

HISTORY OF ~~XXXXXXXXXXXXXXXXXXXX~~ Geothermal well  
 (Submit in duplicate)

In compliance with rules and regulations adopted pursuant to ORS 520.095 (Chapter 667 OL 1953)

Operator THERMAL POWER COMPANY Field Klamath Hills Area  
 Well No. 0'Connor Ranch No. 1 , Sec. 35 , T. 40S R. 9E W.B. & M.  
 Signed *W. L. D'Olier*  
 Date September 4, 1976 Title Vice-President  
 (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
- 6-12-76 Moved in Hunnicutt & Camp Drilling Company of Rio Vista, California, Rig No. 3.
  - 6-13-76 Drilled 26" hole to 297'. Mud 67 pcf. Lost returns while drilling at 70'.
  - 6-14-76 Depth 498'. Mud 64 pcf. Totco 1<sup>0</sup> @ 498'.
  - 6-15-76 20" casing @ 496'. Ran in 30" conductor and 26" hole 500.14' (17 joints) of 20" OD, 94#, H-40, buttress, smls., new USS casing including Baker guide shoe and centralizer @ 465'. Bakerlocked and tack welded bottom 4 collars, welded shoe solid. Cemented shoe at 496' with 1050 sacks Class G cement premixed with 3% CaCl<sub>2</sub>. Displaced with 900 cf mud. Had partial to no returns during job. Ran 2" pipe to 75' where it stopped. Pumped in 500 sacks Class G cement with good cement returns to surface. Cement in place @ 6:05 PM by BJ.
  - 6-16-76 Landed 20" casing. Installed 20" Series 600 Hydril GK. Ran bit. Tested 20" casing, Hydril, check valve and kelly cock with 950 psig. for 15 minutes without loss. Test witnessed and approved by Oregon Department of Geology and Mineral Industries. Installed Exploration-Logging mud logging service. Drilled 17½" hole to 548'. Mud 66 pcf.
  - 6-17-76 Depth 716'. Mud 67 pcf.
  - 6-18-76 Depth 904'. Mud 70 pcf. Totco 1<sup>0</sup>45' @ 879'. Thermometers 138-122-118 OF @ 879'.
  - 6-19-76 Depth 1086'. Mud 69 pcf.
  - 6-20-76 Depth 1385'. Mud 70 pcf.
  - 6-21-76 Depth 1481'. Mud 70 pcf. Lost circulation while drilling @ 1437'.
  - 6-22-76 Depth 1670'. Mud 70 pcf.
  - 6-23-76 Depth 1863'. Mud 70 pcf. Totco 1<sup>0</sup> @ 1852'.
  - 6-24-76 Depth 2036'. Mud 70 pcf.
  - 6-25-76 Depth 2141'. Mud 70 pcf. Totco 2<sup>0</sup> @ 2141'.
  - 6-26-76 Depth 2290'. Mud 71 pcf.
  - 6-27-76 Depth 2378'. Mud 72 pcf. Totco 3<sup>0</sup>15' @ 2378'. Twisted off drill pipe while drilling @ 2378'. Ran overshot and recovered fish.
  - 6-28-76 Ran Schlumberger Induction-Electrical, Sonic and Temperature (2 times) logs 498'-2378'.

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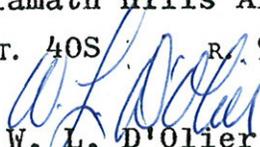
In compliance with rules and regulations adopted pursuant to ORS 520.095 (Chapter 667 OL 1953)

Operator THERMAL POWER COMPANY

Field Klamath Hills Area

Well No. O'Connor Ranch No. 1, Sec. 35, T. 40S R. 9E

W.B. &amp; M.

Signed  W. L. D'Olier

Date September 4, 1976

Title Vice-President

(President, Secretary or Agent)

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Date

6-29-76 13-3/8" casing @ 2378'. Ran in 20" casing and 17 $\frac{1}{2}$ " hole 13-3/8" OD, K-55, ST&C, SRT, R3, new, smls. Republic casing: top 1 joint (44.39') of 61#; 26 joints (1140.20') of 54 $\frac{1}{2}$ #; bottom 27 joints (1195.38') of 61# including Baker Flexiflow shoe and centralizers @ 2178', 2298' & 2338'. Bakerloked and tack welded bottom 4 collars, welded shoe solid. Cemented shoe @ 2378' with 2600 cf slurry volume mixed Class G cement 1:1 with expanded perlite, 35% silica flour, 2% gel. Had decreasing mud returns with no returns last 200 cf displacement. Last 100 cf mud returns were cement cut. Ran 1" pipe to 60' outside 13-3/8" casing. Pumped in 80 cf of same slurry plus 3% CaCl<sub>2</sub> and had good cement returns to surface. Cement in place @ 12:30PM by BJ.

6-30-76 Landed 13-3/8" casing. Removed 20" Hydril and cut off 20" flange. Installed 12" Series 900 Shafco casing head. Installed 12" Series 900 Shaffer double hydraulic control gate and Hydril GK. Tested 13-3/8" casing, blowout preventers, check valve and kelly cock with 1500 psig. Witnessed and approved by Oregon Department of Geology and Mineral Industries.

7- 1-76 Thermometers 210-140-254<sup>o</sup>F. @ 2393'.

7- 2-76 Drilled 12 $\frac{1}{4}$ " hole to 2566'. Mud 70 pcf.

7- 2-76 Depth 2693'. Mud 70 pcf. Totco 7<sup>o</sup> @ 2636' & 2693'.

7- 3-76 Depth 2946'. Mud 70 pcf. Totco 7<sup>o</sup>15' @ 2724', 7<sup>o</sup> @ 2784' & 2846'.

7- 4-76 Depth 2983'. Mud 71 pcf. Totco 7<sup>o</sup>15' @ 2913' & 2961'.

7- 5-76 Depth 3112'. Mud 70 pcf. Totco 6<sup>o</sup>30' @ 3083'.

7- 6-76 Depth 3287'. Mud 71 pcf. Totco 5<sup>o</sup>30' @ 3270'.

7- 7-76 Depth 3439'. Mud 71 pcf.

7- 8-76 Depth 3615'. Mud 71 pcf. Totco 1<sup>o</sup>45' @ 3615'. Thermometers 135-130-132<sup>o</sup>F @ 3615'. Tight spots @ 3403' & 3450' on trip.

7- 9-76 Depth 3852'. Mud 74 pcf.

7-10-76 Depth 4030'. Mud 74 pcf. Totco 1<sup>o</sup> @ 3911', 2<sup>o</sup> @ 4030'. Thermometers 143-141-141<sup>o</sup>F @ 3911', 276-222-222<sup>o</sup>F @ 4030'.

7-11-76 Depth 4243'. Mud 72 pcf. Totco 2<sup>o</sup>45' @ 4222'. Thermometers 138-142-138<sup>o</sup>F @ 4222'.

7-12-76 Depth 4404'. Mud 72 pcf. Totco 3<sup>o</sup> @ 4404'. Thermometers 141-broken-142<sup>o</sup>F @ 4404'.

7-13-76 Depth 4469'. Mud 71 pcf.

7-14-76 Depth 4615'. Mud 71 pcf. Totco 2<sup>o</sup>45' @ 4565'. Thermometers 146-146-146<sup>o</sup>F @ 4565'.

7-15-76 Depth 4711'. Mud 70 pcf. Totco 2<sup>o</sup> @ 4686'. Thermometers 150-150-150<sup>o</sup>F @ 4686'. Lost circulation while drilling @ 4711'.

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Operator THERMAL POWER COMPANY

Field Klamath Hills Area

Well No. O'Connor Ranch No. 1 , Sec. 35

, T. 40S R. 9E

W.B. &amp; M.

Signed *W. L. D'Olier*  
W. L. D'OlierTitle Vice-President  
(President, Secretary or Agent)

Date September 4, 1976

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Date

- 7-16-76 Depth 4739'. Reamed hole 2444'-2932'. Made 6' to 4717' and lost circulation.
- 7-17-76 Depth 4883'. Mud 68 pcf with LCM. Totco 20 @ 4839'. Thermometers 138-138-138°F @ 4839'.
- 7-18-76 Depth 4964'. Mud 71 pcf. Lost circulation while drilling @ 4897'. Pulled 15 stands and regained circulation. Lost circulation while drilling @ 4964'.
- 7-19-76 Depth 4982'. Mud 70 pcf. Lost circulation while drilling @ 4971' and 4982'.
- 7-20-76 Cement plug @ 4892'. Equalized 400 cf slurry volume Class G cement premixed with 3% gel, 3% CaCl<sub>2</sub>, 5% perfalite, 5% walnut shells and 1% celloflake @ 4892'. After 5 hours located top of cement @ 4920'. Could not establish circulation. Equalized 180 cf slurry volume Class G cement premixed with same additives above @ 4892'. After 7 hours cleaned out cement 4867'-4982'.
- 7-21-76 Depth 4990'.
- 7-22-76 Depth 5209'. Mud 67 pcf.
- 7-22-76 Depth 5335'. Mud 67 pcf. Totco 2015' @ 5265'. Thermometers 132-133-134°F @ 5265'. Reduced hole size to 11" @ 5265'.
- 7-23-76 Depth 5483'. Mud 68 pcf. Totco 1015' @ 5483'.
- 7-24-76 Depth 5673'. Mud 67 pcf.
- 7-25-76 Depth 5827'. Mud 67 pcf. Totco 1030' @ 5819'. Thermometers 144-144-154°F @ 5819'. Lost circulation while drilling @ 5727'. Pulled to surface, ran in and regained circulation. Pipe stuck while making connection @ 5742'. Worked pipe loose.
- 7-26-76 Total depth 5842'. Lost circulation while drilling @ 5842'. Pulled to shoe. Ran in to 5142', no returns. Pulled to shoe, tight hole 2476'-2501'. Mixed mud with LCM. Ran in and reamed to 2442' when drill pipe stuck.
- 7-27-76 Backed off drill collars at 2340'. Ran 256' of 6" drill collars and jarred on fish 14 hours without moving it. Backed off fish leaving 11" bit, 3-7" drill collars and 2 drillable stabilizers in hole 2340'-2442'.
- 7-28-76 Cement plug 2088'-2322'. Equalized 210 sacks Class G cement treated with 3% CaCl<sub>2</sub> @ 2322'. Located top of plug @ 2088'. Plug location witnessed and approved by State of Oregon.
- 7-29-76 Changed hole to fresh water @ 2078', and suspended well pending decision on plugging and abandoning.

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Operator Thermal Power Company

Field So. Klamath Falls Area

Well No. O'Connor Ranch No. 1 , Sec. 35

, T. 40S R. 9E

W.B. & M.

Signed

Title Vice President

(President, Secretary or Agent)

Date December 26, 1976

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

12-20-76

Moved in E. E. Storey & Son Well Drilling, Inc. Bailed 13-3/8" casing to 110'. Dumped in 5 sacks bentonite and stirred with bailer. Dumped in 5 sacks neat cement and let harden overnight.

12-21-76

Filled well to cellar floor with neat cement. Cut off 13-3/8", 20" and 30" casings 6' below ground surface and welded steel plate on stub.

Well abandoned December 21, 1976.