

STATE OF OREGON  
 DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES  
 1069 State Office Building Portland, Oregon 97201

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HISTORY OF GEOTHERMAL WELL  
 (Submit in duplicate)

DEPT OF GEOLOGY  
 & MINERAL INDUSTRIES

In compliance with rules and regulations adopted pursuant to ORS 522.355 (Chapter 552 OL 1975)

Operator Orvail Buckner ~~Field~~ Newberry Crater  
 Well No. RDO-1, Sec. 31 .T. 21S R. 13E W. B. & M.  
 Signed *Orvail Buckner*  
 Date Title *Pres*  
 (President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

- |          |   |                                 |
|----------|---|---------------------------------|
| Date     |   |                                 |
| 9/16/83  | Mix mud, start 9-7/8" hole, drill ~30'.                                       |                                 |
| 9/17/83  | Drill to 420' in 14-1/2 hours.  | <i>Water from 420' and 80'.</i> |
| 9/18/83  | Drill 420' to 800' in 24 hours.   |                                 |
| 9/19/83  | Drill 800' to 1040' in 13-1/2 hours, entered hard formation, stopped to case. |                                 |
| 9/20/83  | Shut down.  |                                 |
| 9/21/83  | Shut down.  |                                 |
| 9/22/83  | Circulate and pull out.   |                                 |
| 9/23/83  | Welded 900' casing in 18 hours (8" dia x .25" wall).                          |                                 |
| 9/24/83  | Set casing to 1030', pump cement (176 sacks with retarder).                   | <i>great progress</i>           |
| 9/25/83  | Partial assembly of B.O.P.  | <i>1st attempt go</i>           |
| 9/26/83  | Pressure grout surface to 50' (110 sacks bought--too much)                    | <i>2nd attempt</i>              |
| 9/27/83  | Set B.O.P., drill cement from casing to 900'.                                 | <i>3rd attempt</i>              |
| 9/28/83  | Circulate and test B.O.P., start drilling, 7-7/8".                            | <i>4th attempt</i>              |
| 9/29/83  | Drill 1040' to 1336', hard drilling.  | <i>5th attempt</i>              |
| 9/30/83  | Drill 1336' to 1390', artesian flow observed, shut in B.O.P.                  | <i>6th attempt</i>              |
| 10/01/83 | Added weight material to mud; attempted temperature logs.                     |                                 |
| 10/02/83 | Added more weight material, well killed; attempted temperature logs.          |                                 |
| 10/02-   | Wait for decisions on well.   | <i>10/1/83</i>                  |
| 10/16/83 |   | <i>10/4/83</i>                  |
| 10/17/83 | Pulled steel.   | <i>10/5/83</i>                  |
| 10/18/83 | Trip in rig to pump cement.   | <i>10/16/83</i>                 |
| 10/19/83 | Pump cement 1390' to 640' (130 sacks with retarder and silica flour).         |                                 |
| 10/20/83 | Pump cement 120' to surface (40 sacks with retarder and silica flour).        |                                 |
| 10/21/83 | Cut casing, welded cap, buried well head.                                     |                                 |