Supply,
    County of Hawai'i
    Morris Ota
    Everett Fukushima
    Paul Frandsen
June 6, 1988

MEMORANDUM FOR THE RECORD

FROM: Ed Sakoda

SUBJECT: Olaa Station No. 3 Well (3603-01) Pumping Test

The test was conducted from May 23 to May 26, 1988. Results are as follows:

1. Personnel:
   - Paul Frandsen, Driller
   - Charles Frandsen, Driller
   - Rick Frandsen, Driller
   - Milton Pavao, DWS
   - Dennis Inouye, DWS
   - Alton Oye, DWS
   - Ed Sakoda, DOWALD

2. Length of test: 71 hours

3. Pumping Rate: 2000 gpm

4. Chlorides: 3 ppm

5. Drawdown: 4.8 ft. (steady)

6. Recovery: 99% recovery within 5 minutes

7. Temperature: 68.5°F

8. Total amount pumped: 8,451 million gallons

9. Colliform was found in the sample taken by DWS on Tuesday, May 24, 1988. After shutdown on Thursday, the well was re-chlorinated and re-sampled. Results are pending.

ED SAKODA

ES: dh
June 6, 1988

MEMORANDUM FOR THE RECORD

FROM: Ed Sakoda

SUBJECT: Olaa Station No. 3 Well (3603-01) Pumping Test

The test was conducted from May 23 to May 26, 1988. Results are as follows:

1. Personnel:
   - Paul Frandsen, Driller
   - Charles Frandsen, Driller
   - Rick Frandsen, Driller
   - Milton Pavao, DWS
   - Dennis Inouye, DWS
   - Alton Oye, DWS
   - Ed Sakoda, DOWALD

2. Length of test: 71 hours

3. Pumping Rate: 2000 gpm

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8. Total amount pumped: 8.451 million gallons

9. Colliform was found in the sample taken by DWS on Tuesday, May 24, 1988. After shutdown on Thursday, the well was re-chlorinated and re-sampled. Results are pending.

ED SAKODA

ES: dh
OLAA Sta No 3 Pumping Test
23-26 May 1988

START: 0953 5/23/88
STOP: 1126 5/23/88 GI LEAK (RICK)
START: 1200 5/23/88
STOP: 1100 5/26/88 DWS - MILCON PAVAO - OK w/ DEN

FOUND BACTERIA IN SAMPLE TAKEN ON 5/25
SHUT DOWN EARLY TO CHLORINATE

AGREEMENT w/ DRILLER TO NOT CHARGE
FEE CHLORINATION IF GIVEN CREDIT
FOR 72 HRS 30 MIN (AGREEMENT SIGNED
BY DRILLER - MILCON PAVAO TO ERP)

S/FRANCISCO
5/26/88
March 11, 1988

Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Gentlemen:

Job No. 42-IIW-A, Oiaa Station Well No. 3,
Exploratory Drilling, Puna, Hawaii

We have examined the two packets of the rock-pack material transmitted March 3, 1988 and have found them not acceptable.

However, the subsequent gravel sample from Allied Aggregate Quarry is acceptable and you may have the contractor proceed with the use of this material for the rock packing of the annular space. The aggregates should be of the gradation called for and be clean and washed prior to using in accordance with the specifications.

Should you have any questions, please call Mr. Linford Chang at 548-3944.

Sincerely,

MARABU TAGOMORI
Deputy for Water Resource Management

NK:ey
cc: Morris Ota
State Department of Land and Natural Resources
Division of Water and Land Development
ATTENTION: MR. NOBU KANESHIRO
P.O. Box 373
Honolulu, HI 96809

OLAA STATION WELL NO. 3 EXPLORATORY DRILLING
JOB NO. 42-HW-A

Attached for your use and files are measurements of installed casings.
Note that 66.04' of perforated casing and 598.09' of solid casing were installed.

H. William Sewake
Manager
MP
Enc.

...Water brings progress...
Measurements of 10" diameter casing

(Installed Lengths)

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perforated case</td>
<td>28.06'</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>37.98'</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>66.04'</td>
</tr>
<tr>
<td>3</td>
<td>Solid casing</td>
<td>38.00'</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>37.98'</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>38.04'</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>38.00'</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>38.02'</td>
</tr>
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<td>8</td>
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</tr>
<tr>
<td>9</td>
<td></td>
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</tr>
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<tr>
<td>11</td>
<td></td>
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</tr>
<tr>
<td>12</td>
<td></td>
<td>37.94'</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>37.95'</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>38.02'</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>38.05'</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>37.98'</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>38.04'</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>37.97'</td>
</tr>
</tbody>
</table>

Total: 596.05'

Note: Final casing height is approximately 3' above existing ground.
DEPARTMENT OF WATER SUPPLY • COUNTY OF HAWAI'I
ENGINEERING DIVISION

JOB TITLE:.section well No. 3, Exploration Drilling
DATE: 2.29.86

JOB NO.: E.W.O. NO.: 85-004

Measurements of 12" diameter casing (Delivered Lengths)

<table>
<thead>
<tr>
<th>Shoe</th>
<th>Perforated Casing (Delivered Lengths)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>38.04'</td>
</tr>
<tr>
<td>2</td>
<td>37.78'</td>
</tr>
<tr>
<td>3</td>
<td>38.00'</td>
</tr>
<tr>
<td>4</td>
<td>37.72'</td>
</tr>
<tr>
<td>5</td>
<td>38.04'</td>
</tr>
<tr>
<td>6</td>
<td>37.91'</td>
</tr>
<tr>
<td>7</td>
<td>38.00'</td>
</tr>
<tr>
<td>8</td>
<td>37.02'</td>
</tr>
<tr>
<td>9</td>
<td>38.07'</td>
</tr>
<tr>
<td>10</td>
<td>37.60'</td>
</tr>
<tr>
<td>11</td>
<td>38.035'</td>
</tr>
<tr>
<td>12</td>
<td>37.945'</td>
</tr>
<tr>
<td>13</td>
<td>37.92'</td>
</tr>
<tr>
<td>14</td>
<td>38.02'</td>
</tr>
<tr>
<td>15</td>
<td>38.825'</td>
</tr>
<tr>
<td>16</td>
<td>37.98'</td>
</tr>
<tr>
<td>17</td>
<td>38.64'</td>
</tr>
<tr>
<td>18</td>
<td>37.94'</td>
</tr>
</tbody>
</table>

Markings on casing:
Hawaiian Islands Drilling
Hilo, Hawaii
Made by Kaiser Moss Co.
ASTM A242 Corten Steel
Los Angeles, Calif., USA
16% 1.5% 1.0% 0.25%
Weekly Report No. 48

State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

WEEKLY CONSTRUCTION REPORT
Covering Week Ending Jan 2, 1987

JOB NO. 42 - HW - A
CONTRACTOR: Hawaiian Island Drilling Inc.

Drilling exploratory well no. 360 - 01

DESCRIPTION OF CONSTRUCTION ACTIVITIES
Drilling of well at Olaa

<table>
<thead>
<tr>
<th>Materials</th>
<th>Equipment (Hours)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Item</td>
<td>Rec'd</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remarks: Cont. worked only 4 days out of the week due to holidays, cont. went down from 625 ft. to 855 ft. dig a total of 30 ft, hit some soft cinders, cont. starting to hit solid blue rock now, cont. said that they got a little water about a gallon of water that they bailed out, will call if they hit more water.

Weather: Mostly cloudy days

Payroll for Week Ending: 
Payroll Amount: 
Total Manhours of Labor Used: 32
No. of Men: 1

Submitted by: [Signature]
MEMORANDUM

TO: Rae M. Loui, Deputy Director
Commision on Water Resource Management

THROUGH: Dean Uchida, Land Administrator

FROM: Andrew Monden, Chief Engineer

SUBJECT: Well Completion Reports

As requested by the County of Hawaii, Department of Water Supply in their letter dated February 28, 1997, we submit the following information:

1. **Olaa Well No. 3 (3603-01)**
   Well construction report and a copy of the as-built drawing.

2. **Honokaa Exploratory Well “A” (6428-01)**
   As described in the attached letter dated November 27, 1995, the original well was not constructed properly and was subsequently rejected. It is presently being used as a monitor well for the replacement well which is currently being drilled. Also attached is the as-built drawing for the monitor well.

The remaining two well completion reports will be forthcoming. Should you have any questions, please contact Mr. Dickey Lee of the Construction Section at 587-0280.

RM:
attach.
cc: DWS-Hawaii

m:\wld\mauka\well1.rpt
## Part I. Well Construction Report

<table>
<thead>
<tr>
<th>Depth (ft.)</th>
<th>Description</th>
<th>Water Level, Dates, etc.</th>
<th>Depth (ft.)</th>
<th>Description</th>
<th>Water Level, Dates, etc.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 67</td>
<td>Gray rock - hard</td>
<td></td>
<td>78 to 81</td>
<td>Red/Brown Rock - hard</td>
<td></td>
</tr>
<tr>
<td>67 to 78</td>
<td>Red Klinkers - med. hard</td>
<td></td>
<td>81 to 97</td>
<td>Gray Rock - hard</td>
<td></td>
</tr>
</tbody>
</table>

9. Total depth of well below ground: 662 ft.
10. Hole size: 22 inch dia. from 0 ft. to 664 ft. below ground
     16 in. I.D. x 0.3125 in. wall solid section to 596 ft. below ground
     16 in. I.D. x 0.3125 in. wall perforated section to 662 ft. below ground

11. Casing installed: 16 in. J.D. x 0.3125 in. wall solid section to 596 ft. below ground
    Casing Material/Slot Size: COR TEN/100 Sq. in 1 L.F.

12. Annulus:
    Grouted from 0 ft. below ground to 585 ft. below ground
    Gravel packed from 585 ft. below ground to 660 ft. below ground

13. Initial water level: 276 ft. below ground. Date and time of measurement: 5-23-88
14. Initial chloride: 3 ppm Date and time of sampling: 5-24-88
15. Initial temperature: 68.5°F Date and time of measurement: 5-24-88

16. Pumping Tests:
    (1) Step-Drawdown Test Date
        Start water level ft. below R.P.
        End water level ft. below R.P.
    (2) Long-term Aquifer Test Date 5-23-88
        Start water level 557.0 ft. below R.P.
        End water level 597.2 ft. below R.P.

17. Aquifer Pump Test Procedures data & graphs (1/9/96 LTAT Form) attached? Yes No
18. As-built drawings attached? Yes No
19. Other remarks/comments: On back of this form

---

Well Drilling Contractor (print): Hawaiian Island Drilling C-57 Lic. No. 13209
Signature: [Signature]
Date: [Date]

Surveyor (print): [Signature]
Lic. No.: [Lic. No.]
Date: [Date]

Applicant (print): ANDREW M. MONDEN
Signature: [Signature]
Date: [Date]
PART II. (PERMANENT) PUMP INSTALLATION REPORT

20. Pump Installation Company: ______________________________

21. Name of person performing work: ____________________________

22. Date Pump Installation Completed: __________________________ 

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

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

25. Other remarks/comments: (See below)

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

   Signature ___________________________ Date ____________

   Applicant (print) ________________________________

   Signature ___________________________ Date ____________

8.(cont’d) DRILLER’S LOG (cont’d):

<table>
<thead>
<tr>
<th>Water Level Depth (ft.)</th>
<th>Rock Description, Remarks</th>
<th>Dates (ft.)</th>
<th>Water Level Depth (ft.)</th>
<th>Rock Description, Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>97 to 220 Red &amp; Gray lava - soft</td>
<td></td>
<td>to 220</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>220 to 268 Gray Rock/hard, Static</td>
<td>__________________________</td>
<td>to 268</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>to water level @ 250'</td>
<td>__________________________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>268 to 662 Red &amp; Gray lava, Hit 20'</td>
<td>__________________________</td>
<td>to 662</td>
<td>to</td>
<td></td>
</tr>
<tr>
<td>to water level @ 607</td>
<td>__________________________</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>to</td>
<td>__________________________</td>
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</tr>
<tr>
<td>to</td>
<td>__________________________</td>
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</tr>
<tr>
<td>to</td>
<td>__________________________</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

WELL DRILLING PERMIT
for
Olaa Station No. 3 Exploratory Well
State Well No. 3603-01
Puna, Hawaii

TO: Hawaii Department of Water Supply
25 Aupuni Street
Hilo, Hawaii 96720

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii", your application to drill Olaa Station No. 3 Exploratory Well, State Well No. 3603-01 is approved subject to the following conditions:

1. A Driller's Well Completion Report (enclosed) shall be submitted to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809, within 60 days after completion of the well.

2. Pumping test data shall be submitted to the Division of Water and Land Development within 60 days after testing of the well.

3. Reports of pumpage shall be submitted after the well is put into production.

4. An "as-built" drawing of the well and a map showing the exact location of the well shall be submitted upon completion of the well.

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

APP 14 1987

Date of Issuance

Enc. (Driller's Report Form)
cc: USGS
Dept. of Health,
Drinking Water Program
OLAA STATION NO. 3 3603-01

AS BUILT SECTION

Drilled: May 1988
Driller: Hawaiian Island Drilling, Inc.

NOT TO SCALE

Job No. 42-HW-A
Division of Water & Land Development
Olaa, Hawaii
Well No. 3503-01 Olaa Sta. No.3
71 Hrs. Pump Test
May 23, 1988 to May 26, 1988

CHLORIDE

DRAWDOWN

PUMPAGE

CHLORIDE

DRAWDOWN

PUMPAGE

HOURS

0 20 40 60 80 100 120
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

WEEKLY CONSTRUCTION REPORT
Covering Week Ending Jan 2, 1987

JOB NO. 42 - HW - A
CONTRACTOR: Hawaiian island drilling inc.

DESCRIPTION OF CONSTRUCTION ACTIVITIES
Drilling exploratory well no.

Materials

<table>
<thead>
<tr>
<th>Item</th>
<th>Rec'd</th>
<th>Used</th>
<th>Hours Used</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32</td>
</tr>
</tbody>
</table>

Equipment (Hours)

<table>
<thead>
<tr>
<th>Item</th>
<th>Rec'd</th>
<th>Used</th>
<th>Hours Used</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>36 - L - rig</td>
</tr>
</tbody>
</table>

Remarks: Cont. worked only 4 days out of the week due to the holidays, cont. went down from 625 ft. to 655 ft. dug a total of 30 ft, hit some soft cinders, cont., starting to hit solid blue rock now, cont. said that they got a little water about a gallon of water that they bailed out, will call if they hit more water.

Weather: Mostly cloudy days

Payroll for Week Ending Payroll Amount

Total Manhours of Labor Used: 32 No. of Men: 1

Submitted by:
WATER RESOURCES & FLOOD CONTROL \nDivision of Water and Land Development

FROM: ___________ TO: ___________ INITIAL: ___________

DATE: ___________ FILE IN: ___________

PLEASE: ___________

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

FOR YOUR

- Approval
- Signature
- Information

REMARKS: ___________

PLEASE:

- Investigate & Report
- Draft Reply
- Acknowledge Receipt
- Type Draft
- Type Final
- Xerox copies
- File
- Mail

FOR YOUR

- Approval
- Signature
- Information
November 23, 1987

Mr. William Sewake
Manager
Department of Water Supply
County of Hawaii
25 Aupuni Street
Hilo, Hawaii 96720

Attn: Mr. Milton Pavao

Dear Mr. Sewake:

Olaa Station Well #3, Puna, Hawaii

Attached for your information and file is a memo and caliper log on the Olaa Station Well #3, which are self explanatory.

Sincerely,

MANABU TAGOMICHI
Manager-Chief Engineer

DL:RJ
Attachment.
November 16, 1987

MEMORANDUM FOR THE RECORD

FROM: Dan Lum

SUBJECT: Travel Report - Olaa Station Well #3, Puna, Hawaii

On November 5, 1987, I travelled to Olaa, Hawaii to electric log the Olaa Station No. 3 exploratory well presently being drilled by Charles Frandsen for Hawaiian Island Drilling Co., as a result of a meeting on Monday, November 2, 1987, with Paul Frandsen, Brian Walsh, Nobu, and myself.

At the Monday meeting, the drillers claimed that no drilling progress could be made beyond the depth of 395'-405' because of "sand/cinders" cave-ins, aggravated by artesian water that was encountered at 395' and rose to a depth of 250'. They requested to install casing in order to complete the well. I responded that they could at their own expense install temporary casing which would have to be removed before permanent casing was installed. Brian responded, they didn't want to install temporary casing. Brian then asked if we wanted to pump test the "water" they found in the well. I responded no, because I didn't believe there was any significant amount of water, if any. Brian then asked if they could cement the hole and re-drill. I responded that we needed to verify the condition of the well, as claimed, before we would consider allowing the use of cement in the hole.

On Thursday, November 5, at 8:40 a.m., I ran the water level probe and measured the depth to water at 384.6 ft. below ground and the total depth of the hole at 394.5 ft. The 10-foot water level above bottom of hole and gray mud (not clay) found on the probe suggest that the "water" is nothing more than a small accumulation of percolating formation water that mixes with the drill cuttings (driller Charles Frandsen said no water had to be added for drilling).

At about 9:30 a.m., I informed Charles of my conclusions, based on the electric logging and driller's logs, that: (1) that no ground water aquifer had been encountered by the well so far; (2) drilling conditions and formations encountered thus far are typical for Hawaiian basalt wells; cementing of the well down to a depth of 50 feet above mean sea level is allowed provided that complete information is logged in the driller's report; and (4) well is to be completed as specified.

[Signature]

DL: ko
November 13, 1987

Hawaiian Island Drilling, Inc.
210 Central Pacific Plaza
220 S. King St., Suite 210
Honolulu, Hawaii 96813

Gentlemen:

Job No. 42-HW-A, Olaa Station Well No. 3 (3603-01)
Exploratory Drilling Puna, Hawaii

This is to acknowledge receipt of your letter of November 2, 1987 stating that you have hired Brian Walsh and Paul Frandsen of Paul Frandsen & Son Drilling Company as your consultants on this well drilling project.

Your consultant, Mr. Paul Frandsen, requested "down time credit" due to unusual drilling conditions encountered on this subject project. Please clarify the term "down time credit" in order to avoid any misunderstanding of your request.

At the November 2, 1987 meeting as referred to in Mr. Frandsen's letter, Mr. Brian Walsh and Mr. Paul Frandsen indicated the problem during drilling of the well was due to encountering water and caving in of the well at the 395 foot to 405 foot depth. Mr. Walsh indicated the caving in of the well caused some difficulty and they could not make any progress in their drilling. As such, Mr. Walsh suggested installing a 20-inch casing to alleviate the caving in but it was indicated that this may cause other problems in development of the well since the intent was to leave the 20-inch casing permanently in the well.

As a result of the above discussion, Mr. Dan Lum indicated that he would make a field check of the well with the Logger before making any decision. Hence, on November 5, 1987 Mr. Lum went to the well site and used the Logger. The field check revealed there was no water in the well as indicated earlier. The caliper log reflected some caving in of the well walls but the well condition and formation found were considered typical of basalt wells drilled in Hawaii.
At this time, we urge you to expedite and complete the drilling of this well project. It should be emphasized that you are presently working under conditions of the liquidated damages of this project ($100 for each day in excess of the completion date). Further, as stated in our letter of September 28, 1987, you are required to submit the weekly payroll affidavits immediately so as to comply with the contract requirements for this project.

Should there be any questions, please call Mr. Linford Chang at 548-3944.

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

cc: Dept. of Water Supply, Hilo
     Mr. Paul Frandsen
     Mr. Morris Ota
June 2, 1987

Mr. H. William Sewake
Manager
Department of Water Supply
25 Aupuni Street
Hilo, Hawaii 96720

Dear Mr. Sewake:

Job No. 42-HW-A, Olaa Station Well No. 3 (3603-01)
Exploratory Drilling, Puna, Hawaii

Thank you for your letter of May 18, 1987 regarding your concerns on the timely completion of the subject well.

The contractor, Hawaiian Island Drilling, Inc., was informed about this delay by our letter of May 13, 1987 (copy attached). On May 26 we contacted the contractor by telephone and inquired about the delay and warned him of liquidated damages for any excess days beyond the completion date. The contractor (Tom Oothoudt, president, Hawaiian Island Drilling) indicated he was having problems drilling due to the very hard material encountered. Further, Mr. Oothoudt said that he was in the process of replacing the original driller with another driller resulting in no construction activity in the past three weeks. He also indicated that he will be writing to us requesting to work longer hours to expedite the work, to request for an extension of time, and to provide information on all delays.

We are also concerned about the timely completion of this exploratory well and shall keep you informed on the progress of this project.

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

NK:In
May 13, 1987

Hawaiian Islands Drilling, Inc.
210 Central Pacific Plaza
220 So. King St., Suite 1075
Honolulu, Hawaii 96813

Gentlemen:

Job No. 42-HW-A, Olaa Station Well No. 3 (605-01)
Exploratory Drilling, Puna, Hawaii

The notice to proceed on the subject project was given on January 26, 1987 with a contract completion date of July 25, 1987 (180 days). In checking the progress of your work to date, we find the drilling of the well is not proceeding according to schedule.

The progress of your work to date shows you have completed approximately 16 to 20 percent of the project whereas more than 50 percent of the contract time has gone by. Should you have any reason for your delay, please provide us the necessary information for our consideration in granting any extension.

It should be emphasized that the contract specifications calls for liquidated damages of $100 per day for each day in excess of the completion date.

Your immediate attention to this matter is appreciated. Should you have any questions, please call us.

Sincerely,

MANABU TAGOMORI
Manager-Chief Engineer

NK:ln
cc: Hawaii Dept. of Water Supply:
    Dan Lum
    Morris Ota
WELL DRILLING PERMIT
for
Olaa Station No. 3 Exploratory Well
State Well No. 3603-01
Puna, Hawaii

TO: Hawaii Department of Water Supply
25 Aupuni Street
Hilo, Hawaii 96720

In accordance with Chapter 166 of Title 13, "Rules for the Control of Ground Water Use in the State of Hawaii", your application to drill Olaa Station No. 3 Exploratory Well, State Well No. 3603-01 is approved subject to the following conditions:

1. A Driller’s Well Completion Report (enclosed) shall be submitted to the Division of Water and Land Development, P.O. Box 373, Honolulu, Hawaii 96809, within 60 days after completion of the well.

2. Pumping test data shall be submitted to the Division of Water and Land Development within 60 days after testing of the well.

3. Reports of pumpage shall be submitted after the well is put into production.

4. An "as-built" drawing of the well and a map showing the exact location of the well shall be submitted upon completion of the well.

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

APR 14 1987
Date of Issuance

WILLIAM W. PATY
Chairperson of the Board

Enc. (Driller’s Report Form)
cc: USGS
Dept. of Health,
Drinking Water Program
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

APPLICATION FOR (check one)

☐ WELL DRILLING PERMIT  ☐ WELL MODIFICATION PERMIT

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

Reference: Regulation 9, Dept. of Land & Natural Resources.

Is the well located in a Designated Ground Water Control Area?  Yes  ☑ No

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

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

2. WATER USER Hawaii Department of Water Supply Telephone ____________________________ Address ______________________ Zip Code ____________

3. PROPOSED DRILLING COMPANY:

4. PROPOSED WORK: ☐ Drill new well ☐ Deepen ☐ Redrill ☐ Alter ☐ Seal ☐ Abandon ☐ Install new pump ☐ Replace pump ☐ Modify pump

Fill in the diagram and briefly describe the proposed work (use back of form if necessary):

---

PROPOSED SECTION OF WELL

Elevation at top of casing ft. msl.

Ground Elev. 602± ft. msl.

Material:

Steel

Length: 60+ ft. Diameter: 10 in.

Wall thickness: in.

Casing: ☐ Perforated ☐ Screen

Material:

Steel

Length: 60+ ft. Diameter: 10 in.

Wall thickness: in.

Openings sq. in. /L.F.

Rock Packing 15 ft.

Solid casing:

Material:

Steel

Length: 58+ ft. Diameter: 10 in.

Wall thickness: in.

Total Depth ft.

Hole Dia. 22 in. min.

Cement Grout 58+ ft.

Open Hole:

Length: __________ ft.

Diameter: __________ in.

*Approximate elev. at filing. Final elev. (msl) by a surveyor licensed by the State must be submitted at start of construction.

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

6. PROPOSED AMOUNT OF WITHDRAWAL: Check most appropriate box and fill in amount.

☐ Daily _________ gallons  ☐ Monthly _________ gallons  ☐ Yearly _________ gallons

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

Signature: ____________________________ Date: ____________________________

Water User

Signature: ____________________________ Date: ____________________________

Landowner of Well Site

For Official Use: OLAA STATION WELL No. 3

State Well No. 3603-01

DLNR Permit No. ____________________________

DLNR Application No. ____________________________
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER AND LAND DEVELOPMENT

JOB NO. 42-HW-A

OLAA STATION NO. 3
EXPLORATORY WELL DRILLING (3603-01)
PUNA, HAWAII

ACT 283, SLH 1983, ITEM 1-WW-1 & 3C B-83-607
ACT 287, SLH 1984, ITEM 1-WW-1 B-84-407

LOCATION MAP

PROJECT SITE

ISLAND OF HAWAII

SECTION THRU WELL
NOT TO SCALE

CASING GUIDE DETAIL
NOT TO SCALE

FABRICATED CEMENT BASKET DETAIL
NOT TO SCALE

APPROVED 6-2-86

MANAGER-WATER ENGINEER
DIVISION OF WATER AND LAND DEVELOPMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
MINUTES
WATER COMMISSION MEETING
MANAGER'S OFFICE
CALIFORNIA DEVELOPMENT

NOVEMBER 25, 1986

MEMBERS PRESENT: Mss. Laura Chock and Jean Takase; Messrs. Rudy Hart, Edmund Hohu, Joseph Mattos, Masayoshi Onodera, Charles Sakamoto, Wilton Wong, Thomas Yogi, Hugh Ono, and H. William Sewake

EXCUSED: Messrs. Albert Lyman

OTHERS PRESENT: Mr. Timothy Lui-Kwan, Deputy Corporation Counsel
Mr. Denji Nakamura, Retiree of the Department of Water Supply

Department of Water Supply Staff:
Mr. George Tengan, Deputy Manager
Mr. Gary Kawasaka, Engineering Division Head
Mr. Kazumi Okamura, Operations Division Head
Mr. Herman Shiraishi, Waterworks Controller

CALL TO ORDER: Chairman Takase called the meeting to order at 10:00 a.m.

INTRODUCTION OF GUEST:
Mr. Nakamura

STATEMENT FROM THE PUBLIC:
None.

ADDENDUM TO AGENDA:
Chairman Takase entertained a motion to add the following items to the agenda:
MISCELLANEOUS:

A) DEDICATION OF WATER SYSTEM:

4) Lowrey Subdivision
   Owner: Various
   Tax Map Key: 6-6-02:21 (78-66)
   Lots: 14
   Zoning: RS-15
   Facilities Charge: 7 Services - $1,600 Paid
   7 Services - Not required, credited through existing 2-inch master meter

G) KEALAKEKUA WATER SOURCE AGREEMENT:

1) Assignor: Red Hill Joint Venture
   Assignee: Calvary Community Church of Kona, Inc.
   Units: 4
   To Tax Map Key: 7-6-21:14

H) QUITCLAIM DEED, TAX MAP KEY 5-5-02:23:

Kohala Corporation requests that the Commission quitclaim right of ingress and egress to Lot 246.

ACTION: Mr. Hart so moved; seconded by Mr. Onodera and carried.

MINUTES:

ACTION: Mr. Onodera moved for the approval of the minutes of the October 28, 1986 Water Commission meeting as circulated; seconded by Mr. Sakamoto and carried.

REPORT OF THE MANAGER, DISCUSSION/ACTION/DISPOSITION, ETC.:

PUNA:

A) JOB NO. 42-HW-A, OLAA STATION NO. 3 EXPLORATORY WELL, DOWALD PROJECT:

The State Department of Land and Natural Resources (DLNR) is the contracting agency for this project. On June 24, 1986 bids were opened at the Division of Water and Land Development (DOWALD). Hawaiian Islands Drilling, Inc., the low bidder, was awarded the contract.

The total project cost as determined by DOWALD is:

1. Bid Amount $ 232,950.00
2. Construction Contingency 12,050.00
3. Engineering and Inspection 23,000.00

Total $ 268,000.00
Funds are available as follows:

1. State C.I.P. Allotment  $165,000.00
2. Department of Water Supply Funds  $103,000.00

Total  $268,000.00

Because funds from the Water Department are involved, the Water Commission is a party to the contract.

The Manager recommended that the Water Commission concur with the award of the contract, subject to Corporation Counsel's approval, and that the Chairman be authorized to sign the contract.

ACTION: Mr. Yogi moved for the approval of the Manager's recommendation; seconded by Ms. Chock and carried.

MISCELLANEOUS:

A) DEDICATION OF WATER SYSTEMS:

Mr. Kawasaka informed the Commissioners that the conveyance documents have been finalized for the following reservoir site and easements, which the Department has been using for several years. The water facilities have been constructed in accordance with the Department's standards and are in acceptable condition for dedication.

1) Kona Highlands Subdivision Reservoir Site
   Owner: Safeguard Enterprises, Inc.
   Tax Map Key: 7-3-11:33, Lot A-39
   This document conveys the site including the existing 0.1-million gallon concrete reservoir to the Commission. The Department has been operating and maintaining the reservoir since October 1972.

2) 15-Foot Waterline Easement
   Owner: Kalani Sunset Corporation
   Tax Map Key: 7-6-24:Por. 25
   This easement is for an existing 8-inch waterline located between Royal Poinciana Drive Extension (a portion of Kalani Makai Subdivision, Increment 1) and Kuakini Highway. The Department has been operating and maintaining the waterline since April 1968.

3) Keahole Airport Water System
   Owner: Department of Transportation, Airports Division
   Tax Map Key: 7-3-10:33 and 7-3-43:3 and 32
The dedication documents are for the waterline and access easements from Queen Kaahumanu Highway to the airport terminal area and from Queen Kaahumanu Highway to the existing reservoir (mauka on the easterly side of the highway).

ACTION: Following a brief discussion on the dedication of water systems to the Commission as covered in the old and the existing Rules and Regulations, the Manager recommended that the Commission accept the above three documents, subject to the Corporation Counsel's approval, and that the Chairman be authorized to sign them.

4) Lowrey Subdivision

Owner: Various Owners
Tax Map Key: 6-6-02:21 (78-66)
Lots: 14
Zoning RS-15
Facilities Charge: 7 Services - $1,500 Paid
7 Services - Not required - Credited through existing 2-inch Master Meter

This 14-lot subdivision is in Wailea Bay. The water system has been constructed in accordance with the Department's standards and is in acceptable condition for dedication.

The Corporation Counsel's office is reviewing the Grant of Easement and Bill of Sale document.

The Manager recommended that the Commission accept this document, subject to the Corporation Counsel's approval, and that the Chairman be authorized to sign it.

ACTION: Mr. Hohu moved for the approval of the Manager's recommendation; seconded by Mr. Onodera and carried.

B) KEALAKEKUA WATER SOURCE AGREEMENT:

The Kealakekua Water Source Agreement includes terms and conditions for the developer, Red Hill Joint Venture, to assign their water rights to other developers, subject to the consent and approval of the Commission.

Received for action by the Commission is the assignment document from Red Hill Joint Venture to Calvary Community Church of Kona, Inc., for four (4) units on Tax Map Key 7-6-21:14.

The Commission previously consented to 28 assignments for a total of 997 units.
The Manager recommended that the Commission consent to this assignment and that the Chairman be authorized to sign the consent and assignment document, subject to the Corporation Counsel's approval.

ACTION: Mr. Onodera moved for the approval of the Manager's recommendation; seconded by Mr. Hohu and carried.

C) QUITCLAIM DEED, TAX MAP KEY 5-5-02:23:

By letter Kohala Corporation is requesting that the Water Commission relinquish right of ingress and egress to Lot 246, portion of Tax Map Key 5-5-02:23.

Mr. Kawasaka, while referring to a map of the area, outlined the tank site, existing easements, and the newly subdivided lots affected by this request. The Department of Water Supply has the right of ingress and egress to Lot 204 of Land Court Application 1120 which was recently subdivided into Lots 246 and 247.

Because Lot 246 is now located away from the existing reservoir site and the related easements, Kohala Corporation requests that the Commission, by a quitclaim deed which they (Kohala Corporation) will prepare in a form acceptable to the Corporation Counsel, relinquish the right of ingress and egress to this newly created lot. The Department has no objections to this request.

The Manager recommended that the Commission approve relinquishing the right of ingress and egress to Lot 246, Tax Map Key 5-5-02:23, and that the Chairman be authorized to sign the quitclaim deed, subject to the Corporation Counsel's approval.

ACTION: Mr. Sakamoto moved for the approval of the Manager's recommendation; seconded by Mr. Onodera and carried.

D) PERSONNEL - ENGINEERING DIVISION:

Attached to the agenda was a memorandum dated November 5, 1986 to the Manager requesting the creation of a Land Surveyor III position in the Land Branch of the Engineering Division. Justification for this new position is also included in the memorandum.

Mr. Kawasaka referred to the table of organization attached to the memo and briefly explained about the proposed position.

Discussion followed on the proposed position, the completion of the Land Surveyor series from I to IV, and the opportunity for career advancement for qualified departmental personnel.

Following the discussion, the Manager recommended that the Commission approve the request to create a Land Surveyor III position and that the Department pursue the creation of this position with the Department of Civil Service.
ACTION: Mr. Hart moved for the approval of the Manager's recommendation; seconded by Mr. Hohu and carried.

E) VEHICLE BID NO. 86-1, FURNISHING AND DELIVERING VEHICLES:

The bid proposal for this job was divided into three parts:

PART A (Engineering Division)

Basic - One compact 4-wheel drive pickup
Alternate - One compact 4-wheel drive station wagon

Trade-in - 1979 Malibu Sedan

PART B (Operations Division)

Two 2-wheel drive compact pickups
Trade-ins - 1979 Luv pickup and 1978 Fairmont station wagon

PART C (Operations Division)

One 2-wheel drive 4-door station wagon

Trade-in - 1978 Fairmont station wagon

Bids received on November 12, 1986 were enumerated in the agenda.

The low bids/bidders are (the trade-in prices, included in the bid, are shown in parenthesis):

PART

A - Basic. $10,603.99 for a 1987 S-10 Chevy from Hilo Motors, delivery within 90 days ($100.00)

A - Alternate $13,306.15 for a 1987 S-10 Chevy Blazer from Hilo Motors, delivery within 90 days ($100.00)

B $18,451.63 for a S-10 Chevy from Hilo Motors, delivery within 90 days ($100.00 and $300.00)

C $ 9,068.98 for a 1987 Cavalier from Hilo Motors, delivery within 90 days ($400)

Under Part A, an alternate was made a part of the bidding documents to see what kind of prices would be submitted for a four-wheel drive vehicle. Because the difference in price between the Basic and the Alternate is great, the recommendation will be for the Basic bid.

For Part C, the bid from Hilo Motors did not meet the specifications with regard to minimum engine size and front bench seat. The next low bidder is I.K. Motors, $9,922.01 for a 1987 Reliant station wagon,
delivery within 30 days ($200.00 for the trade-in is included in the bid price).

Staff feels that the trade-in prices are low and that if the vehicles are advertised for sale, the Department would get better prices.

Mr. Kawasaka and Mr. Okamura explained about the use of these vehicles in their divisions.

There was brief discussion on the Department's present setup of repairing, servicing and maintaining vehicles.

The Manager recommended that the trade-ins be deleted from the bids and be advertised for sale and that the Commission award the contracts for the vehicles indicated hereinabove as follows:

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PART</th>
<th>BASE PRICE</th>
<th>TAX</th>
<th>TOTAL CONTRACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hilo Motors</td>
<td>A</td>
<td>10,279.50</td>
<td>428.66</td>
<td>10,708.16</td>
</tr>
<tr>
<td>Hilo Motors</td>
<td>B</td>
<td>18,113.00</td>
<td>755.31</td>
<td>18,868.31</td>
</tr>
<tr>
<td>I. K. Motors</td>
<td>C</td>
<td>9,679.77</td>
<td>410.58</td>
<td>10,090.35</td>
</tr>
</tbody>
</table>

ACTION: Mr. Onodera moved for the approval of the Manager's recommendation; seconded by Mr. Hart and carried.

F) MONTHLY FINANCIAL REPORTS:

The financial reports for September 1986 were mailed earlier.

Peat, Marwick, Mitchell & Co., submitted the audit report on the Department's financial statements of June 30, 1986 and 1985, copies of which were distributed at the meeting. The Statements of Earnings and Retained Earnings shows a net earnings of $15,648 for the year ended June 30, 1986 as compared to a net loss of $582,822 for June 30, 1985.

The Manager suggested that the Commissioners call Mr. Shiraishi if they have questions on the report.

G) MONTHLY PROGRESS REPORT OF PROJECTS:

1) Job No. 83-359, 50-MG Waikoloa Reservoir No. III, South Kohala Water Project:

Regarding the cracks in the concrete work, the Manager reported that by telephone Mr. Manabu Tagomori, Manager-Chief Engineer of the Division of Water and Land Development, informed him that the shotcrete lining on the plans met all the requirements of the concrete design standards. A letter from Mr. Tagomori is forthcoming; upon receipt of said letter, the Department will respond to Isemoto Contracting Company.

2) Job No 22-HW-E, Piionoua Exploratory Well No. 2 (DLNR):

Roscoe Moss Company started work on this project on their own volition.
Job No. 42-HW-A, Olaa Station Well No. 3 Exploratory Well Drilling (DLNR):

Hawaiian Islands Drilling, Inc., also started work on this project on their own volition.

H) MANAGER'S REPORT:

1) Lalamilo Wind Farm Agreement:

At a meeting with the Manager, Mr. Robert Kleinert of Earth Energy Systems, Inc., claimed that the Lalamilo Wind Farms is not as profitable as they had expected it to be. He requested comments on whether the Commission would consider the following two amendments to the Power Purchase Agreement:

a) Lalamilo Ventures, Inc., (LVI) will guarantee a 20 percent savings in electrical cost only when there is enough wind blowing, and

b) Disconnection of HELCO's standby meter which costs LVI $2600 a month.

The Manager stated that LVI should abide by the terms of the agreement. One area which could possibly be negotiated is the distribution of proceeds from the sale of excess electrical energy. Before the Commission takes action on Mr. Kleinert's request, the Manager will ask him to submit a copy of the audited financial statements of LVI.

2) Personnel - Kona:

The Department plans to hire another water plant electrician-mechanic for the Kona area.

3) South Kohala Water Development:

The Manager presented to the Commission the plan for providing water to South Kohala. He briefly described the existing water system, which extends from Kawaihae to Lalamilo, along the South Kohala Coast, and the limitations of the Waimea source which require developers to drill their own wells for the water they need for their proposed developments. These wells need to be drilled several miles inland and at great depths which will result in a higher operational cost.

The proposed water plan is to develop a source in North Kohala and transport the water by a 36-inch transmission main to South Kohala.

It is anticipated that the project would satisfy the water needs for the South Kohala Coast for the next thirty years. Initially, $30 million is needed to construct the transmission main and some.
wells and reservoirs. As the demand increases, more wells will be developed.

The Manager referred to graphs showing: a) past, present and projected consumption in the South Kohala area and b) projected annual and cumulative savings from 1991 to 2010. As indicated by the graphs, dollarwise the benefits to the Department are not immediate, but will come in the future. However, developers would benefit as water will be immediately available. He then reviewed the proposed timetable of various activities of this project with regard to the North Kohala groundwater study, drilling of the well, different ways of financing (improvement district bonds, revenue bonds, or special agreement) the project, public informational meetings, environmental assessments, engineering, and construction.

Mr. Onodera commented that for a project of this size which takes long to accomplish, the time is to start is now. He added that because the Manager knows where water is needed the most and the potential area of development of available lands, the Commission should give the Manager their "blessings" to proceed with this project immediately.

Mr. Wong mentioned that one of the comments he has had from people regarding this project is that they feel that there may be other alternatives for providing water to the area which may not be as costly as the proposed project. He then suggested that the Department obtain the services of a public relations firm to tell the full story of this project in a professional and informative manner.

Mr. Hohu stated that Mr. Wong's suggestion of a public relations firm is a good idea and that a public meeting is a must to allow people to express their ideas, opinions, and alternatives.

The Manager said that he had thought about a public relations firm, also, and that he will present follow-up reports on this proposed project at future meetings.

ANNOUNCEMENTS:

Next Meeting: The Commission will meet on the third Tuesday in December, the 16th, at 10:00 a.m. in Hilo.

ADJOURNMENT:

There being no further business, Mr. Hohu moved for adjournment; seconded by Mr. Hart and carried. The meeting adjourned at 11:40 a.m.

wendy takehara
Secretary-Administrative Assistant