

PGV Well 08-2883-07

- | | |
|--|----------|
| 1. PGV Application for Well Construction Permit | 3/19/90 |
| 2. Well Construction Permit | 4/2/90 |
| 3. PGV Extension for well no. 2883-07 | 9/14/90 |
| 4. Extension for PGV Well 2883-07 | 11/7/90 |
| 5. Re:notification Monitor Well Drilling Program | 11/29/90 |
| 6. No. 2883-07 and Request for Permit Extension | 12/17/90 |

JOHN WAIHEE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

P. O. BOX 621
HONOLULU, HAWAII 96809

DEC 17 1990

REF:WRM-MH

Mr. William J. Teplow
Field Manager
Puna Geothermal Venture Construction
P.O. Box 1337
Hilo, Hawaii 96721-1337

Dear Mr. Teplow:

Time Extension for Kapoho Monitor Well 2883-07

We acknowledge receipt of your letter requesting a six-month extension for the start-of-construction of the subject well. By this letter, your request to extend the start-date from October 2, 1990 to April 2, 1991 is approved.

Additionally, the Department has no objections to your modified cementing program and hereby approves your request to grout the 4" casing from the surface to a depth of 500 feet. All other conditions of the permit shall remain in effect and any other contemplated changes in the drilling program shall be subject to the Chairperson's prior approval.

Please notify the Division of Water Resource Management, in writing, of the actual date of the start of work. Should you have any questions, please contact Manabu Tagomori, Deputy Director, at 548-7533.

Very truly yours,

A handwritten signature in black ink, appearing to read "W. Paty", written over the typed name "WILLIAM W. PATY".

WILLIAM W. PATY

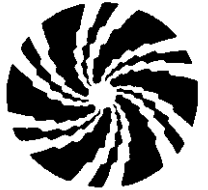
WILLIAM W. PATY, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES

KEITH W. AHUE
MANABU TAGOMORI
RUSSELL N. FUKUMOTO

AQUACULTURE DEVELOPMENT
PROGRAM
AQUATIC RESOURCES
CONSERVATION AND
ENVIRONMENTAL AFFAIRS
CONSERVATION AND
RESOURCES ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
PROGRAM
LAND MANAGEMENT
STATE PARKS
WATER RESOURCE MANAGEMENT

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NOV 30 11 10

November 29, 1990

Mr. Manabo Tagomori, Deputy Director
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

DEPARTMENT OF LAND &
NATURAL RESOURCES

RE: Notification of modification of monitor well drilling program,
Permit No. 2883-07 and request for permit extension.

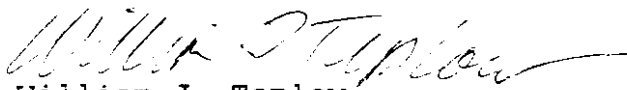
Dear Mr. Tagomori:

Puna Geothermal Venture (PGV) has modified the cementing program for monitoring well No. 2883-07. The well design in the drilling permit application called for grouting of the 4" casing from a depth of 30' back to the surface. We are now proposing to change this grouting program. The new program will consist of grouting the 4" casing from a depth of 500' back to the surface (see attached casing schematic). This change is being made to insure that surface runoff in the vicinity of the wellhead will not contaminate the unconfined aquifer which is to be monitored by this well.

Because of the long delay in receiving the County Plan Approval which was required to proceed with project construction, the start of monitoring well drilling activity on site was delayed several months. We are therefore requesting a six month extension for this permit. We expect to start drilling the well on January 2, 1991. The other required monitoring well for the project (Permit No. 2983-01) is currently being drilled.

If you have any questions regarding the modified program, please give me a call.

Sincerely,
PUNA GEOTHERMAL VENTURE

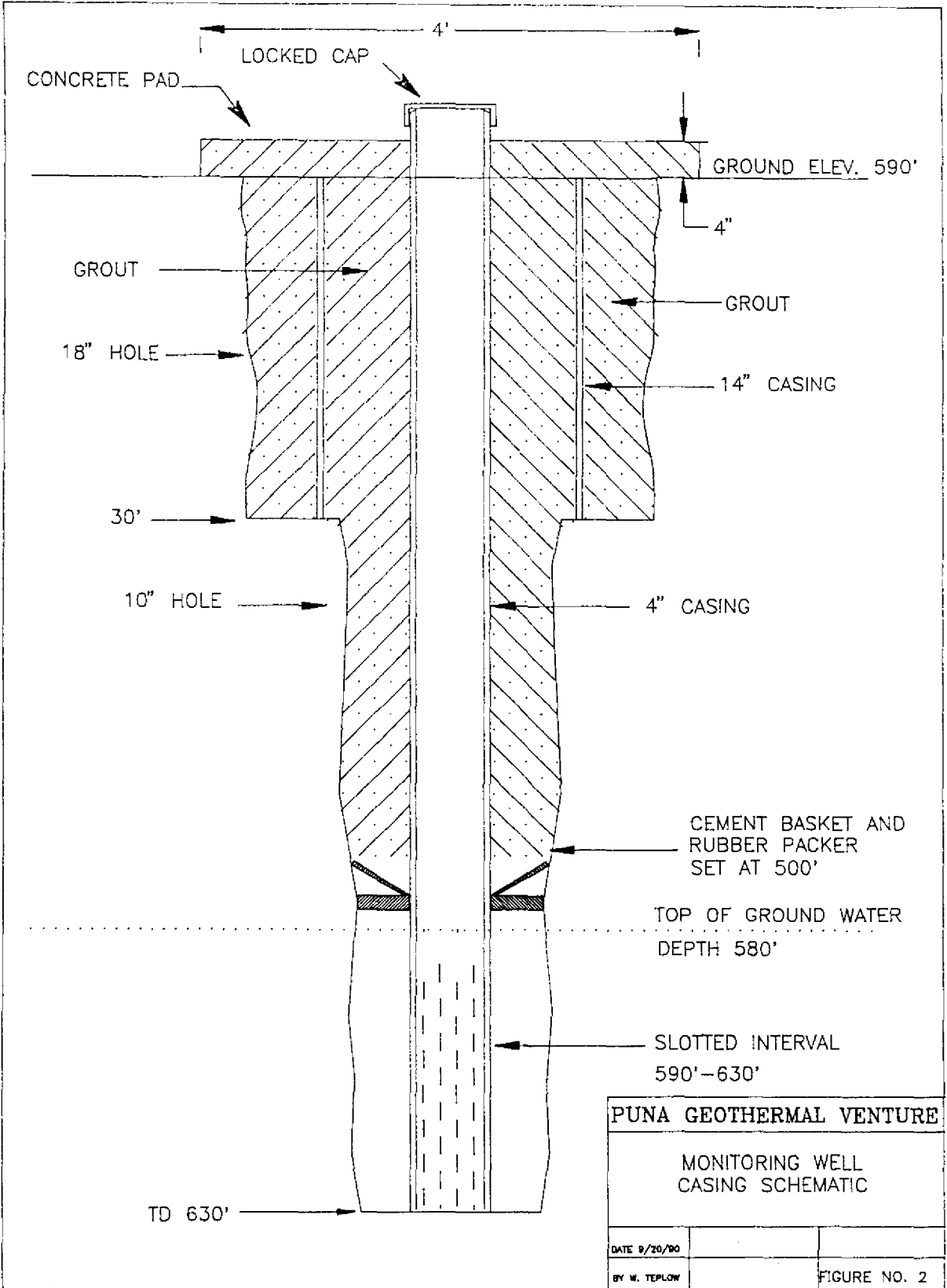

William J. Teplow
Field Manager

cc: Butch Clark
Terry Crowson

attachment: Casing Schematic

PUNA GEOTHERMAL VENTURE CONSTRUCTION

P.O. Box 1337 • Hilo, Hawaii 96721-1337 • Telephone (808) 961-2786 • Facsimile (808) 935-5562



PUNA GEOTHERMAL VENTURE

**MONITORING WELL
CASING SCHEMATIC**

DATE 9/20/90		
BY W. TEFLOW		FIGURE NO. 2

JOHN WAIHEE
GOVERNOR OF HAWAII



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

P. O. BOX 621
HONOLULU, HAWAII 96809

WILLIAM W. PATY
CHAIRPERSON

JOHN C. LEWIN, M.D.
MICHAEL J. CHUN, Ph.D.
ROBERT S. NAKATA
RICHARD H. COX
GUY K. FUJIMURA

MANABU TAGOMORI
DEPUTY

REF:WRM-LN

NOV 7 1990

Mr. William F. Teplow
Field Manager
Puna Geothermal Venture Construction
P.O. Box 1337
Hilo, HI 96721-1337

Dear Mr. Teplow:

Extension for PGV Well 2883-07

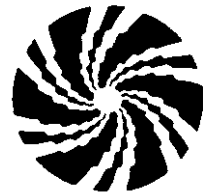
We acknowledge receipt of your letter requesting a six-month extension of the start-of-construction date for the subject well.

By this letter, your request is approved to extend the start-date from October 2, 1990 to April 2, 1991. All other conditions of the permit remain in effect.

Very truly yours,

WILLIAM W. PATY

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CORPORATED



RECEIVED

00 SEP 18 P 2: 59

00 SEP 25 P 3: 36

LAND & NATURAL RESOURCES
STATE OF HAWAII

September 14, 1990
DIV. OF WATER &
LAND DEVELOPMENT

William Paty
Chairman
Board of Land & Natural Resources
Kalanimoku Bldg. #130
1151 Punchbowl Street
Honolulu, HI 96813

Subject: Puna Geothermal Venture
Extension for Well No. 2883-07

Dear Mr. Paty,

Puna Geothermal Venture respectfully requests a six month extension to construct Observation Well No. 2883-07. The permit for the well was approved by the Commission on Water Resource Management on April 2, 1990 and the six month commencement period will close on October 2, 1990. We have been unable to proceed with construction because of delays with the project's permitting process, most notably the signing of the Emergency Response Plan by the Civil Defense Director. The grubbing permit required for drill pad preparation was issued on September 7, 1990. It does not appear that we will be able to complete site preparation and mobilize the drill rig before the October 2nd deadline. We are therefore requesting a six month extension of the above referenced permit.

Should you have any questions or require any additional information, please contact me at our Hilo office at 961-2786.

Thank you for your consideration in this matter.

Sincerely,

William F. Teplow
Field Manager

WT/sdb

PUNA GEOTHERMAL VENTURE CONSTRUCTION

P.O. Box 1337 Hilo, Hawaii 96721-1337
99-Aupuni Street #114 • Hilo, Hawaii 96720 • Telephone (808) 961-2786 • Facsimile (808) 935-5562

JOHN WAIHEE
GOVERNOR OF HAWAII



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

P. O. BOX 621
HONOLULU, HAWAII 96809

WELL CONSTRUCTION PERMIT

for

Puna Geothermal Venture Monitor Well
Well No. 2883-07
Kapoho, Hawaii

WILLIAM W. PATY
CHAIRPERSON

JOHN C. LEWIN, M.D.
MICHAEL J. CHUN, Ph.D.
ROBERT S. NAKATA
RICHARD H. COX
GUY K. FUJIMURA

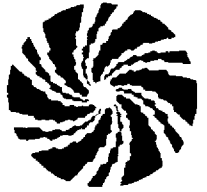
MANABU TAGOMORI
DEPUTY

TO: Puna Geothermal Venture
101 Aupuni St., Ste. 1014-B
Hilo, Hawaii 96720

In accordance with the Department of Land and Natural Resources Administrative Rules, Section 13-168, entitled "Water Use, Wells, and Stream Diversion Works", your application to construct a ground water monitor well (Well No. 2883-07) within Tax Map Key: 1-4-01:2 is approved, subject to the following conditions:

1. The Division of Water and Land Development (DOWALD), Geology-Hydrology Section, shall be notified at 548-7543, before any work by this permit commences.
2. The well shall be use for monitoring and testing only.
3. The following shall be submitted to DOWALD, P.O. Box 373, Honolulu, Hawaii 96809 within 30 days after completion of the well:
 - a. Well Completion Report (form enclosed).
 - b. Elevation (referenced to mean sea level) survey by a Hawaii-licensed surveyor.
 - c. As-built sectional drawing of the well.
 - d. Plot plan and map showing the exact location of the well.
 - e. Periodic reports of monitoring and testing results.

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March 19, 1990
Reference No. 90091.011

Mr. William Paty
State of Hawaii
Commission on Water Resource Management
Department of Land and Natural Resources
Division of Water & Land Development
P.O. Box 373
Honolulu, HI 96809

RE: PUNA GEOTHERMAL VENTURE
APPLICATION FOR WELL CONSTRUCTION PERMIT

Dear Mr. Paty,

Please find enclosed a completed application for a monitoring well to be drilled within the Puna Geothermal Venture project property boundaries. Condition 10 of our Geothermal Resources Permit is attached to this letter. Condition 10 requires such a monitoring well and reads in part:

' . . . the (hydrologic) monitoring program shall, at a minimum, provide for quarterly monitoring of water levels and appropriate chemical species from existing wells within the shallow aquifer . . . as well as from a well located within the project boundary and completed within the shallow aquifer.'

We would appreciate your review of the monitoring well application at your earliest convenience in order that planning for the process of drilling of this monitoring well can proceed as quickly as possible.

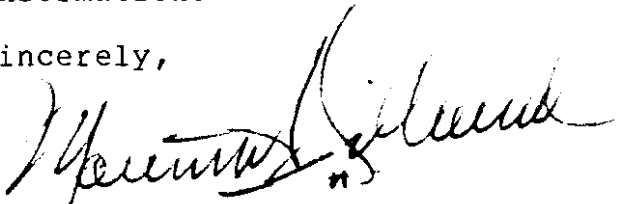
PUNA GEOTHERMAL VENTURE

- | | | | | |
|---|---|--------------------------|---|--------------------------|
| <input type="checkbox"/> 101 Aupuni Street Suite 1014-B, Hilo, Hawaii 96720 | • | Telephone (808) 961-2184 | • | Facsimile (808) 961-3531 |
| <input type="checkbox"/> 610 East Glendale Ave., Sparks, Nevada 89431-5811 | • | Telephone (702) 356-9111 | • | Facsimile (702) 356-9125 |

Mr. William Paty
March 19, 1990
Page 2

Please contact Keith Kennedy, Christine Iha, or myself at 961-2184 in Hilo if you have any questions or require further information.

Sincerely,



Maurice A. Richard
Regional Development Manager

MAR:rk

Enclosure

cc: C. Bronstein - Project Manager
C. Iha - Environmental Coordinator
K. Kennedy - Technical Consultant

PUNA GEOTHERMAL VENTURE
HYDROLOGIC MONITORING PROGRAM
APPENDIX H1

GRP CONDITIONS RELATIVE TO THE
HYDROLOGIC MONITORING PROGRAM

10. Prior to commencing any geothermal well drilling, testing, production, or injection activity approved under this Geothermal Resource Permit, the permittee shall submit to, and secure the approval of, the Planning Director of a hydrologic monitoring program. The program shall, at a minimum, provide for the quarterly monitoring of water levels and appropriate chemical species from existing wells completed within the shallow aquifer in those areas downgradient of the project area, including the Green Lake water supply, as well as from a well located within the project boundary and completed within the shallow aquifer. The monitoring, sampling, and analysis protocols shall be clearly defined in the program submitted to and approved by the Planning Director. The monitoring and sampling shall be conducted by a qualified contractor, and the samples analyzed by a qualified laboratory, selected by the permittee but subject to the approval of the Planning Director. The selected contractor and laboratory shall operate under contract to, and shall be funded by the permittee. The program shall monitor the shallow groundwater immediately prior to, and during, all periods of well drilling, testing, production, and injection activity approved under this Geothermal Resource Permit. The data obtained shall be submitted to the Planning Director in accordance with the requirements contained in this Geothermal Resource Permit for submittal of all collected environmental monitoring data. The County shall make random checks of the ground water supply no less than every two months.

State of Hawaii
COMMISSION ON WATER RESOURCE MANAGEMENT
Department of Land and Natural Resources
Division of Water Resource Management

APPLICATION FOR

- WELL CONSTRUCTION PERMIT
 PUMP INSTALLATION PERMIT

INSTRUCTIONS: Please print or type and send completed application with attachments to the Division of Water and Land Development, P. O. Box 311, Honolulu, Hawaii 96809. Application must be accompanied by a non-refundable filing fee of \$25.00 payable to the Department of Land and Natural Resources. (Filing fee waived for government agencies.) If necessary, phone 548-7543, Hydrology/Geology Section for assistance.

1. WELL LOCATION

Island Hawaii Tax Map Key 1-4-01-2
Address Puna

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

2. WELL OWNER

Puna Geothermal Venture, lessee,
Firm Name Kapoho Land Partnership
Contact Person _____

LANDOWNER

Kapoho Land and Development
Firm Name Corporation
Contact Person _____

Address c/o Puna Geothermal Venture Address P. O. Box 374
101 Aupuni St. 1014-B Hilo, HI 96720 Hilo, HI 96720
Phone (808) 961-2184 Phone (808) 935-5810

3. PROPOSED CONTRACTOR FOR: Well Drilling Pump Installation

Name To be selected Phone _____
Address _____ Contractor's License No. _____

4. PROPOSED WORK

- Drill New Well Deepen Redrill
 Alter Seal Abandon
 Install New Pump Replace Pump Modify Pump

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

5. PROPOSED USE

- Municipal (including hotels, stores, etc.) Military
 Domestic (individual, noncommercial water systems) Industrial
 Irrigation (specify) _____ Other (specify) Monitor

6. PROPOSED AMOUNT OF WITHDRAWAL none gallons per day

7. PROPOSED PUMP INFORMATION No pump

Pump Type: Vertical Turbine Submersible Centrifugal
Motor: Diesel Gas Electric: _____ Rated Horsepower _____
Rated Pump Capacity _____ gallons per minute (gpm)

Well Owner (print) Kapoho Land Partnership Landowner (print) Kapoho Land + Development Corp.
Signature [Signature] Signature [Signature]
Date 3/2/40 Date 3/2/40

For Official Use Only:

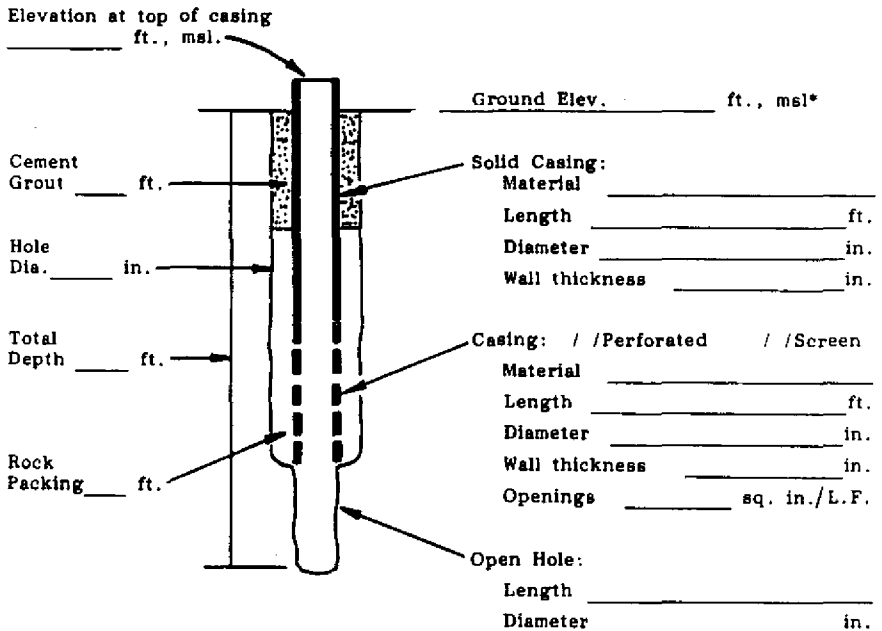
Field Checked By _____ Latitude _____ Hydrologic Unit _____
Date _____ Longitude _____ State Well No. 29-1-11

Briefly describe the proposed work:

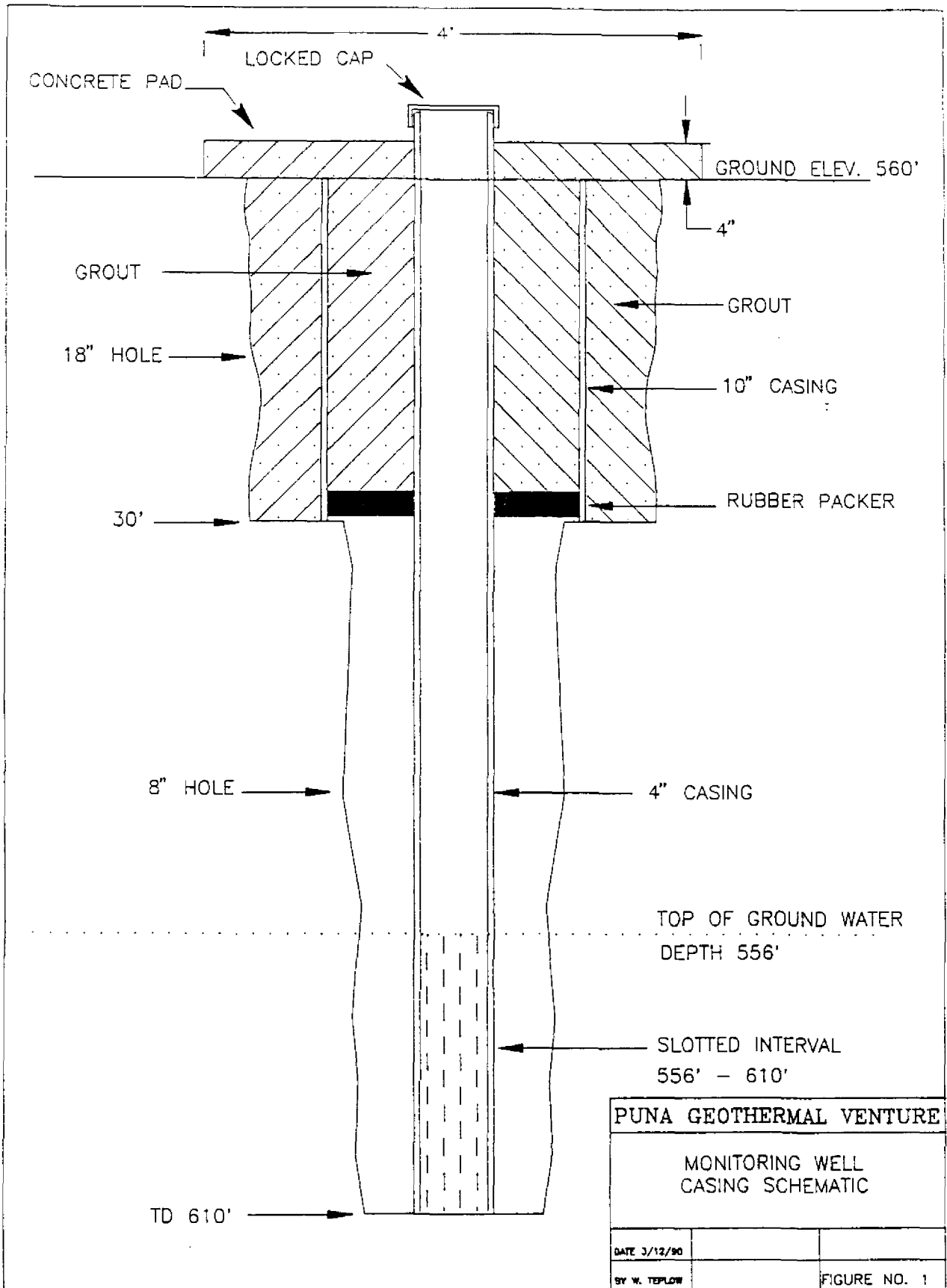
see attached sheets:

- "Proposed Work..." and Figure 1, "Casing Schematic"

PROPOSED SECTION OF WELL



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



PUNA GEOTHERMAL VENTURE		
MONITORING WELL CASING SCHEMATIC		
DATE 3/12/90		
BY W. TEPLOW		FIGURE NO. 1

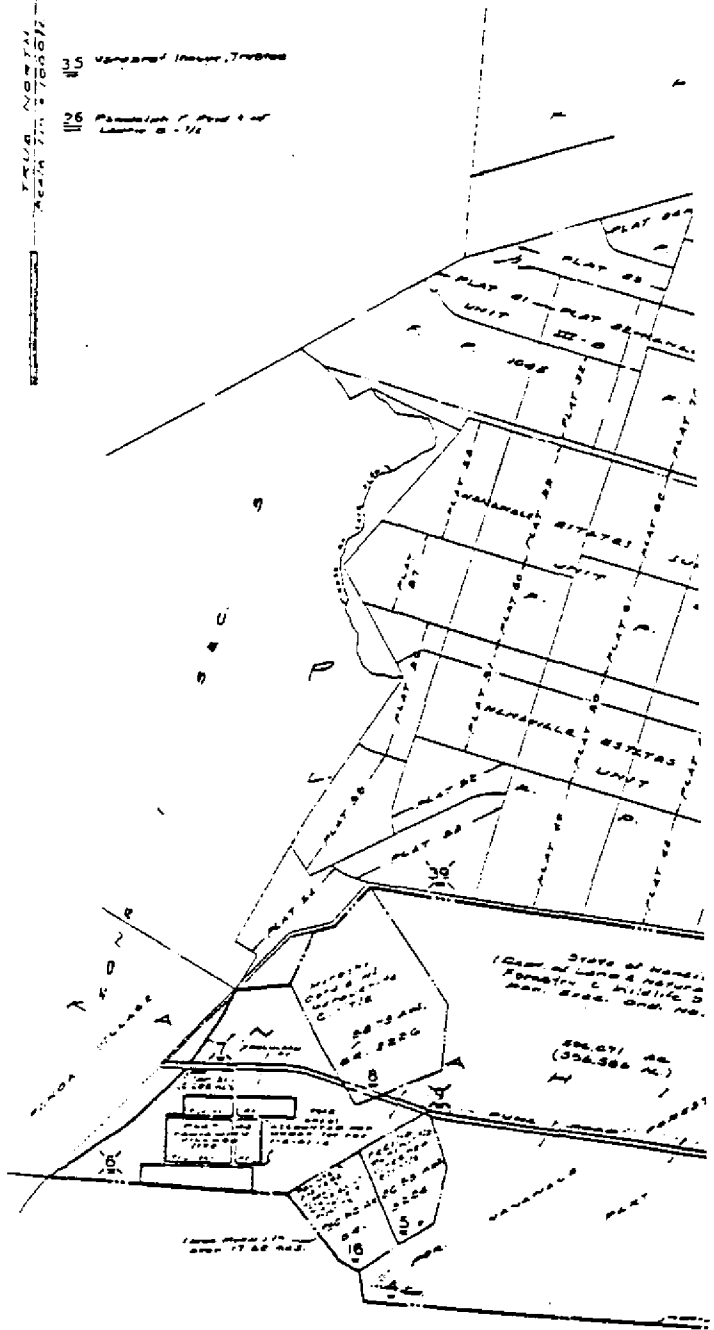
PROPOSED WORK
MONITORING WELL INSTALLATION
PUNA GEOTHERMAL VENTURE

(See Monitoring Well Casing Schematic, Figure 1)

1. Drill 18" hole to 30'.
2. Run 35' of 10" ID, 0.250" wall steel casing.
3. Grout 10" casing to surface with neat cement. WOC and cut off 10" casing at ground surface.
4. Drill 8" hole from 30' to 50' below sea level (total depth of approximately 610').
5. Run 4" ID, 0.237" wall steel casing with bottom 70' slotted with 2" X 1/4" slots, 12 slots per foot. Run casing with rubber packer set at 25' from surface.
6. Grout 10" X 4" annulus above packer to the surface with neat cement grout.
7. Cut off 4" casing 12" above ground surface. Install locking cap. Pour 4'X4'X4" concrete pad surrounding 4" casing.

- 24 James H. Thomas & Josephine P. Thomas - 1/16
- 25 Margaret Thomas
- 37 Alexander S. and Susan S. - 1/16
- 35 Margaret Thomas, Trustee
- 26 Elizabeth P. and S. of Laura B. - 1/16

- 48 John H. Cook
- 49 The Heirs of Thomas H. Cook
- 50 Cary L. Cook



- 12 State of Hawaii (Dept. of Land & Natural Resources - Div. of State Parks - 2000 sq. ft. - Lava Tree Park)
- 42 E. L. Cook & Joe W. Cook - 1/16
- 43 William H. T. Cook & M. Blodgett - 1/16
- 44 William H. T. Cook & M. Blodgett - 1/16
- 45 Paul J. Blodgett (M. Blodgett) - 1/16
- 62 Robert Cook, William Cook, Henry Cook, William Cook, Lawrence Cook Trust - 1/16
- 46 Robert W. Cook
- 47 Robert W. Cook
- 48 John H. Cook
- 49 The Heirs of Thomas H. Cook
- 50 Cary L. Cook
- 51 John E. Mar - 1/16
- 52 James H. Cook - 1/16
- 53 James H. Cook - 1/16
- 54 William H. Cook - 1/16
- 82 State of Hawaii (The Heritage Group of the University of Hawaii) - 1/16

