State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Mar 6, 1943

Well No. KS-9
Contractor PCV

DESCRIPTION OF ACTIVITIES

At 8:00 AM, Changed out 3" Joe Valve And Put on Lubricator
Installed Lubricator at 9:00 AM. At 9:10 AM, Started Opening.
Massed Water To Run 7" Joggles - No Trace of Hgs. Pumped
Water All Night Through 3" Joe Valve.

At 10:15 AM, Out of Hole With Tool - Weight Indicator Shows Positive
Here, Tool - Nippled Down Lubricator. Mi. Felt. Ran To Bath At 10:37 (To 4124)
At 11:20 AM, Back on With Lubricator To Make Second Run At 11:43. When Getting
on Bottom, Cut Hanging - Possibility of Fracture. Weight Indicator Shows Good Weight.
Figuring Of Line Of Falls - Came Out Slowly. Began Wire Into Lubricator -
Nippled Down Lubricator - Got On No Felt. Snatcher Not Snapped - Might
Have Been On Felt. Pulling 100 K. Ever. Engineers Will Meet To Discuss -
At 2:30 PM, Well Secured. Pumping Water At 300 PS - Wellhead Pressure
257 PS.

After Various Discussions Made For No More Running And Use
3½" Oiling Shakes To Be Inserted With A 6½" Tool Passing Through
Will Proceed to See A Plug in the 3½" Coming As Per
Appraisal Proposal For Work Ever.

Weather Rainy
Well No. 165. 9
Contractor P.F.

DESCRIPTION OF ACTIVITIES

At 5:45 A.M. Well Hand Mixed - 275 P.S.I. - Pumping Water

At 7/8 A.M. Working on Lubricator to Cool - (Warding Lubricator to P'll) - Teak Water Away - 2000 P.S.I.

At 2:30 P.M. Started taking off 2" Valve and Drilling by Lubricator

At 4:30 P.M. Lubricator fixed and marker valve open Reason is leak

At 6:30 P.M. Out of Job with Job - Marker Valve Closed

At 7:00 P.M. Lubricator Off and 3" Valve Back on - No Work Plans to Pump Water Through 3" 1 Way Valve

At 7:45 P.M. Well Secured - Pumping Water at 1/2 Rate. Wellman Pressure 240 P.S.I. Will Continue Operating Tomorrow Morning

Weather Rainy

Submitted by [Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Mar 9, 1952

Well No. 1659  Contractor Peo

DESCRIPTIO~ OF ACTIVITIES

At 11:25 AM, Well Shut In - Wellhead Pressure 275 PSI. Pumping Water at ¾ RPM - Total

Pumping Rate at 1460 GPH. At Repair 11:30 AM.

Received OK from Rep. to Start Replacing O-ring Suction

Operational. At 3:46 PM, Stopped Operational Due to

No Test on Lubricator. Repair Work Necessary -

Will Start Again Tomorrow Morning.

Weather Rainy

Submitted by Roy Hah
DAILY REPORT

MAY 3, 1993

Well No. 14-9

Contractor 

---

DESCRIPTION OF ACTIVITIES

Last night, started pumping water at ½ rpm to kill and cool well in preparation to start fishing Feb.

Writing on DNR approval to start operation.

At 5:05 AM, wellhead pressure 580 PSI. Total water pumped - 375 Gals.

At 5:25 AM, wellhead pressure 460 PSI. Total water pumped - 500 Gals.

At 10:52 AM, wellhead pressure 400 PSI. Total water pumped - 550 Gals.

At 1:55 PM, wellhead pressure 300 PSI. Total water pumped - 732 Gals.

Weather __________

Submitted by _______________
Well No.  
Contractor  

DESCRIPTION OF ACTIVITIES

At 1:35 a.m. Well Stop Ev.  Wellhead Pressure  
1360 psi. Planning to Test For Cost And Tommorn.  
Will Run Central Tool to Check Integrity Of 5 1/2 Casings.  
If casing Good, Will Change Plans And Back Up 1 1/2"  
Casing With Outer Sleeve - For Shad of Complete Change  
Of Casings And Wellhead.  

Weather  

Submitted by
DAILY REPORT

Mar 1, 1943

Well No. 145-9

Contractor

DESCRIPTION OF ACTIVITIES

At 11:00 AM Will Shit In- Well Head Partially 1300 ft.

Towed 473 Auger Cables on Top Plunge- And Has Round

Crown- Spung Core- Stay Down 14 KVs- And Changed out 3' Top

Wore Upper And Upper Plunge- Will Secure Shit In

Plan To Try To Fish Tool Before Proceeding With

Any Other Operation.

Weather

Submitted by

[Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Feb 28, 1953

Well No. 125-9

Contractor

DESCRIPTION OF ACTIVITIES

Lost hole with Tricone Type Tool with the following Logs After

Pumping Chisler Water Sweep

100' - 107.97" D " 500' - 104.08' D

200' - 117.46' D 600' - 130.26' D

300' - 106.17' D 700' - 344.50' D

400' - 104.55' D 725' - 314.00' D

Pulling out of hole to change out Tool - Running Raw Luffinor Luffinor

All Chisler 1/4" Bed 1/4" - Heavy Concentration on Fire. But No

Billings at Perimeter - All Asbestos Material.

After changing out Tool, Water Back for 30 and Stopped at Approx 200. Took a

Changing out Luffinor. Little Stressed to come out of Luffinor until the Dead

Minutes. All Line out of Hole. And No Tool 2" Work Valve was closed. But

Did not help. Then did Shut Valve. Approx 210 minutes after release

Could be stopped. No 1/4" Bed 1/4" on Leaking. Having Perimeter. Having Binding at

8.099 PPM

Weeds Spun. - After 8 1/4" PPM. No Leaking after 75' and Have Average 1/4" 5/8" 1/2"

Same Concentration 30" in Air. No 1/4" on Leaking. But no Perimeter. - Too

Leaking. Tool was Nothing. Not Enough Weight - Dr. Tool was Cut on Bottom.

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

April 8, 1955

Well No. 125-9

Contractor

DESCRIPTION OF ACTIVITIES

Mechanical Contractor: Hoisting - 370 Finalising -

NISTROSE Pannotia for the wellhead at 1900 P.S.E.

Hoisting Station - Looks Like April 16, 1955 Day

of Clement F. Mau -

Weather: Clear

Submitted by: [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

April 7, 1993

Well No. 145-9

Contractor P.C. O.

DESCRIPTION OF ACTIVITIES

Mechanical Contractor Hooking up Pump Wiring

To Well House To Hydrant Test

Weather Good

Submitted by
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

April 6, 1953

Well No. 125-9          Contractor P.C.O.

________________________________________

DESCRIPTION OF ACTIVITIES

Came Rigging up Flow Test and Ammonia Job
Wellman Transport to Hook-up Mountain Craig.
Plans to Run Clement Flow on Thursday

April 15, 1953

Weather Cloudy

Submitted by __________
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAG. ENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

APRIL 5, 1982

Well No. 166-9 Contractor Pau

DESCRIPTION OF ACTIVITIES

Millin to a depth of 455.1 - Note cut made -

On bottom load equipment has at the shut-in -

HIS 35 FR - On Sulfur Water head Volume - Monitor Elk -

On location - Gas dissipated quickly - No Troubles -

Shut in well - Am Pm Pumping water at 2 RIM. Wind -

Wellhead pressure at 230 PSI - Despatched well -

Go with manifest from Rig down hydraulic lift -

Job complete - Turn wind over to Production -

Weather - Good

Submitted by Eric Carlson
April 2, 1983

Well No. 14-9

Contractor

DESCRIPTION OF ACTIVITIES

TRAPPING IN WITH CONCAVE MILL AT 60 MM
ON LOST SECTION OF LOST TOOL. PUMPING AT 1/2 BAR
OF WATER WITH WELLHEAD PRESSURE AT 252 PSI.

Weather Good

Submitted by [Signature]
Well No. 165-9  Contractor Yeo

DESCRIPTION OF ACTIVITIES

Cross 40' of well out of hole - 10' of Tar. 15'' of tool in hole - Pumping water at 3/4.  Fill wellhead pressure at 20" of mercury

P[rogress over time to, 1.00. Mill pump to C.M.D. up bottom of tool in hole.

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

March 31, 1953

Well No. 125-9 Contractor PEO


DESCRIPTION OF ACTIVITIES

Prepared out of Hole and Picked up 100 ft. last night
Excavated 10 ft. for Center Tool - Broken up at 4590' (68' from bottom) - Cut like the Lower Completion Plug -
Jammed Center and Got to 4407' - Plug Moving -
Will Keep on Pumping to Get to Bottom - Drawing
The Night Jammed Center at 200' and Well Head Pressure at 414 psi

Weather [Blank]

Submitted by [Signature]
DAILY REPORT

March 30, 1983

Well No. 125-7

Contractor KWW

DESCRIPTION OF ACTIVITIES

Run in with 8½ ft. rod to Top of Liner string at 304.5. Then pulled out of hole to pick-up several tools to go down Canyon Rod or Bitter. Well head pressure at 400 psi with water being pumped in at 2 gpm.

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

March 29, 1985

Well No. 165-5

Contractor P.O.

DESCRIPTION OF ACTIVITIES

Cleaning out bottom of 531' holding 1200 psig back pressure.

On rigging - Affixed change out of pipe ram - Pressure up to 1400 psig - Well took 6' to flow over - Pressure down off to 600 psig over 30 minutes. Trapped 19 times.

D) New pipe - No indication of weight - Tracked to pressure up on well at 2:30 pm at 1500 psig plug.

Lease on well back - Will chase plug to line at 3074 - To break up - Push assembly to while at 2:20 pm

Pressure down to 500 psi - and dropping

Weather Good

Submitted by
March 28, 1955

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Well No. K5-9  Contractor  Pw

DESCRIPTION OF ACTIVITIES

At 13:00 Noon Cleaning out Chisil  at approx
410'  No pressure or temperature as yet

Using Sugar - Check or hold back pressure or
400 psi - On next Dress of Drill  Pump will Start

Holding 1000 psi back pressure.

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

March 27, 1953

Well No. K5-9

Contractor P60

DESCRIPTION OF ACTIVITIES

Run Multi-ram (20) centering tool inside of 9½" casing

To 796 - Run Two (2) Runs - Preliminary shows casing,

To be dug good shape - Well starts cleaning out

Bottom cement plug

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

March 25, 1953

Well No. 125-9

Contractor

DESCRIPTION OF ACTIVITIES

Crimp Cap, Ram into hill, 43\& X 4 1/2 x 3, 150 ft. B.H.\

Insert Top of Grout Plug at 126. KBN. Amp Starter.

Cleaning unit 4400 cement.

Weather Crow

Submitted by

[Signature]
DAILY REPORT

March 24, 1953

Well No. 12 - 9
Contractor PUC

DESCRIPTION OF ACTIVITIES

Crews rigging up hydraulic unit - Pressure Test

Bole stack Pressure down to 2000 psi and
15000 psi 1000 psi. Well Oil. Will start cleaning
operation in the morning.

Weather (Cloudy)

Submitted by [Signature]
Well No. 125-9       Contractor PaV

March 23, 1983

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Raising up hydraulic limit. Most likely to be ready to start sometime tomorrow - will hand.

Weather Cloudy

Submitted by [signature]
Well No. 1659  Contractor  POO

DESCRIPTION OF ACTIVITIES

During the week of Instillation and Packer Setting For Annunciation between 5° 25' and 1°35' Crews Picking up Hydraulics Work over Units with Water Pressure CQ-1580

Weather Cloudy

Submitted by
DAILY REPORT

March 15, 1953

Well No. K5-9

Contractor

DESCRIPTION OF ACTIVITIES

Well Screen - Well Head Pressure - 0.055 -
Installing Filter - Operation between 13 3/4 and 9 7/8 opening.

Weather Good

Submitted by [Signature]
DAILY REPORT

Mar. 18, 1953

Well No. 15-9

Contractor

DESCRIPTION OF ACTIVITIES

Well Screen -Livelihood Pressure - 0 PSF

Weather Good

Submitted by [Signature]
Well No. K9-9 WO Contractor PGU

DESCRIPTION OF ACTIVITIES

Tested expansion space and master valve with nitrogen to 3500 psi, held for 30 min. - Test good. Annular space between 9 5/8" and 13 3/8" casing tested with nitrogen at 1000 psi, for 30 min. Test good. Nipped up 3" valve to expansion space - will scan

Weather rain

Submitted by J. Jones
MARCH 16, 1993

Well No. 1K-09 Contractor PGU

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P.O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

DESCRIPTION OF ACTIVITIES

Crew working on injecting packing material into expansion space. Expansion space nipped up. Crew nipping up master valve on expansion space. Then torquing nuts on master valve. Crew nipping up 3" valve on top of master valve. 3/15/93

Well head well be tested using nitrogen after assembled.

Infilled packing material to 3500 psig. With 3500 psig

to test. Pressure held

Weather Good

Submitted by

[Signature]
Well No.  K5-9  Contractor  PGV

DESCRIPTION OF ACTIVITIES

Welded on 7/3/88
Installing expansion space - packing  welding on 95/6" bit guide, bolting up expansion
spool. Later will nipple up master valve and
balance of well head tree.

Also, when opening up well this morning,
no pressure and no traces of H2S noted.

Weather  good

Submitted by  __________
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Well No. /2-5

Contractor

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DESCRIPTION OF ACTIVITIES

Starting Nippling Down Wellhead Equipment at 6:30 a.m. - 8:15 a.m.

Got Expansion Spool off of Well Head - No Hy. - 5 9/16" Long

in Expansion Spool from Initial Insulator (Inserted 7"

Now 14" - Inspected 5 9/16" casing inside of Spool. Good Shape

Working on Wellhead. Cement around 5 9/16" casing - Good

Hyd. - At 4:00 p.m. Wellhead Off of 13 7/8" At 9:00 p.m.

Inspected 5 9/16" casing - Good Shape - At 7:00 p.m. Screwed off

13 7/8" Sub - Threw in Collet. Good Shape - Screwed New

Wellhead on - Tore 9" casing to 11,000 ft - Nippled up

Expansion Spool and Pipe. Blimp Places - At 8:10 p.m.

Well Secure. Tomorrow will complete Packing Expansion

Spool, and Nipple up Mason Valve and Side Valve

Looking - Ready for Work over Rig.

Weather Good

Submitted by [Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Mar. 12, 1963

Well No. 125-9

Contractor

DESCRIPTION OF ACTIVITIES

MINISTER WELLS - OVER NIGHT. NO BUILD UP. WHAT SO
EVER. SUGAR CANE NAPPING POINT 400' EQUIPMENT AND
SIDE GEING LINES AND PIPING WITH BLIND PLUGS
AND BLIND PLUGS - WORKING ON WELLHEAD TO
APPEAR - POSSIBLY TO ARRIVE TOMORROW AFTERNOON -
MOST PROBABLY HE HER? A START WORK ON ON
SUNDAY 3-14-63

Weather (sunny)

Submitted by [Signature]
DAILY REPORT

Date: 11, 19--

Well No. 12-9 Contractor: PHOENICS

DESCRIPTION OF ACTIVITIES

Well plugged. Mineral (breezing at wellhead.

No build up over night. Waiting on wellhead

Equipment to arrive before proceeding on well work. Well pressure first day more lift power

Put equipment.

Weather: Good

Submitted by: [Signature]
Daily Report

March 13, 1953

Well No. \( K \cdot g \)  
Contractor \( P \& J \)

---

Description of Activities

- AH 11'95 Well Zone Pressure - Expansion Solved
- Annular AH 250 PSIG - To Be Bleed Off in Choke
- Bore - Run Lugar Tone to Top of Last Cement Plug
- Make Pop of Plug AH 1'3" CB

---

Weather Rain

Submitted by Erie Fitch
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Mar. 10, 1993

Well No. 125-7

Contractor P&U

DESCRIPTION OF ACTIVITIES

Cement Slit R-280 Vertical at 2970’ EL and Sand Packered with
11-5 Cubic Yards of Sand - Then Pumped 23 Cubic Yards of Cement -
(Hawaii Cement W/ 40% SSA, 15% C3A3, and 5% C4AF)
Regimented Iron & Clay at 120’ CC (Peg 150) Wasting in
Cement and Air in Position in Well Head

Weather Rainy

Submitted by
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 323
Honolulu, Hawaii 96809

DAILY REPORT

Mo. 9, 1953

Well No. 106-5

Contractor 

DESCRIPTION OF ACTIVITIES

Flushed Top一头用清道水冲洗井头

New Reservoir/Inst Suction Gate No. "N" Ok

Hydrant Function Tested - OK

One Amt. From Inside of 9 1/2" Casing

To Run Easy Previous (Casing OK) - Then Stand Plug.

Then Pump & Cement Plug on Top of Stand Plug.

Put Injection Top of First Plug at Job From Screen

No As Gas While Trapping For - Over Night, Well Held

Pressure went up 100 Ft from 350 psi - Small Leak

Weather Rain

Submitted by 

[Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Mar 8, 1983

Well No. 165

Contractor P&V

DESCRIPTION OF ACTIVITIES

On Sunday Pumped Cement Plug And Build Pressure on Plug. After Waiting on Cement to Set, Performed Pressure Test. At 2500 psi, Strapped Line, Pressure checked. Suppression Spot - 06 - Plug Linking - Pulling and Pressure Lubricator And Work Line To Run Up Hill To Top Of Plug - Passed Top of Plug at 2:00 From Surface. Pump To Linking Plug - Well Set EZ-1 Immer - They Peek Llith Sand And Set Amosol Cement Plug On Top And Monitor For Any Leak.

Weather Dusty

Submitted by Eric
dda
DAILY REPORT

Feb 26, 1988

Well No. 165-9
Contractor P&V

DESCRIPTION OF ACTIVITIES

At 2:00 P.M. Well Start In. Well Head
Pressure: 1400 PSIG.

Weather Good

Submitted by Eric Cook
### DAILY REPORT

**Date:** Jan 25, 1985

<table>
<thead>
<tr>
<th>Well No.</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>K5-9</td>
<td>160</td>
</tr>
</tbody>
</table>

#### DESCRIPTION OF ACTIVITIES

- **Well No.:** K5-9
- **Well Status:** Drilling
- **Missile:** 1380 ft.

**Weather:** Cloudy

Submitted by [Signature]

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State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P.O. Box 373  
Honolulu, Hawaii 96809
Well No. 120-9

Contractor

DESCRIPTION OF ACTIVITIES

At 10:30 AM. [Activity 1]

At 1:30 PM. [Activity 2]

Weather: Good
Well No. 165-9

Contractor P.V.

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P.O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Fes 23, 1983

Well No. 165-9

Contractor P.V.

DESCRIPTION OF ACTIVITIES

At 2:00 P.M. Well Shtr En - Wellhead Pressurr

1380 Fq.

Weather Good

Submitted by
DAILY REPORT

Feb 27, 1985

Well No. 165-9

Contractor

DESCRIPTION OF ACTIVITIES

At 11:15 a.m. will start re-work well head pressure 1360 psi.

Submitted by Eric Ford
02/17/93  KS-09 WORKOVER

1. Notify DLNR and other regulatory agencies, as necessary of intent to perform work over.

2. Have cellar sniffed and secured prior to entry.
   2.1. Tie Howco into 3"-5M side valve below master valve and test lines.
   2.2. Pressure up Howco lines to balance pressure inside of wellbore and open 3" valve.
   2.3. Pump 10 barrels of caustic water mixed at 10% into wellbore and close valve.

3. Rig up Flo-Log's 10"-5M lubricator and test to 2500 psi.
   3.1. Run minimum inside diameter caliper tool along with temperature tool.

4. Tie Howco into 3"-5M side valve below master valve and test lines.
   4.1. Be sure master valve is closed.
   4.2. Pressure up on Howco lines to balance pressure inside of wellbore and open 3" valve.

5. Pump 8 barrels of caustic water ahead at 1 barrel per minute.
   5.1. Pump 8 barrels of hi-vis mud at 1 barrel per minute.
   5.2. Pump 82 cubic feet of Hawaiian cement premixed with 40% SSA-1 plus 0.65% CFR-3 and 3% calcium chloride.
   5.3. Displace cement with 22 barrels of water.
   5.4. Shut in and monitor pressure for 12 hours.

6. Bleed off pressure and check for flow.
   6.1. Pressure test plug to 2500 psi.
   6.2. Bleed off and check for flow.

7. Run feeler gage on wire line and tag top of cement.

8. Nipple up crossover flange and 12"-1500 series double gate with 3-1/2" pipe rams and function test.

9. Rig up crane and run 3-1/2" drill pipe to top of cement plug.
   (theoretically at 300')

10. Pump a balanced plug consisting of 41 cubic feet of Hawaiian cement premixed with 40% SSA-1 plus 0.65% CFR-3 and 3% calcium chloride.
    10.1. POH with 3-1/2" drill pipe and WOC 12 hours.
    10.2. Tag top of cement with feeler gage on wire line.
            (theoretically at 200')

11. If possible and equipment is available, rig up and blow off 100 linear feet of water from 9-5/8" casing to sump thru 2" or 3" line.

12. Strip off well head equipment.
13. Excavate around 20" casing at bottom of cellar and cut off 20" casing.
   13.2. Locate a spot on 13-3/8" casing above collar where diameters are at proper specifications and cut. Split and remove 13-3/8" casing above cut.
   13.3. Hydro blast cement from 9-5/8" casing in preparation for well head work.

14. Hot-Head weld 13-5/8"-5M well head to 13-3/8", 68# K-55 casing that has been precut and prepared for "Pen Weld".
   14.1. Use rose buds and heat tabs to preheat 13-3/8" casing prior to "Pen Weld".
   14.2. "Pen Weld" 13-3/8" wellhead joint to 13-3/8" stub and heat treat for stress relief to 800F using heat tabs. Be sure slip on sleeve is in place prior to "Pen Weld".
   14.3. Slip on sleeve to be welded across "Pen Weld".
   14.4. Have 20" casing precut and slipped on prior to "Pen Weld" of 13-3/8" casing stub.

   15.1. Be sure no water enters annulus.
   15.2. Install centering ring.

16. Install expansion spool packing.
   16.2. Nipple up expansion spool with side valves.
   16.3. Install 10"-5M master valve.
   16.4. Test expansion spool.
   16.5. Weld on 20" casing as protective outer lining. The pressure integrity of the 20" casing should be preserved.
   16.7. Seal weld centering ring screws in casing head.
   16.8. Circulate water through casing head valves to flush out debris.

17. Nipple up BOPE and CUDD Hydraulic Snubbing Unit.

18. Notify DLNR in time to witness all pressure tests.

19. Rig up circulating tank, Howco V-12 and power swivel.

20. Make up 8-1/2" bit and drilling assembly.
   20.1. Use hi-temp floats and profile nipples.

21. RIH to top of cement.

22. Clean out cement through panic line.
    22.1. Clean out last 50' of cement in snub position and circulating through choke lines.
23. Snub out of hole and close master valve. Secure well.

24. Rig up Barton recorder and monitor pressures.

25. Tear out CUDD and BOPE.

26. Install kill line spool, second 10"-1500 series top master valve and flow cross with 10" X 3"-5M adaptor complete with 3"-1500 series swab valve.

27. Release well to O&M.
02/16/93  PLAN "B"

Steps 1 through 11 are the same as plan "A"

12. Excavate around 20" casing at bottom of cellar and cut off 20" casing.
   12.2. Cut off well head.

13. Rig up high torque tongs and back off 13-3/8" exposed joint.
   13.1. Inspect collar and threads.

14. Cut the pin end off of one joint 13-3/8" 68# K-55 casing measured to fit, including well head.
   14.1. Hot head weld 13-3/8" 5M well head onto 68# cut off and test weld.

15. Screw in 13-3/8" 68# well head joint into exposed seal lock collar to proper torque specifications.

   16.1. Be sure no water enters annulus.
   16.2. Install centering ring.

17. Install expansion spool packing.
   17.2. Nipple up expansion spool with side valves.
   17.3. Install 10"-5M master valve.
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   27.1. Secure cellar.

28. Release well to O & M.

Plan "C"

12.3. Attempt to unscrew collar and replace with new collar.

12.4. If threads are bad after unscrewing collar then cut off pin.

12.5. Use plan "A" with "Pen Weld" and sleeve technique.

Plan "D"

1. Rig up to run 7" tie-back, and install 9-5/8"-1500 series well head.

2. See attached program.
January 19, 1993

MEMORANDUM

TO: The Honorable Mufi Hannemann
    The Honorable John C. Lewin
    The Honorable William Paty
    Dr. Joshua Agsalud
    Bruce Anderson, Deputy Director, DCH
    Tak Yoshihara, Deputy Director, DBEDT
    Jack Keppeler, Deputy Director, DLNR
    Dean Nakano, Geothermal Project Office, Manager, DBEDT

FROM: Michelle Wong-Wilson, Coordinator

SUBJECT: GEOThERMAL UPDATE - 1/18/93

PGV ACTIVITIES - At KS-9, the Parker drilling crew stopped drilling on Friday at the 4180-foot level. Casing and cement work took place over the weekend. Monday morning (yesterday), the casing crew completed the 7-inch casing work down to approximately 4180 feet. The casing-cement work was to be allowed to set until midnight or so (last night), then would be hydrotreated. Provided the seal was satisfactory, the last drilling stage can begin. It is estimated that the resource is another 300 to 400 feet down and can be reached within two or three days of drilling.

DOH ACTIVITIES - Noise and air monitoring continued. Noise complaints were registered at 4:47 p.m. Friday (Martinovich residence in Lanipuna Gardens) and at 6:45 a.m. on Saturday (Petricci residence in Leilani Estates). Sound levels of 32-33 dba were detected following the latter complaint. Additionally, two air complaints were received Sunday evening—one from the Petricci residence ("smelled H2S") at 8:39 p.m., and one from the Olson residence on Hinalo St. ("smelled fumes earlier this evening"). No violations reported.
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Feb 21, 1953

Well No. K5-7

Contractor

DESCRIPTION OF ACTIVITIES

At 8:00 AM, Well Shut In. Wellhead Pressure, 1340 PSIG

Weather

Submitted by
DAILY REPORT

Feb 19, 1983

Well No. 1159

Contractor P.W.

DESCRIPTION OF ACTIVITIES

At 2:53 PM, Well Slotted - Wellhead Pressure 13.20 CSt.

Weather

Submitted by
Well No. 165-9  

Contractor PCU  

---  

DESCRIPTION OF ACTIVITIES  

At 12:00 Noon Well Shut-In - Wellhead Pressure  

1320 - 145  

Weather Good  

Submitted by
DAILY REPORT

Date: 11-17-53

Well No. 165-9

Contractor PHC

DESCRIPTION OF ACTIVITIES

At 2:30 P.M. well shut in - Wellhead still in.

1300 P.M.

Weather Good

Submitted by

[Signature]

[Date]
Well No.  K5-

Contractor  RLC

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Feb 11, 1993

Well No.  K5-

Contractor  RLC

DESCRIPTION OF ACTIVITIES

At 11:30 AM. Well SHUT in - WANTED PRESSURE.

1250 psi. - Pressure Initial WARM UP of well on Monday -

The % Relief Line From the Annulus of 9.5 to 5.75 (256

Expansion Shop). Aer Pressure And Water Cut Reported for 13/3.

Pressure Build up Into The Casing Expanded - The Casing Was

Calculated And Dimensions Sent To Manufacturer To Recalculate

Strength (yield) - No problem - for Casing Rated At 750 psi YIELD

(average K55 at 5500 psi yield) And estimated 10% Lead would

Still Be Greater After 500 psi. Plans Made To Re-work Well

to Replace Expanded Casing (with wood fillers). Also

Plans Are Not to Reinforce Well.

Weather  (warm)

Submitted by  Eric Taka
DAILY REPORT

Feb 10, 19 83

Well No. 15-5

Contractor

DESCRIPTION OF ACTIVITIES

2:30 P.M. WENT TO WAIHALA TREATMENT PLANT

6:30 P.M. CAME BACK TO PUNA, PERFORMED WORK ON THE WAIHALA TREATMENT PLANT

Weather Partly Dry
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Date: 9-5-1953

Well No. 168-9

Contractor RCO

DESCRIPTION OF ACTIVITIES

At 5:05 AM, Well Site Dr. Well Sampled 1,200 P.S.I.

Well not Resume: Challenging Flow Poor - Wasting on Clean

From Drt. Analysis Scheduled at 4:00 PM. At Cleanout Drill

Silhouette Pumps from Pump C rete into the wellbore

Also noted three of the 7" valve to approach the

Water in the wellbore. (The initial water is due to the

Steam) to produce has gone as for the Incident

2:00 afternoon

Weather: Good

Submitted by

Signature:

Eric
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809  

DAILY REPORT  

Fri 19 63  

Well No. 165-7  
Contractor PAC  

DESCRIPTION OF ACTIVITIES  

At 7:45 A.M. WELL STARTED - WELLHEAD PRESSURE 1300 PS. ALL KOI LINES AND ABATEMENT LINES, HOUSED UP, START WASHING UP EQUIPMENT - AT 5:00 AM THE IMPACT OPERATING, THE WATER IN THE WELCHER CAME OUT AND THE CONTRACTOR KEPT IT AT ATMOSPHERIC PRESSURE. AMOUNT OF WATER WAS RELEASED.  NO MEASUREMENT WANTED ON HAMPTON GRAVITY DRAIN. LOW PRESSURE AT START, WAS 1590 PS.  

Pumping Rates 10000 KPH. BIRD WELLHEAD GEAR 1 1/2. AFTER 11:00 AM PUMPING BIRD WELLHEAD BACK AT ORAGINIAL HEAD. ON SATURDAY  

Rate for Scouring, Well Drilled Tool - Telemeter 31-35 PS.  

At 4:46 696' FROM 1200' WATERHEAD, PRESSURE ENCRANDES  

WATER COLUMN TO 1800' THEN 2 PUMP ABOVE 1800' INCREASED  

Actual Core 740' 45'. ATTACHED IS GRADE FORM  

Rate for Scouring  

At 4:00 AM WELL STARTED - WELLHEAD PRESSURE 1700 PS.  

CRANE INSTALLED PIPE OF AVALON TO AND 75' CLOSING  

Weather GOOD  

Submitted by
PUNA GEOTHERMAL VENTURE
KS–9 TEMPERATURE AND PRESSURE PROFILES

PRESSURE (PSIG)

DEPTH (ft) KB

TEMPERATURE (deg.F)

FIGURE 2
DAILY REPORT

Feb 5, 19 53

Well No. 1259  Contractor  P C W

DESCRIPTION OF ACTIVITIES

At 11:00 AM, Wells shut down, well pressure
130 psi. Crew working on new line
In preparation for cleaning on Monday 2-8-53

Weather  Cloudy

Submitted by  [Signature]
Well No. 165-9  Contractor

DESCRIPTION OF ACTIVITIES

At 2:15 P.M. well shut in wellhead pressure.

At 3:30 P.M. crew replacing expansion pad.

Working on flow line.

Weather Good

Submitted by [Signature]
Well No. 165-9  Contractor  760

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Feb 3, 1973

Well No. 165-9  Contractor  760

DESCRIPTION OF ACTIVITIES

At 12:30 P.M. Well Shut in - Weather Pressure
1300 ft. - Plans Run to Run P & T String on Saturday 2-6-73. They Did Receive Permit
Run NOW - For Cleanout Plus - THIS MORNING
Plans for Cleanout will be for Monday 2-8-73

Weather Cloudy

Submitted by [Signature]
Well No.  L8 - 9  Contractor  FEU

DESCRIPTION OF ACTIVITIES

At 12:00 noon Well Start for Core and Pump

12:30 P.M. Crew working on Flow Line

Weather  (good)
Well No. K5-9	Contractor P
c

DESCRIPTION OF ACTIVITIES

At 11:30 AM, WELL START IN - WELLHEAD PRESSURE.  
12:30 PM - MECHANICAL CONTRACTOR WORKING ON PUMP

Weather CLOUDY

Submitted by Eric Taki
**PGV WELL RECORD**

<table>
<thead>
<tr>
<th>LEASE</th>
<th>Kans. State (KS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELL #</td>
<td>91</td>
</tr>
<tr>
<td>FIELD</td>
<td>Kans. Field</td>
</tr>
<tr>
<td>LOCATION</td>
<td>SWK 1-4-21-02</td>
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<tr>
<td>B.H.L.</td>
<td>6,865 ft</td>
</tr>
<tr>
<td>DEPTH</td>
<td>TD 4,564</td>
</tr>
<tr>
<td>RIG #</td>
<td>63</td>
</tr>
<tr>
<td>CONTRACTOR</td>
<td>Penna. Oil Co.</td>
</tr>
<tr>
<td>ELEVATION</td>
<td>GROUND</td>
</tr>
</tbody>
</table>

- **Type Well:** Expl. Dev. X
- **Obsv. Stm.:** Inj.
- **HOT WTR:** Dry Hole

| APPROVED | COMPANY SUPERVISOR | David Weisgerber |

---

**Casing Record**

<table>
<thead>
<tr>
<th>SIZE</th>
<th>WEIGHT</th>
<th>GRADE</th>
<th>THREAD</th>
<th>TOP</th>
<th>BOTTOM</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>3-1/2</td>
<td>15</td>
<td>L-80</td>
<td>Long</td>
<td>3-3/4</td>
<td>12-5/8</td>
<td><strong>Exempt</strong></td>
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<tr>
<td>4-1/2</td>
<td>20</td>
<td>L-80</td>
<td>Short</td>
<td>4-3/4</td>
<td>13-3/4</td>
<td><strong>Exempt</strong></td>
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**Well Head Assembly**

<table>
<thead>
<tr>
<th>MAKE</th>
<th>TYPE</th>
<th>SERIAL</th>
<th>DESCRIPTION</th>
<th>SIZE</th>
<th>I.D.</th>
<th>LENGTH</th>
<th>PRESS. RATING</th>
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</thead>
<tbody>
<tr>
<td>Foster</td>
<td>500</td>
<td>1966</td>
<td>2 side outlet</td>
<td>12-3/4 x 13-3/4</td>
<td>12-3/4</td>
<td>1-47</td>
<td>5,000 psi</td>
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**Valves**

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<th>TYPE</th>
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<th>SIZE &amp; I.D.</th>
<th>PRESS RATING</th>
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</thead>
<tbody>
<tr>
<td>Foster</td>
<td>12 x 1-1/2</td>
<td>6,000</td>
<td>3-1/2 x 10-1/8</td>
<td>5,000 psi</td>
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**Perforations**

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<tr>
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<th>FROM</th>
<th>TO</th>
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**Test Data**

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<tr>
<th>TEST DATE</th>
<th>WHP</th>
<th>TEMP</th>
<th>FLOW RATE</th>
</tr>
</thead>
</table>

---

**Remarks:**
LEASE: KAPOHO STATE (KS-9)  SPUD DATE: 12/6/92  COMP DATE: 
WELL #: KS-9  CONTRACTOR: PARKER DRILG CO. 
FIELD: KAPOHO PUNA  RIG #: 231 
LOCATION: 8957.46 N & 9771.73 E  ELEVATION: GROUND 619
  BENCHMARK KAPOHO, PUNA  K.B. TO GROUND 25'
  DIST. HI, COUNTY HI  K.B. TO CSG. HEAD 31.20

B.H.L.  66.85' S & 659.18' E OF SURFACE LOCATION

TYPE WELL: EXPL.  DEV. XX

DEPTH: TD 4564'  TVD 4427'  ETD 4564'  OBSV  STM  XX  INJ

APPROVED: PAUL STROUD  COMPANY SUPERVISOR: CHUCK WARD
  D. WEISGERBER

CASING RECORD

SIZE   WEIGHT  GRADE  THREAD  TOP  BOTTOM  REMARKS
30"     94#      K-55   --     33'     101'    CEMENTED
20"     68#      K-55   BUTT  0       935     CEMENTED
133/4"  47#      C-90   SEAL LK 0       2005    CEMENTED
LNR  93/4"  94#      C-90   NEW VAN 1798 3225  CEMENTED
T-BK   9"       47#      C-90   NEW VAN 1798 1804  CEMENTED
  7"     29.9#    L-80   16 NEW VM/3024 4169  CEMENTED

14 BUTTRESS

WELL HEAD ASSEMBLY

CASING HEAD EXPANSION SPOOL HANGER SPOOL XO SPOOL

MAKE: FOSTER  FOSTER  N/A  N/A  N/A
TYPE: SOW  FLANGED
SERIAL #: W01672  W.D. 2062
DESCRIPTION: 2 SD OUTLET 2 SIDE OUTLETS
SIZE: 133/4" X 133/4"  10"1500X133/4 5N
I.D.: 12"  MIN 10.92
LENGTH: 1.47  32k"
PRESS. RATING (PSI) 5000#  5000

VALUES

MASTER EXPANSION SPOOL CASING HEAD SWAB

MAKE: FOSTER  FOSTER  BARTON (4)
TYPE: D-SEAL  D-SEAL  EXT BONNET
SERIAL #: 6D0037  25777-25779  25782-25780
SIZE & I.D.: 10-1500  3"5000  3 1/16 5000
PRESS RATING (PSI) 5000 TEST 3600  5000

PERFORATIONS BLANK

PERFORATED LINER: FROM 6" TO OPEN HOLE 3024 TO 4169

PERFORATION DESIGN

TEST DATA:

TEST DATE  WHP  TEMP  FLOW RATE

REMARKS: N/A
ALL DEPTHS MEASURED FROM KB HEIGHT OF 25' ABOVE TOP OF CELLAR

- 42' HOLE
- 26' HOLE
- CEMENT
- 30' CONDUCTOR CEMENTED TO SURFACE
- 20' 9# 1 5/8 D&C CEMENTED 0-935'
- 20' CASING SHOE 935'
- 17-1/2' HOLE
- 13-3/8' 68# K-55 SEAL LOCK CEMENTED 0-2005'
- 9-5/8' TIE BACK HANGER TOP 1795'
- 13-3/8' CASING SHOE 2005'
- 9-5/8' 41# C-90 NEW VAM CEMENTED 0-3224' (TIED BACK)
- 12-1/4' HOLE
- 9-5/8' X 7' BUTTRESS MIDWAY DOUBLE SUP LGR HANGER SET AT 3024'
- 9-5/8' CASING SHOE 3224'
- 8-1/2' HOLE
- 7' 29# L-80 BT&C LINER 3024'-3569' + 7' 23# ALLOY NEW VAM X 7' BUTTRESS XOVER 3569-3571 + 7' 29# L-80 NEW VAM LINER 3571'-4169', CEMENTED 3024'-4169'
- 6' HOLE
- OPEN HOLE COMPLETION

PUNA GEOTHERMAL VENTURE
PRODUCTION WELL KS-9
CASING SCHEMATIC
AS COMPLETED 1/22/93

DATE 1/23/93
REV. 2
BY T.P.W. FILE: PDI/KS548LT.DWG FIGURE NO. 1
WELL COURSES:

ORIGINAL HOLE
4169' - 4564'
NO JUNK

SCHEMATIC DESCRIPTION

-101', 30" CONDUCTOR CEMENTED.

-935', 20" 94# K-55 BT & C CEMENTED

-1805', 9 5/8" 47# NEW VAM CASING STAB IN & CEMENTED TO SURFACE.

-2005', 13 3/8" 68# K-55 SEAL LOCK CEMENTED.

-3024' 9 5/8" X 7" BUTTRESS MIDWAY DOUBLE SLIP LINER HANGER SET AT 3024'

-3224', 9 5/8" 47# NEW VAM CEMENTED TO TOP OF HANGER AT 1798'

-4169', 7" 29# COMBINATION STRING OF BT&C LINER
3024' - 3569' + 7" 23# ALLOY NEW VAM X BUTTRESS X OVER 3569' - 3571 + 7" 29# L-80 NEW VAM LINER 3671' - 4169' AND CEMENTED TO 3024'

STEAM ENTRIES

4545' - 4564'

SIDE TRACKS

NONE

LOST CIRCULATION ZONES

SURF - 950'
4545'

MISCELLANEOUS

RIG: PARKER RIG #231

SURFACE: N8957.46' AND E 9771.72' BENCHMARK KOPOHO, PUNA DIST HI, COUNTY HI.
B.H.: 66.85' & 659.18' OF SURFACE LOCATION

<table>
<thead>
<tr>
<th>PGV</th>
<th>GROUND ELEVATION:</th>
<th>SPUD DATE:</th>
<th>T.M. DEPTH:</th>
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</thead>
<tbody>
<tr>
<td>KS-09 PRODUCER</td>
<td>618'</td>
<td>12/06/92</td>
<td>4564'</td>
</tr>
<tr>
<td>KELLY BUSHING:</td>
<td>25'</td>
<td>COMPLETION DATE:</td>
<td>01/25/93</td>
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<tr>
<td>TOTAL FOOTAGE:</td>
<td>4564'</td>
<td>RIG TEST:</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T.V. DEPTH:</td>
<td>4427'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>E.T. DEPTH:</td>
<td>4564'</td>
</tr>
</tbody>
</table>
Well No. 165-9          Contractor RV

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P.O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Jan 28, 1983

Well No.       Contractor

DESCRIPTION OF ACTIVITIES

At 11:30 AM Well Shirt Off - Wellhead Pressure -

1180 F.T. - Rig Mound Off -

Weather Open

Submitted by [Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Jan 27, 19__

Well No. KS-9

Contractor P00

DESCRIPTION OF ACTIVITIES

At 11:15 AM, well shut in, wellhead pressure: 1100 psi, stabulized. Crew rigged down to move to KS-10.

Weather Over

Submitted by [Signature]
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809

DAILY REPORT

Well No.  1E-7  
Contractor  PDU

DESCRIPTION OF ACTIVITIES

At 2:00 P.M. Wellhead Pressure - At 1100 PSI. With
Well shut-in. All innovation point to situation.

Line for 155-9 somewhat like a conventional well.

Mark demonstrated here to be area (PIT survey) to
Unplug crew plugging down by preparation
to move to 1E-10.

Weather  Good

Submitted by  [Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Jan 25, 1993

Well No. K5-9

Contractor PEO

DESCRIPTION OF ACTIVITIES

On 1-22-93 at 12:06 midnight stopped injecting water
Down 100 ft. and varied pressure starting building 50
570 psi - As of 7:00AM 1-24-93 well head pressure at
891 psi - At 12:05PM 1-25-93 well head pressure 1050 psi
Craw started 03 Rig down in preparation to move
Move to K5-10.

Weather Good

Submitted by: [Signature]
### Field Report

**Company:** Pruett Industries, Inc.

**Address:** 9215 Rosedale Highway, Bakersfield, California 93312

**Phone:** (805) 599-2768

**Field:** Kepha

**Well Name:** KS-9

**Date:** 1-14-93

---

**Casing:**

**Liner Description:**

**Perforation:**

**Tubing Detail:**

---

**Pump Size:**

**Gas Anchor:**

**Intake:**

---

**Element:**

**Serial No.:**

**Clock:**

**Turn:**

**Engage Stylus:**

**Disengage Stylus:**

**GSL Test Press.:**

**CGR Test Press.:**

**CGR CGD Press.:**

**Formation Gas WVP:**

**Pickup #:**

**Time On Bottom:**

**Max H:**

**Well Status:**

**Time Off Bottom:**

**Shut In:**

**On Production:**

---

**Temp**

<table>
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<tr>
<th>Depth</th>
<th>Press</th>
<th>Press</th>
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</thead>
<tbody>
<tr>
<td>1/800</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>1/700</td>
<td>130</td>
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<tr>
<td>2/000</td>
<td>160</td>
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<tr>
<td>2/500</td>
<td>161</td>
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<td>3/000</td>
<td>220</td>
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<td>3/100</td>
<td>240</td>
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<td>3/200</td>
<td>270</td>
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<tr>
<td>3/300</td>
<td>285</td>
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<tr>
<td>3/400</td>
<td>340</td>
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<tr>
<td>3/500</td>
<td>360</td>
<td></td>
</tr>
<tr>
<td>3/600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/800</td>
<td>368</td>
<td></td>
</tr>
</tbody>
</table>

**Comments:**

---

**Circulating Gas MWD:**

---

**Oil Dry Gravity %:**

---

**Bearing Size:**
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Date October 27, 1983

Well No. 165-9
Contractor Riv

DESCRIPTION OF ACTIVITIES

At 10:40 P.M. Last Night - At Depth of 4546' - Started Losing Return Circulation - Drilled to 4564' With No Return Circulation. At 10:57 P.M. - Turned Off Drill - With Well Still In Wellbore Pressure. Started Bailing At 11:27 P.M. Wellbore Pressure. Bailed To 1911 PSI. Turned On Pumps And Pressure Started Going The Other Way At 11:05 P.M. Pumping Water At 6.3 BPA. Pump Pressure At 2744 PSI - Wellbore Pressure - 240 PSI - Plans Are To Mix Mud - 11:00 P.M. - Pump Mud Down Hole To Get Well To Go On A Uniform Thin Trip Pipe Out Of The Hole. With Well On Vac. - Puff Out Of Mr. Mike To Displace Mud With Water In The Hole. Then (Intention Pumping Water For Several Days) Added Two Circulators - (Gary Scarry And Pat Scarry) Est. Res. Pressure 2710 PSI. Maximum Mud 9.2 PPG - Est. Tvd 4500' At 11:30 P.M. Out Of Hole With Mud Strong. Closer Screen Pier - Will Shift In. Will Start Drilling Every Hour. (Well When Stopping, Pipe Out Of Hole - Worker Cut Kneeling Down By Co. Gas. Gave Oxygen - Worker Dead)

Weather Green

Submitted by [Signature]
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

June 31, 1953

Well No. 165-9
Contractor

DESCRIPTION OF ACTIVITIES

As of 11:35 AM. Boring at a depth of 4452'. With 6' Bit and Full Boring Operation. Temperature 74° F. 100%.

Temperature - out: 122° F. 100% - Pump Pressure 1560 psi.

At 9:45 AM - Sunnine - 4295'. 24' by Nov. 1954 Temperature 44.5'. 100% Dry Air - 306° F Temp. - No Distillation Due to No Mobil College In The String. (Guns equipment due to arrive to find exact depression hole is needed)

 Mud Weight In - 10.0 + 8% - Mud Weight Out 10.15% (Soln.

Formation:

4700 - 4750' - 20% Vesicular 80% Amphibolite.
4750 - 4800' - 0-30 Amphibolite - 70-100 Porphyrile.
4850' - 4900' - 100% Porphyrile.
4900' - 4940' - 30-60 Amphibolite - 70-90 Porphyrile.

Weather: Cloudy

Submitted by: [Signature]
DAILY REPORT

Date: 20, 1993

Well No. 63-9  Contractor  Kalo

DESCRIPTION OF ACTIVITIES

As of 1:00 PM: Drilling 100' with 6" Bit. At

Depth of 424' with Full Jet in Circulation -

Rate 71/2 fps - Pumps at 100 psi - Pump Pressure -

1400 psi - Temperature In - 105°F - Temperature Out -

122°F - Very Slow Drilling - Slight Aborting -

Dry Type Rock

Weather: Good

Submitted by: Eric Beta
Well No. \(143\)  
Contractor \(P(V)\)  

**DESCRIPTION OF ACTIVITIES**

Pressure Test of 7" Liner Cap - Pressure up to 1100 psi. Lost 900 psi over 2 minutes - No

Test Pumps 10 psi to squeeze liner cap and re-test.

Weather Good

Submitted by [Signature]
### 7" 29.0 New Vam and Buttress

**Casing Detail**

<table>
<thead>
<tr>
<th>JT</th>
<th>Description</th>
<th>Length</th>
<th>Top</th>
<th>BTM</th>
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<tr>
<td></td>
<td>HOWCO float shoe</td>
<td>1.29/2.12</td>
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<td>HOWCO float collar</td>
<td>.83 &quot;</td>
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<td>New Vam L-80 29.0\(f)</td>
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Landed Below

| KB | #     | 3024.93 |

KB used 25.0
|    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |7  

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| 1) | 39.43 | 21) | 38.23 | 2) | 39.41 | 22) | 38.28 | 3) | 36.32 | 23) | 38.55 | 4) | 36.33 | 24) | 38.19 | 5) | 35.89 | 25) | 38.35 | 6) | 36.33 | 26) | 38.35 | 7) | 35.90 | 27) | 38.53 | 8) | 36.35 | 28) | 38.34 | 9) | 36.37 | 29) | 38.32 | 10) | 39.43 | 30) | 38.30 | 11) | 39.00 | 31) | 38.23 out | 12) | 39.43 | 32) | 38.18 " | 13) | 36.34 | 33) | 38.19 " | 14) | 36.37 | 34) | 38.33 " | 15) | 36.35 | 35) | 38.20 " | 16) | 36.37 | 595.62 | 36) | 38.42 " 765.43 Buttress | 17) | 38.14 | 229.55 1361.05 | 18) | 38.30 | 19) | 37.71 | 20) | 38.29 | 376.30 748.06 | 37) | 38.30 | 383.44 1131.50 |

Shoe & F.C. X-0 2.15
Liner & Hanger 8.25

Centralizers
1 cent. 10' up 1st Jt.
1 1st Collar
Jt 3-5-9-13-17-21-25-29
Well No. 159

Contractor AGV

DESCRIPTION OF ACTIVITIES

Pumped and Washed 1000 gals. of Cement at the
Length of the 7" casing - Washed on Cement and
Cement out Cement. Circulated - Got down 30 cufs of
Cement out on the Schedule - Cemented to 3035'. Then the
Length of the Honse and Pressured up to 1000 psi.
Pressure held. No losses. OK. Started Churching and
Cement for 60 ft. at the Port Colonn at 4015'. Then
Pressured casing. Pressured - Completed Churching and
Cement. Then to go to the Port Colonn at 4015'. Then
Pressured casing. Pressured - Completed Churching and
Cement at the Port Colonn at 7:30 pm. Then circulated Bottoms
Upping to 1000 psi. Pressured up to 1300 psi with
10.2% over in the Hole and Held - Pressure Studied
Building due to Heat expansion from Hole - No losses.
Pressure Test - Good. Preparing to Drill Ahead -
New 6" Hole.

Weather Cloudy

Submitted by Eric Parker
DAILY REPORT

Date: 15, 1983

Well No. VS-9  Contractor: P&L

DESCRIPTION OF ACTIVITIES

Cemented Mud to Checkin Hole to Run Casing.

Last night Stanford Casing Fluid - at 1800 p.m. 30 bbl. per hr.

Flow - Added cement - Slowly lost to 30 bbl. per hr.

Flow and decided to plug a stabilizing cement plug (75 ft.) on bottom to cure loss - than polish off top of plug and run 2" casing.

Weather: Path

Submitted by: [Signature]
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809

DAILY REPORT

Date 14, 1983

Well No. 169  
Contractor RCO

DESCRIPTION OF ACTIVITIES

At 11:30 A.M., opening at depth of 4149' with 5% BZ -
with Full Return Circulation. Temperature - 74°F. -
Temperature - out 138°F. - ROP - 34 FT/HR - Both mud coolers
on. CO₂ - At 4:47 P.M. - Mud weight in - 11.1 Pct.

Drilling Surface -

3710' - 21 3/4 Rg - 5 - 0.2% Decnt. - 16.9°F Temperature.
3830' - 21 3/4 Rg - 5 - 0.2% Decnt. - 17.4°F Temperature.

Formation -

3625'-3700' - 70-80% High Alumina - 30-40% Aluminite.
3700'-3780' - 10-50% High Alumina - 0.2% Hydrolite - 90-40% Aluminite.
3780'-3900' - 0-30% High Alumina - 20-30% Aluminite - 20-30% Porphyritic.

At 4172' - Decnt. was made to Run 7 - cutting to

4182' - With TD at 4182' - From of Hole Sufficient -
To Case Off Into Bone - Ann formation at 4172'-4180.'

Vingers Completed.

Weather Good

Submitted by Eric Akana
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Date: 13, 1983

Well No. 165-9 Contractor: PEV

DESCRIPTION OF ACTIVITIES

With mud motor and bent subs made 34' of new hole to 2652' took directional survey -Named In
The Correct Direction - Wholly Pulling From Bottom
With Dril Slips - Took a One Pass - went to
Bottom and Canceled Kick out - With Pot Ties up
No. 165's and only small quantity of CO2 Formation
At 3600' - 3635' 30 100% Nigg Medicine - 0-70% Aphamite-
Mud Weight Going in at 11.1 API - Coming out at 10.7 API
Cutting mud - Will Continue mud to being within
Up and Go Back In Hole to Drill Ahead

Weather: Partly

Submitted by: [Signature]
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809

DAILY REPORT

Date: 12, 1993

Well No. K3-9  
Contractor P&U

DESCRIPTION OF ACTIVITIES

Drilled to 3637' - Trying to do percussion kick - 
Mud motor not working - Plans are to pull out for - 
Mud motor change - Last night while tripping in 2587' - Took a CO2 kick - A test of 60 bbls came - 
Start in Well and pump test, cut - With Bottoms - 
Up - CO2 2772 PPM and H2S 100 PPM at the Pits - 
Original Mud Weight 11.1 PPG - After Kick 10.1 PPG - 
(possibly casing pipe or CO2) Plans are to kick - 
Well to correct perforation and points to target - 
Plans are to bring weight up to 11.3 PPG and - 

Draw Ahead

Weather: Good

Submitted by:

[Signature]
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809  

DAILY REPORT  

Well No. 16-9  
Contractor PDU  

DESCRIPTION OF ACTIVITIES  

DRELLING TO A DEPTH OF 3614' WITH 8 1/2 655 AND  
RIGGING CIRCULATING (NO LOSS) - TEMPERATURE 74 - 105°F  
TEMPERATURE OUT - 138°F - MUD COOLANT 2) ON - CHANGING  
OUR MUD TO HAVE MUD WEIGHT TO 10.9 PBG - SLHUD  
PUMPS OFF TO CHECK FOR FLOW - ABOUT 1/8 FLOW -  
PLANS ARE TO WEIGHT UP MUD TO 11.1 PBG - THEN PULL  
OUT OF HOLE TO PICK-UP MUD PRIOR TO KICK  
WELL ON A SUGARLAND PERFORATION -  

DIRECTIONAL DATA  

<table>
<thead>
<tr>
<th>Depth (ft)</th>
<th>Dip</th>
<th>Deviation</th>
<th>Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>3361'</td>
<td>22° 29'</td>
<td>N 57° E</td>
<td>35°F</td>
</tr>
<tr>
<td>3361'</td>
<td>22° 29'</td>
<td>N 57° E</td>
<td>35°F</td>
</tr>
</tbody>
</table>

THE FLOW RATE IS STILL THE SAME.  

Weather GOOD  

Submitted by [Signature]
DAILY REPORT

January 9, 1992

Well No. K5-9 Contractor

DESCRIPTION OF ACTIVITIES

Completed Nipping up Expansion Spool - 10' Mass Air
And Blow Stock - Went Into Hole To Clean Out Canoe
At Leina. Hanged And Pulled Out Plug And Climb To Shop
And Pressure Test Coming - Then Set Bits And Pressure
Just Exposed Spool And Mass Air Down To 3500 PSIG
Popped Stock To Be Pressure Tested at 3500 PSI And
Hanged to 2000 PSI - All 4th Flarehead Area
All OK. Pressure Test Complete - Plates OK
To Run Pat Survey. Then Comed Leak-off Test At
The Shop, Then Calculate E.m.w.t. To Pull out
With - Then Start Dressing New Hole

Weather Good

Submitted by [Signature]
Well No. 165-9

Contractor RCO

DESCRIPTION OF ACTIVITIES

RAW A TOSER OF 46 JOINTS OF 5 3/4" CASING

47th C-Q - New 8-in. mud cement to surface - Cement in back at 10:45 p.m. last night - Cement to surface. Cut off casing. Cement on cement - Started nipping 18' expansion plug and 10' master valve - In preparation to pressure test casing and 130' shaft.

Weather Cloudy

Submitted by Eric Parker
### Casing Pressure Test:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Project name</td>
</tr>
<tr>
<td>2.</td>
<td>Drilling company</td>
</tr>
<tr>
<td>3.</td>
<td>Well name and number</td>
</tr>
<tr>
<td>4.</td>
<td>Location</td>
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<tr>
<td>5.</td>
<td>Person(s) taking test</td>
</tr>
<tr>
<td>6.</td>
<td>Date of test</td>
</tr>
<tr>
<td>7.</td>
<td>Time of test</td>
</tr>
<tr>
<td>8.</td>
<td>Depth of hole</td>
</tr>
<tr>
<td>9.</td>
<td>Size of last casing string</td>
</tr>
<tr>
<td>10.</td>
<td>Depth to top of casing (Casing Lap)</td>
</tr>
<tr>
<td>11.</td>
<td>Depth to bottom of casing (Casing Shoe)</td>
</tr>
<tr>
<td>12. (a)</td>
<td>Pressure at which casing tested (to Master Valve)</td>
</tr>
<tr>
<td>12. (b)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>13. (a)</td>
<td>Pressure at which Upper Blind Rams tested</td>
</tr>
<tr>
<td>13. (b)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>13. (c)</td>
<td>Pressure at which Lower Blind Rams tested</td>
</tr>
<tr>
<td>13. (d)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>14. (a)</td>
<td>Pressure at which Upper Pipe Rams tested</td>
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<tr>
<td>14. (b)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>14. (c)</td>
<td>Pressure at which Lower Pipe Rams tested</td>
</tr>
<tr>
<td>14. (d)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>15. (a)</td>
<td>Pressure at which Hydrid tested</td>
</tr>
<tr>
<td>15. (b)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
<tr>
<td>16. (a)</td>
<td>Pressure at which Kelly Cock tested</td>
</tr>
<tr>
<td>16. (b)</td>
<td>Drop in Pressure to (after 30 minutes)</td>
</tr>
</tbody>
</table>

Other Information: (use additional sheet, if necessary).
DAILY REPORT

Date: 7, 1983

Well No. 15-9

Contractor: Pco

DESCRIPTION OF ACTIVITIES

DURING THE NIGHT PULLED OFF TO THE TOP OF THE LINE

 Terminated at 1798'- Then Cleaned out Cement at Top

Shoe at 954' Came at 3235' - Cemented out

Pulled Mud with Latter from 1810' to Surface

Prepared to Pressure Test Line Cap to 18. 09 Gram

(250 PSF SURFACE PRESSURE) - Held Pressure for 30

Minutes - No Loss - Good Test - OK. Plans Box 10

Run 954' Tie Back Casing to Surface

Weather: Cloudy

Submitted by: [Signature]
DAY REPORT

JAN 4, 1993

Well No. 15-9

Contractor Pau

DESCRiPTION OF ACTIVITIES

Pay a total of 87 joints of 5 1/2" casing and landing
casing with top of liner hangar at 1807' before completing
pumping cement in the 15 1/2" casing displaced 460' of
cement - grout cement - last cement on top of liner
Hangar to set - good cement job of liner hangar - well
Wait on cement to set up, plans are to polish off
to top of liner hangar with 12 1/4" bit - then clean out
Cement to top of first collar at 3132' with 8 1/2" bit - then
Conduct pressure test of liner lap after waiting on
cement a total of 24 hours - cement by placement at 2:45 AM - will test lap to .9 gradient (approx 650'F
At surface with 107' HOG mud in hole) after pressure
Test will continue with the back to surface.

Weather Good

Submitted by Eric Han
Well No. 15-9  Contractor

DESCRIPTION OF ACTIVITIES

Last night pumped 100 cu ft of cement and pulled out
and waited on cement - went back in and jacked top g
Plug M 3207' - polished off top of Plug to 3255'
Then conditioned hole in preparation to run 5 1/2" casing
(Liner - Total 37 Joints) The Shot at Appx 3255' and
Drilled Motor at 1605 - (SHLF of 13 1/8" MT.
2005') Appx 200' of OTAL CAS into the 13 3/4" casing

Weather COLD

Submitted by [Signature]
PGV  KS-9
Shut-In Pressure at 3329'
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Jan 4, 1992

Well No. 1K-9 Contractor Padding

DESCRIPTION OF ACTIVITIES

Drilled to a depth of 3320'. Then encountered a Kek.
Lost all weight on bit and also lost pump pressure.
Driller immediately shut in well and saw pressure of 340 PSI on the wellhead - started pumping on the well
and started mixing Kelly weight mud. Calculated at 10.8 PSI mud. Continuing
out well and responded with Kelly mud. Completed displacement and
stepped in choker for flow. No flow. 0 PSI on the wellhead. Well
penalized - drew standing pipe with appeared 3' of fluid on screen.

Directional surveys - (2723' - 4% Ag - 5.71 E) (2753' - 13% Ag - 5.77 E) (2849'
14.15 E) - 5 - 544' - 100') (2925' - 13% Ag - 5.03 E) (3001' - 14% Ag -
5.54 E) - 165') (3137' - 29 Ag - 5.47 E) (3240' - 2% Ag - 5.31 E) - TD #
3255' - True Vertical Depth - 3251' Required 200' More From Vertical. Wipe Back to 
Depth where stand - Vertical. Off by a Little - So 5% Step at 3255' Then Tie Back.

And completed Pullback Rampant (Expansion Spot - 10' Average Value) - Then
pumped out with 6% Bit. When Converging and Kick - Shut in

HPS - 300 PSI - Co 1500 PPA.

Weather 

Submitted by
Well No. K5-9

Contractor P16

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec 31, 1952

DESCRIPTION OF ACTIVITIES

At 10:50 A.M. DRILLING AT DEPTH OF 2441' CWSF
1½ Bit and Mud Motor - Doing Perforating Work
Temperature 74° - Humidity 56% at 110° -

Mud Cooling Off

Deviation Survey - 2081' - 3½ Deg. N. 89° W. North

2610' - 2¼ Deg. N. 82° W.

2141' - 1¼ Deg. N. 82° W.

Weather Cloudy

Submitted by
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 30, 1992

Well No. 1654

Contractor PCU

DESCRIPTION OF ACTIVITIES

Cleaned out Channal to 20' - Curred Clean

And performed Leak Off Test - Leaked off at 450 GPM

(Watered 500 GPM at .7 Gradant) Pumped water to

Get a Discharge Rate of 2 PPM at 800 GPM. Thentried

20 Top off of Channel No cement. Washed to 50 at 2037

(Probable hole on bottom before doing Channel Top on Channal)

Pumped 150 Cub ft of Channel and Squeezed - for A

Total of 7 Bbcs of Cement Squeezed Away. And Added

1500 PPM for 1 Hour - Wasted on cement. Then Squeezed

To Clean out Channel and Prime Alone (New Hole) at

11:00 AM. Paved to 2075. Then Pull out of Hole to

Pick-up mud motor and Bells Sub A Head Ward Away

From KS 1 Oahu Side

Weather Rainy

Submitted by
Well No. 125-9
Contractor

DESCRIPTION OF ACTIVITIES

Completed Pressure Test of 13½” Casing and BOP Stack. Cleaning out Casing and to Drill out of the shoe at 200’ then perform leak off test -

Looking for a 0.7 gradient (500 PSI plus Hypersensitive Total of 1400 PSI at the shoe) if cannot get a 0.7 gradient - Well pump clean and square the shoe. Then complete leak off test until attain 0.7 gradient. Then start drilling next hole.

Weather Good

Submitted by [Signature]
DAILY REPORT

Dec. 28, 1952

Well No. 160-9

Contractor PCU

DESCRIPTION OF ACTIVITIES

Concrete Pressure Test of 1 1/2" casing and bar stock.

Pressure casting to conserve mud for 30 minutes - lost horse.

Set well pump plug to bin pump to first bar stock to 3500 psi.

From liston to job - steel pipe, range, blower range, range pipe range.

Unmark, pipe range, Hypod - trailed blower range to 3500 psi.

Held off 30 minutes - lost 105 psi - trail steel pipe range to 3500 psi.

Held for 30 minutes - lost 35 psi -textures range pipe range.

3500 psi held for 30 minutes - lost 0 psi - third unmark range.

City (Mark Monford) found a leak and worked on leak.

Tested unmarkas to 3500 psi. Held for 30 minutes - lost 0 psi.

Tested hypod to 3500 psi over 30 minutes. Lost 0 psi. Pressure test - 0 psi. Preparing.

Look-off test at the shop.

Weather Rainy

Submitted by
State of Hawaii  
Department of Land and Natural Resources  
Division of Water Resource Management  

**ROPE PRESSURE TEST**

Instructions: Please print or type and send completed form with any attachments to Division of Water Resource Management, P.O. Box 272, Honolulu, Hawaii 96809  
Reference DLNR Regulations: Section 13-183-76 (b) All casing strings shall be pressure tested after cementing and before commencing any other operations on the well. Minimum casing test pressure shall be approximately one-third of the manufacturer's rated internal yield pressure; provided that the test pressure shall not be less than six hundred pounds per square inch and greater than 1500 pounds per square inch. In cases where combination strings are involved, the above test pressures shall apply to the lowest pressure-rated casing well. Test pressure shall be applied for a period of thirty minutes. If a drop of more than ten percent of the test pressure should occur, the casing or cement job shall be considered defective and corrective measures shall be taken before commencing any further operations on the well.

<table>
<thead>
<tr>
<th>Casing Pressure Test:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Project name</td>
<td>Puna Borahane Venture</td>
</tr>
<tr>
<td>2. Drilling company</td>
<td>Parker Drilling Co.</td>
</tr>
<tr>
<td>3. Well name and number</td>
<td>Kapoho Slate #9</td>
</tr>
<tr>
<td>4. Location</td>
<td>Puna District</td>
</tr>
<tr>
<td>5. Person(s) taking test</td>
<td>David Weissgerber Eric Tamala</td>
</tr>
<tr>
<td>6. Date of test</td>
<td>12-28-92</td>
</tr>
<tr>
<td>7. Time of test</td>
<td>1800 hours</td>
</tr>
<tr>
<td>8. Depth of hole</td>
<td>2050</td>
</tr>
<tr>
<td>9. Size of last casing string</td>
<td>18.5&quot; 68'</td>
</tr>
<tr>
<td>10. Depth to top of casing (Casing Lap)</td>
<td>Surface</td>
</tr>
<tr>
<td>11. Depth to bottom of casing (Casing Shoe)</td>
<td>2005</td>
</tr>
</tbody>
</table>

12. (a) Pressure at which casing tested ( ) 2000 Surface Pressure  
(b) Drop in Pressure to (after 30 minutes) 110 PSI

13. (a) Pressure at which Upper Blind Rams tested 3500 Surface Pressure  
(b) Drop in Pressure to (after 30 minutes) 105 PSI  
(c) Pressure at which Lower Blind Rams tested 3500 Surface Pressure  
(d) Drop in Pressure to (after 30 minutes) 30 PSI

14. (a) Pressure at which Upper Pipe Rams tested 3500 Surface Pressure  
(b) Drop in Pressure to (after 30 minutes) -0-  
(c) Pressure at which Lower Pipe Rams tested 3500 Surface Pressure  
(d) Drop in Pressure to (after 30 minutes) -0-

15. (a) Pressure at which Hydril tested 2500 Surface Pressure  
(b) Drop in Pressure to (after 30 minutes) -0-  

16. (a) Pressure at which Packers tested 3500 Surface  
(b) Drop in Pressure to (after 30 minutes) -0-

Other Information: (use additional sheet, if necessary).
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Jul. 28, 1951

Well No. 113-9 Contractor PCO.

DESCRIPTION OF ACTIVITIES

Drilled to a Depth of 2050' - with 172' Bit and 30'
HDC. Cemented Hole to Run 13½' casing - landed
Shoe at 2005'. Pumpe Cement, with 100% success.
Completed Pumping Cement and Prepared to Do Top Job
With 1½ Pipe Down The Annulus - At the Shad
Beginning of Pumping With 1½ Pipe. Cement Came Back
To Surface - and proceed to Displace Top Portion of
Cement With Salt Water Cement in the upper portion
of the 13½' casing. (Stronger Cement at surface).
Cement Stated At Surface - Last Division Survey at 1575'.

2 deg. Ave. 54.45 - Water Temp. 138½ Temperature
Crawl HU2E22 Down To 100' Stock And Nippling Up
13½' BoF Stock And Preparing For Pressure
Test And Look-Off Test Of The 13½' Space
Before Being Able To Drill New Hole (13½' Hole)

Weather Rain

Submitted by [Signature]
DAILY REPORT

Well No. 12-9

Contractor PCU

DESCRIPTION OF ACTIVITIES

Drove to 1674 - Then Pan Northwest Survey.

Surveyed at 1674 - 1st Dec. - Wassing Driller - 1780 penetrate.

During the survey - the well string got differential stuck.

Worked on pipe and after pumping nitrogen gas
to lighten mud weight got string loose - Pukes out
of hole to check well string and also change out
taps - Traded back in with drill pipe and
GOT 12 Foot with no fall on button - Circulated

Hole clean and displaced hole with new mud.

And prepared for well ahead. Plans are now to
Keep Working till 13 1/8" casing is in place and
Canister in place.

Weather Rain

Submitted by Eric Johnson
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 23, 1952

Well No. 1659
Contractor

DESCRIPTION OF ACTIVITIES

As of 11:30 A.M. Drilling New Formation At Depth
of 1631' With 173' Bit. - Rate of Penetration Of 11 Feet Per Hour,
Pressure - 1272 LBS. - Full Water Circulating. Temperature -
74 - 116°F. Temperature Out - 122°F. CO2 - 441 LPS.
Bentonite Pumping At Total Of 7 Cement Pumps. Also
Squeezing. Brought Cement Level To 847'. Clearing Out
Cement To 1164'. Then Started To Drill New Formation -
Very Hard Formation - Now Drilling

Weather

Submitted by

Weather

Asym
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 22, 1944

Well No. 165-9  
Contractor N/A

DESCRIPTION OF ACTIVITIES

Cleared out Cement to 1624' then Drilled New Hole to 1435' (1 FT) Lost Circulation - Again Large Cement - Pulled out of Hole to Pump Cement and Shovel Water on Chamfer - Tried to Fill Hole with Water - Still Losing at Rate of 100 Per Hour, Well Trip back in Hole to 100' of Drill then Pump and Shovel Cement Again to Try to Cure Lost Circulation

Weather Frosty

Submitted by [Signature]
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. BOX 373
HONOLULU, HAWAII 96809

DAILY REPORT

Dec. 21, 1951

Well No. 165-9
Contractor No.

DESCRIPTION OF ACTIVITIES

Drilled to a depth of 165' with 173' A.F. and lost all

Ran 28' with laterite and found top of casing at 650'.

Pumped cement to check lost circulation. After waiting on

cement, tried to fill hole with water. Hole still losing

water. Ran 24' to find top of cement at 145'. Dumping annular

300 Gal. of annular cement and came out of hole to come on

cement. Filled hole with water. Hole not taking water.

Ran 34' Here with bit and found top of casing at 93'.

Plans are to clean and cement and drill around.

Revision Source: 1260' - 3/4 IP. DW, 5-24-X: adoption - 1257' Average

1265' - 3/4 IP. DW, 5-40-X: adoption 1267' 

1455' - 3/4 IP. DW, 5-53-X: precision 1257' 

1565' - 3/4 IP. DW, 5-42-X: adoption 1257' 

Formation - Serum - Basalt - Perphyritic

Weather Good

Submitted by
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 18, 1995

Well No. 129 Contractor

DESCRIPTION OF ACTIVITIES

After Square Job - Cleared out Cement to 985'- And

Pumped Air Line Off - Pumped to 250 psi.

Grout - Tapped out of M.P. for Grouting Assembly -

And Back in to Pump New Ht - Drained to 940'-

And Lost Air Circulation - Pulled out of Line And

Pumped and Squared cement to Cure Lost Circulation -

Pumping to Go Back in Hole with Grouting Assembly

To Open New Hole.

Weather Good

Submitted by [Signature]
Well No. 1K-9

Contractor

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 17, 1952

DESCRIPTION OF ACTIVITIES

After completion of casing, pressure test, cleaned out channel and drilled out hole to 946.5 feet.

Leak off test - no test. Pumped cement from

Squeeze cement went on.

Submitted by
DAILY REPORT

Dec. 16, 1952

Well No. 15-9

Contractor

P&O

DESCRIPTION OF ACTIVITIES

Connecting Pressure of 20" Casing and 20" Hydrant Pressure up to 1500 PSI, Lost to 1460 PSI

Pump PCIe 30 minutes - This OK - Working on Hydrant to Start at First - Got Back to Spec

Any connector Pressure first -

Submitted by

[Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 16, 19__

Well No. K5-9  Contractor P20

DESCRIPTION OF ACTIVITIES

Drillers waiting on cement - will start mixing 1000
Book stock (Hydrol and rocking head) on 20" casing

May proceed to connect pressure test or casing and
Bit equipment - then proceed on with a look out just
of the shot. Looking for at least 14' of grading at
the shot. Proceed on to pull 4' head with 17' bit
and dressing assembly.

Weather  Rainy

Submitted by Eric Pahan
DESCRIPTION OF ACTIVITIES

Cement Job consists of (100 lbs of super fluok) (100 lbs Hawaiian Cement) - (50% M.C. - 50% Silica Flour - 13.5% CFA - .5%Mica - 40% GEL - 3% CAC). Job-

(100 lbs M.C. - 40% S.F. - .65% CFA - 3% CAC) - Described

Pour cement with fresh water and rammed down. Written on

Cement - Tried to add top of cement in morning - Could not find

Top rammed 500 cu ft of Hawaiian cement with 1/4 Perlite - 40% S.F.

.65% CFA - 3% GEL - Written on cement - (No Return on Super)

Pumped another 500 cu ft of the same type of cement - Written on cement - Ordered and poured 15 cu. yds of ready mix cement

And brought the cement back to Super - Will write on cement for 12 hours - Then store with customs of 20" cement

And waiting on flange to start nipping up opening.

Signed with No. 10 nails -

Weather Good

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 14, 1992

Well No. 1459

Contractor

DESCRIPTION OF ACTIVITIES

Answered to a request for 40" with 20" fit

To key for casing point - last seen at 918'

3/4 Reg. Moisture - N. 23 - E. Distance - No temperature or humidity

Ran 20" casing and cement side at 936' - Prepared to cement and at 1:35 P.M. Bumped plug after displacing cement in drain pipe - will wait on cement other guy to tag top of cement in annulus. No returns to spotters

During the work ran Shut down during the night

As result of noise due to use of 5 Air compressors

Shut down Sunday night at Saturday night

Weather Good

Submitted by
DAILY REPORT

MURUAMA 23, 1981

Well No. K5-9

Contractor PCW

DESCRIPTION OF ACTIVITIES

30 ft. Concluded. Pump for Plant and Clean Up

Surface

Weather RAIN

Submitted by
STATE OF HAWAI‘I
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. BOX 373
HONOLULU, HAWAII 96809

DAILY REPORT

DEC. 11, 1997

WELL NO. 1159

CONTRACTOR

DESCRIPTION OF ACTIVITIES

At 9:00 A.M. Morning at a depth of 827′-1.972
At 9:15 A.M. With portable 1 tool removed. Used hammer
Flume - Rop - 14.9 ft/hr. Temperature in - 74°F - Temperature
out 92°F - Flume Pressure - 680 ± Deviations: Setting
At - 590' - 14 Deg. Deviation - 5.85′ 6 Deviation Setting - 94°
Temperature - At 705' - 0° Deviation - 90° Temperature
Formation consist of Scoria, Vesicular, and Porphyrite

WEATHER

(submitted by)
DAILY REPORT

Dec. 18, 1992

Well No. 12-9

Contractor

DESCRIPTION OF ACTIVITIES

Drain to a depth of 700', pulled out of

Note: de ball for water sample - water

Level at 1200' - grab sample and

Boreman at well heads to next casing point

1100' - (to continue)

Weather - Rainy

Submitted by [Signature]
State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF WATER RESOURCE MANAGEMENT  
P. O. Box 373  
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 10, 1993

Well No. 125-9  Contractor PBC

DESCRIPTION OF ACTIVITIES

At 12:30 P.M.  At Depth of 674' - Wind 260° W.

Partial return - debrising with slotted pipe.

Plan a Drill to 700'.  Other hole for water sample.

Some time in the evening - shut down early this morning.

Due to noise levels at 45 DBA and 46 DBA.  Restarted

up at 7:00 AM.  This morning.  Excessive noise at

Approx 600'.

Deviations Swing at 35° - 2/4 Rg. Positive - 5-22-49

Positive - 5-22-49

Weather Cloudy

Submitted by  

[Signature]
State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec. 9, 1942

Well No. 145-9
Contractor

DESCRIPTION OF ACTIVITIES

At 2:00 p.m. drilling at A depth of 470' W.F.F.
24' Bit. Partial Bentonite - Using Amended Plume -
Deviation Survey - Ad 258' - 14 Deg. Dev 5-65 W. - No Survey
Ad 350' - 34 Deg. Dev. 5-20 W. Nintin. 98' Temperature

Weather Rain

Submitted by [Signature]
Well No. K5.9
Contractor

DESCRIPTION OF ACTIVITIES

At 12:00 noon Drilling at depth of 71' with 26' M!

With partial water - Slow Drilling - Drilling with

Aquifer fluid - Directional Survey at 150' - 180 D.

5-10' direction - 84°F Temperature - Formain R

Construction of Psychrometer and Scuba - Noise Level

Below permitted levels.

Weather Goody

Submitted by
<table>
<thead>
<tr>
<th>SITE#</th>
<th>LOCATION</th>
<th>WIND/ETC./COMMENTS</th>
<th>TIME</th>
<th>H2S (PPM)</th>
<th>DB(A)</th>
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<td>Punana h.</td>
<td>Audible, cricket</td>
<td>10:44 a.m.</td>
<td>34-35</td>
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<td>10:37 a.m.</td>
<td>36-44</td>
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<td>3</td>
<td>Punana h.</td>
<td>Audible, cricket</td>
<td>10:46 a.m.</td>
<td>28-31</td>
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<td>4</td>
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<td>Audible, cricket</td>
<td>10:34 a.m.</td>
<td>27-29</td>
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<td>Kahuku p.</td>
<td>Not audible</td>
<td>10:32 a.m.</td>
<td>26-27</td>
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<td>6</td>
<td>Hana h.</td>
<td>Audible, rain</td>
<td>10:27 a.m.</td>
<td>37-40</td>
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<td>7</td>
<td>Hana h.</td>
<td>Audible</td>
<td>10:23 a.m.</td>
<td>39-40</td>
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<td>Special</td>
<td>Nezen Robert</td>
<td>Audible, rain</td>
<td>10:15 a.m.</td>
<td>42-43</td>
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INVESTIGATOR P. Wong / P. Akita

DATE 12-7-92 / 12-8-92
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<tr>
<th>SITE#</th>
<th>LOCATION</th>
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<th>TIME</th>
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<th>4B (A)</th>
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<td>Audible</td>
<td>18:20p</td>
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<tr>
<td>2</td>
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<td>12:15p</td>
<td>39-42</td>
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<td>Pohoku Rd./Jones Res.</td>
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<td>4</td>
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<td>12:32p</td>
<td>37-39</td>
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<tr>
<td>6</td>
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<td>Audible</td>
<td>18:26p</td>
<td>41-42</td>
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**Wind Speed:** 0-2 MPH  
**Wind Direction:** NE

<table>
<thead>
<tr>
<th>INVESTIGATOR</th>
<th>DATE</th>
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</thead>
<tbody>
<tr>
<td>J. Eckerd</td>
<td>12-7-92</td>
</tr>
</tbody>
</table>
DAILY REPORT

Dec. 7, 1992

Well No. 125-9  Contractor

DESCRIPTION OF ACTIVITIES

Suspended work at 7:30 am. Yesterday - 12-6-92
Noise levels in compliance with Permit - Ray Purcell
Our noise with noise level at approx 40 DB. Complaints
from nearby people - At 11:00 noon drilling at 154'
with HC' kit - Part time Kevin - Drilling with Auger
Water with sand (some) Hard formation - Slow drilling

Weather Good

Submitted by Eric P. Sun
DAILY REPORT

December 4, 19_?

Well No. 1.5.9

Contractor :

DESCRIPTION OF ACTIVITIES

Rigging up Open Rig In Preparation to Try to Spin Sunday, but more than likely on Monday.

Weather Rain

Submitted by ________________
DAILY REPORT

Dec. 3, 1992

Well No. 125-9

Contractor

DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P.O. Box 373
Honolulu, Hawaii 96809

DESCRIPTION OF ACTIVITIES

Rigging up, drew lift, in preparation to drill

Weather Rainy

Submitted by [Signature]
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

December 2, 1993

Well No. 16-9

Contractor

DESCRIPTION OF ACTIVITIES

Rigging up, Open Pit, Clean Well, - Possible to be ready to pump sometime on Saturday

Weather Rainy

Submitted by
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

Dec 1, 1992

Well No. 1289
Contractor

DESCRIPTION OF ACTIVITIES

Arising up after Cup Over. Later... Attached
as a copy of Up water pumping procedure.

Weather Good

Submitted by
PUNA GEOTHERMAL VENTURE
KS-9 DRILLING PROCEDURES
December 1, 1992

1. Move in suitable rig, air compressors and associated equipment.
   1.1. Notify DLNR 24 hours prior to rig up.
   1.2. Install sound proofing equipment.
   1.3. Install direct communication between floor, and both rig supervisor and operators
       supervisor.
   1.4. Driller will be on floor at all times.
   1.5. Read, understand and comply with all parts of the Plan of Operations that pertain to
       drilling.
   1.6. Send copies of daily tour sheets to DLNR.
   1.7. Adhere to attached Drilling Reporting Criteria as per the Plan of Operations.

2. Rig up 30" rotating head and flow line.

3. Drill 26" hole to 650'.
   3.1. Use 9 ½" NAVIDRILL and 2000 cfm air and stiff foam as needed. Increase air volume
       as required.
       3.1.1. Use 3U to mix polymer as required. If polymer volumes get above the limit of
           the mist pump use rig pump to pump polymers and mist pump for soap.
   3.2. Take MRT every 90', with directional surveys when below 500 ft.
   3.3. Catch 10' grab samples from drill cuttings and monitor hydrothermal alteration wherever
       circulation permits. See Attachment 5 for mud logging procedures
   3.4. Check returns, if any, for salinity and chlorides.

4. At 700' rig up bailer and bail well until clean. Collect a representative sample of ground water
   at 650' ± RKB.
   4.1. Notify DLNR 24 hours prior to sampling procedure.

5. Continue drilling 26" hole to 1000' ±. Casing shoe will be set in low permeability rock below
   major lost circulation zones. The casing will be set if high temperatures or hydrothermal
   alteration is encountered.
   5.1. Keep hole straight as possible.
   5.2. Take surveys every 90' with MRT.
   5.3. Catch 10' grab samples from drill cuttings and monitor for hydrothermal alteration
       whenever circulation permits.
   5.4. Check returns for increased salinity or chlorides.
   5.5. Monitor well for flow or gases.

6. Set and polish cement plug on bottom if formation is not competent.
7. Circulate hole clean and make wiper run.
   7.1. Measure out of hole.
   7.2. Keep hole full at all times.
   7.3. Check for flow.
   7.4. Circulate hole clean after wiper run.

8. POH, keeping hole full, if possible, and checking for excess flow

9. Rig up and run 1000' ± of 20" 94# K-55 casing equipped as follows. Guide shoe and screw-in baffel plate with latch in plug. Centralize 10' above shoe, first collar and every third collar there after.
   9.1. Run casing at slow speeds to prevent down surge.
   9.2. Fill casing with mud while running.
   9.3. Keep hole full if possible.
   9.4. Have casing sized to remain above bottom.

10. Trip in hole with drill pipe and screw into 20" shoe.
    10.1. Circulate hole clean.
    10.2. Reciprocate casing 5-10' while circulating to prevent differential sticking.

11. Pump 50 ft³ H₂O ahead followed by 100 ft³ CaCl₂ H₂O mixed 10% plus 20 ft³ H₂O plus 250 ft³ Sodium Silicate plus 20 ft³ H₂O. Pump 100 ft³ Hawaii cement followed by 3040 ft³ premixed Hawaii cement, 1:1 perlite with 40% SSA-1 plus 2% gel, 0.75% CFR-3 and 2% CaCl₂, followed by 300 ft³ Hawaii cement mixed 40% SSA-1, 0.75% CFR-3 and 3% CaCl₂. Drop plug and displace cement out of drill pipe.
    11.1. Reciprocate casing 5-10' while cementing to prevent differential sticking.
    11.2. Monitor returns and surface pressures throughout job.
    11.3. Center casing and WOC.
    11.4. Be prepared to do top job through 1" pipe with high density cement.
    11.5. Have at least 20 cubic yards of sand, gravel, and or volcanic cinders on hand to fill annulus through lost circulation zones if required.
    11.6. WOC minimum of 12 hours.
    11.7. Perform top job as required.

12. Cut off casing and weld on 20" -2M slip on flange.
    12.1. Install pre fabricated 20" riser with 20" - 2M flanges and 2 each 6" side outlets with 6" x 2" swages and bull plugs.

13. Install 20" annular preventer and rotating head.
    13.1. Notify DLNR 24 hours prior to testing.
    13.2. Test BOPE and casing and have DLNR to witness and approve.
    13.3. Log test results on tour sheet and morning report. Test casing to 2000 psi or 70% of KS-9 Drilling Procedures
burst, whichever is less.

13.4. Periodic BOPE drills will be conducted and logged on tour sheets.
13.5. Install and test and run high efficiency mud cooler.
13.6. All personnel will have BOPE training. Training will be logged on the daily tour report.

14. Make up 17 1/2" slick BHA. Clean out cement with mud.

15. Drill 1' to 5' of new 17 1/2" hole and circulate clean with mud.

16. Perform leak off test and squeeze if necessary.

17. Install 6" diverter valves and line as shown in Figure 3-4. Install H₂S abatement equipment on diverter line.

17.1. Function test diverter

18. Make up BHA and drill 17 1/2" hole to 2000'.

18.1. Keep hole straight.
18.2. Survey every 90' and run MRT.
18.3. Catch 10' grab samples of drill cuttings.
18.4. Check mud for increased salinity and chlorides
18.5. Monitor well for increase or decrease in flow rates and gasses.
18.6. Keep close watch on samples for changes in mineralogy indicative of a high-temperature geothermal reservoir.
18.7. Cement off lost circulation zones.
18.8. Be prepared to set casing if there are any signs of encountering a high temperature reservoir.

19. Run high pump volumes with Howco and/or PDC yard pump.

19.1. Run 80's on shale shakers (run 20's, if we need to).
19.2. Dump shale pit each 2 - 4 hours while drilling. Run mud cleaner at all times.
19.3. Keep mud plastic viscosity and gels as low as possible with at least a 1/32" mud cake.


20.1. Measure out of hole.
20.2. Keep hole full.
20.3. Monitor well and be sure well takes proper amount of fluid.


21.1. Use thread protectors.
21.2. Use Stab-in guides and drill pipe centralizers.

KS-9 Drilling Procedures
21.3. Run casing at slow speeds to prevent down surge.
21.4. Fill casing with mud while running.
21.5. Keep monitoring well.
21.7. Have casing sized to remain off bottom.

22. Rig up and run 5” drill pipe with Davis Lynch screw-in sub.
22.1. Screw into float collar.
22.2. Be sure casing is full of mud.
22.3. Circulate and condition hole for cement job.
22.4. Observe casing and drill pipe annulus, to be sure stab-in is not leaking.
22.5. Reciprocate casing while circulating to prevent differential sticking.

23. Pump 50 ft³ H₂O ahead followed by 50 ft³ CaCl₂, H₂O and 133 ft³ Sodium Silicate, and 5 ft³ H₂O. Pump 50 ft³ Hawaii cement followed by 3000 ft³ Hawaii cement, mixed 1:1 perlite with 40% SSA-1 plus 2% gel 0.65% CFR-3 and retarded, as required, followed by 300 ft³ Hawaii cement with 40% SSA-1 0.75% CFR-3. Drop plug and displace cement.
23.1. Reciprocate casing 5-10’ while cementing.
23.2. If casing becomes excessively sticky during cementing phase, place casing at proper position and centralize.
23.3. Monitor returns and pressures throughout job.
23.4. Be prepared for top job.

24. If instructed perform foam cement job instead of conventional job described in step 24
24.1. Need 6” to 2” swages to replace diverter valves for foam cement job.
24.2. A written program will be provided.

25. WOC at least 12 hours. Cut off casing and install 13¾” x 13¾” -5M casing head, using hot head.
25.1. Test casing head.

26. Install 13¾” -5M mud cross, 13¾” 5,000# double gate, 13¾” 5,000# banjo box with rupture disk and single gate, 13¾” 5,000# double gate, 13¾” 5,000# annular preventer, rotating head, choke and kill lines, blooie line and muffler. Also include water lines and abatement lines as per Figure 3-8 in Attachment III. Install and check all monitoring equipment including drillers assistant.
26.1. Notify DLNR 24 hours proper to test.
26.2. Test BOPE and casing and have DLNR witness and approve.
26.3. Log test results and approval of test on tour sheets and morning report.
26.4. All pushers, drillers and derrick men will be trained in use of monitoring equipment and this training will be logged in IADC tour sheets.
26.5. Test casing to 2000 psi or 70% of burst, whichever is less.
26.6. Install test plug in casing head and test BOPE to 3500 psi.

KS-9 Drilling Procedures 4
27. Use 12⅛" bit with slick BHA and clean out cement and floats.
28. Drill 1' to 5' of new hole and circulate hole clean.
29. Perform leak-off test, and squeeze cement if necessary.
30. POH. Make up 12 1/4" bit and tools. Drill 12 1/4" hole to 4000' ±. Casing point will be in the cap rock above the reservoir as determined by the wellsite geologist using criteria described in the Plan of Operations.
   30.1. Do directional work and drill 12 1/4" hole to 4000' ±. See directional program.
   30.2. Survey as required at intervals not to exceed 120'. Take MRT with surveys.
   30.3. Catch 10' grab samples of drill cuttings.
   30.5. Monitor well for increase or decrease in flow rates and gasses.
   30.6. Keep close watch on samples for changes in mineralogy indicative of a high-temperature geothermal reservoir.
   30.7. Cement off lost circulation zones.
   30.8. Turn on one mud cooler when FLT reaches 150°F and 2nd mud cooler if FLT reaches 150°F again.
   30.9. If well indicates flow or pressure during trips, cool hole with both coolers and then recheck well.
31. Circulate hole clean and wipe hole to shoe. Circulate hole clean.
32. POH and rig up to run 9¾" liner on liner hanger, providing 200 linear feet of lap. Equip liner as follows. Float shoe and float collar 80' up from shoe. Centralize liner 10' up from shoe, on 1st, 2nd, 3rd and every 4th collar thereafter or as per program through kick and build. Liner hanger to have tie-back capability.
   32.1. Make up liner hanger prior to running liner and stand back in derrick.
   32.2. Run approximately 2200' of 9¾" 47# C90 New Vam casing.
   32.3. Run casing at slow speeds to prevent down surge on formation.
   32.4. Fill casing while running.
   32.5. Keep hole full.
   32.6. Monitor well closely.
   32.7. Be cautious of slips on hanger when running through BOPE.
   32.8. Run and hang liner and break nut.
33. Rig up and circulate hole clean and condition mud for cement job.
34. Pump 50 ft³ H₂O ahead plus 133 ft³ flow check, and 10 ft³ H₂O followed by Hawaii cement with 40% SSA-1, required additives, and retarded as needed, followed by 85 ft³ Hawaii cement with 40% SSA-1 + 0.65% CFR-2. Drop dart and displace cement.
   34.1. Monitor well closely while cementing.
35. Release liner and pull out of hole 200'.

KS-9 Drilling Procedures 5
36. WOC for minimum of 8 hours.

37. RIH with 12¾" bit and clean out cement to top of liner hanger.

38. Make up 8½" bit and clean out liner hanger.

39. Test liner lap to 0.9 psi/ft. gradient. Squeeze cement and retest if necessary.

40. Make up latch-in stab-in mandrel for tie back receptacle and 1800′ ± of 9% 47#/C-90 New Vam casing, equipped with insert float on top of 1st joint and centralized with positive centralizers on 1st, 2nd and every 3rd collar thereafter with positive centralizers.
   40.1. Size casing so collar will not be in expansion spool packoff.
   40.2. Circulate hole clean.
   40.3. Install centering ring.

41. Pump 50 ft³ H₂O ahead followed by 970 ft³ Hawaii cement with 40% SSA-1 + 0.65% CFR-3 + 3% gel and 3% CaCl₂. Drop plug and displace to insert.
   41.1. WOC 16 hours.

42. Cut off casing and install expansion spool. Test with nitrogen to 3500 psi.

43. Install BOP stack for 9 5/8" casing including master valve (see Figure 3-6).
   43.1. Notify DLNR 24 hours prior to testing BOPE.
   43.2. BOPE to be tested to 3500 psi. Set RTTS in 9-5/8" casing for test.
   43.3. Test to be witnessed and approved by DLNR.

44. Test tieback casing to 2000 psi or 70% of burst, whichever is less.

45. Clean out tie back and liner to float.
   45.1. Test liner to 2000 psi or 70% of burst, whichever is less.
   45.2. Set RTTS below lap if needed for test.

46. Clean out casing and drill 1′ to 5′ of new 8½" hole.
   46.1. Circulate hole clean.
   46.2. Perform leak-off test and squeeze if necessary.

47. Drill 8½" hole to 7100′ ± TVD or until sufficient production is encountered.
   47.1. Take surveys every 120′ and include MRT.
   47.2. Catch 10′ grab samples of drill cuttings.
47.3. Keep close watch on mud properties. Weight up as needed to control well. Keep PH approximately 9.
47.4. Be sure all monitoring equipment is in good working order.
47.5. Watch closely for flow or loss.
47.6. Watch closely for changes in mineralogy indicative of high temperature geothermal reservoir.
47.7. Turn on one mud cooler when FLT reaches 150°F. Turn on 2nd cooler when FLT again reaches 150°F.
47.8. If well indicates flow or shut in pressure during trips, cool hole with both mud coolers and recheck well.
47.9. Stroke master valve from full open to close and test on every trip.

48. At TD circulate hole clean.
48.1. Displace mud with water or completion fluid.
49. Perform preliminary flow test to muffler to clean out well.
50. If needed to maintain hole stability, run 7” perforated liner from 100’ above the 9 5/8” shoe to T.D. (If we can keep well dead with water or weighted mud.)
51. Lay down drill pipe and tools.
52. Perform flow test and surveys to inspect mechanical integrity of well.
53. Secure well.
53.1. Install companion flange and swab valve.
54. Rig down and move rig.
55. Release well to O&M
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV. OF WATER RESOURCE MANAG' INT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

November 13, 1962

Well No. 125-9

Contractor P.C. O.

DESCRIPTION OF ACTIVITIES

YESTERDAY
Kelly Broke - Rivetted Kelly 4½ Hrs.
At Mary of 60'

Weather CLOUDY

Submitted by [Signature]
<table>
<thead>
<tr>
<th>Well No.</th>
<th>Contractor</th>
</tr>
</thead>
<tbody>
<tr>
<td>K50</td>
<td>P60</td>
</tr>
</tbody>
</table>

**DESCRIPTION OF ACTIVITIES**

Measuring 42° compression 1200' at 60' |

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**Weather**

Good

Submitted by [Signature]

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DEPARTMENT OF LAND AND NATURAL RESOURCES
DIV 1 OF WATER RESOURCE MANAGEMENT
P. O. Box 373
Honolulu, Hawaii 96809

DAILY REPORT

November 10, 1992

Well No. 15-7  Contractor P~

DESCRIPTION OF ACTIVITIES

DRILLING 47' COMPACTION HOLE AT DEPTH OF 27'.

Weather Good

Submitted by ___
November 9, 1952

Well No. 1559  Contractor LCV

DESCRIPTION OF ACTIVITIES

Start Hole Deeper - Drilling Conductor Hole

Weather Rain

Submitted by [Signature]
DAILY REPORT

November 6, 19__

Well No. K5-9 Contractor Pnv

DESCRIPTION OF ACTIVITIES

Start Date

Completion Date

Weather Pash

Submitted by